KONICA MINOLTA

SERVICE MANUAL

FIELD SERVICE

magicolor 8650

2007.11

KONICA MINOLTA BUSINESS TECHNOLOGIES, INC. Ver. 2.0

FIELD SERVICE TOTAL CONTENTS

SAFETY AND IMPORTANT WARNING ITEMS S-1
- IMPORTANT NOTICE S-1
- DESCRIPTION ITEMS FOR DANGER, WARNING AND CAUTION S-1
- SAFETY WARNINGS S-2
- WARNING INDICATIONS ON THE MACHINE S-18

MEASURES TO TAKE IN CASE OF AN ACCIDENT S-20

Composition of the service manual C-1

Notation of the service manual C-2

magicolor 8650 Main body

- General 1
- Maintenance 9
- Adjustment/Setting 131
- Troubleshooting 273
- Appendix 375

Standard controller

- General 1
- Maintenances 3
- Troubleshooting 19

PC-106/205

- General 1
- Maintenance 3
- Adjustment/Setting 17
- Troubleshooting 21

PC-406

- General 1
- Maintenance 3
- Adjustment/Setting 21
- Troubleshooting 27

FS-519/PK-515/OT-602

- General 1
- Maintenance 7
- Adjustment/Setting 59
- Troubleshooting 67

MT-502

General 1
Maintenance 3
Troubleshooting 7

SD-505

General 1
Maintenance 3
Adjustment/Setting 25
Troubleshooting 33

FS-609/PK-501

General 1
Maintenance 5
Adjustment/Setting 33
Troubleshooting 59

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**

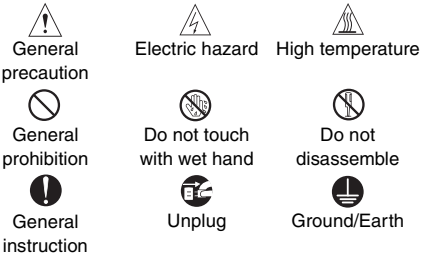
⚠ **CAUTION: Action having a possibility of suffering a slight wound, medium trouble, and property damage**

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.



SAFETY WARNINGS

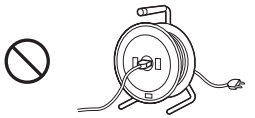
[1] MODIFICATIONS NOT AUTHORIZED BY KONICA MINOLTA BUSINESS TECHNOLOGIES, INC.

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.

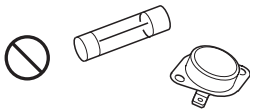
Prohibited Actions

⚠ DANGER

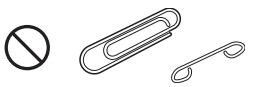
- Using any cables or power cord not specified by KMBT.



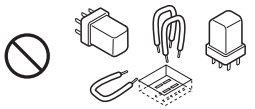
- Using any fuse or thermostat not specified by KMBT. Safety will not be assured, leading to a risk of fire and injury.



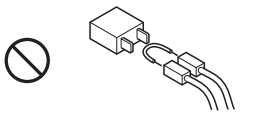
- Disabling fuse functions or bridging fuse terminals with wire, metal clips, solder or similar object.



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

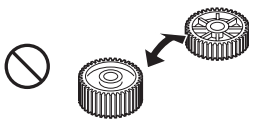


- Disabling safety functions (interlocks, safety circuits, etc.) Safety will not be assured, leading to a risk of fire and injury.



- 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.

Power Cord Set or Power Plug

⚠ WARNING

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

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



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

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

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

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

[3] CHECKPOINTS WHEN PERFORMING ON-SITE SERVICE

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.

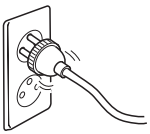
  If excessive current flows in the wall outlet, fire may result.

- 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.

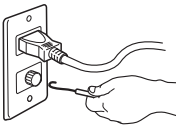
  Contact problems may lead to increased resistance, overheating, and the risk of fire.



- Check whether the product is grounded properly.

  If current leakage occurs in an ungrounded product, you may suffer electric shock while operating the product.

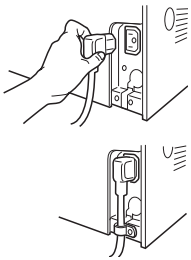
  Connect power plug to grounded wall outlet.



Power Plug and Cord

⚠ WARNING

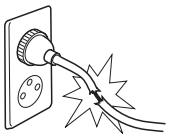
- When using the power cord set (inlet type) that came with this product, make sure the connector is securely inserted in the inlet of the product.
  When securing measure is provided, secure the cord with the fixture properly.
  If the power cord (inlet type) is not connected to the product securely,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



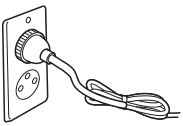
- Check whether the power cord is not stepped on or pinched by a table and so on.
  Overheating may occur there, leading to a risk of fire.



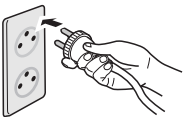
- Check whether the power cord is damaged. Check whether the sheath is damaged.
  If the power plug, cord, or sheath is damaged, replace with a new power cord (with plug and connector on each end) specified by KMBT. Using the damaged power cord may result in fire or electric shock.



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

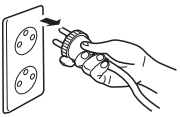


- Check whether dust is collected around the power plug and wall outlet.
  Using the power plug and wall outlet without removing dust may result in fire.



- 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.

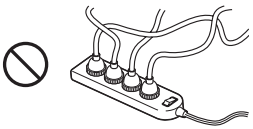


Wiring

⚠ WARNING

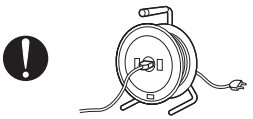
- Never use multi-plug adapters to plug multiple power cords in the same outlet.

  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

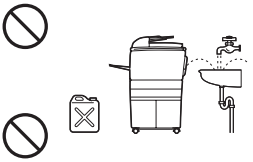
⚠ WARNING

- 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.

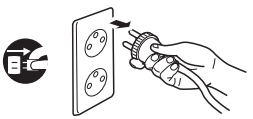


When not Using the Product for a long time

⚠ 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

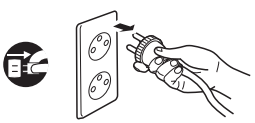
- Before conducting an inspection, read all relevant documentation (service manual, technical notices, etc.) and proceed with the inspection following the prescribed procedure in safety clothes, using only the prescribed tools. Do not make any adjustment not described in the documentation.

  If the prescribed procedure or tool is not used, the product may break and a risk of injury or fire exists.



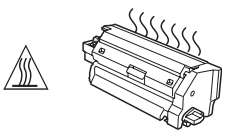
- Before conducting an inspection, be sure to disconnect the power plugs from the product and options.

  When the power plug is inserted in the wall outlet, some units are still powered even if the POWER switch is turned OFF. A risk of electric shock exists.



- The area around the fixing unit is hot.

  You may get burnt.

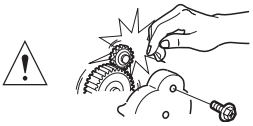


Work Performed with the Product Powered On

⚠ 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

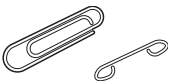
⚠ WARNING

- 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.

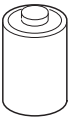


- Do not remove the cover of the write unit. Do not supply power with the write unit shifted from the specified mounting position.

  The laser light can enter your eye, leading to a risk of loss of eyesight.

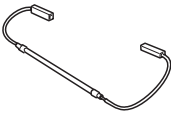
- When replacing a lithium battery, replace it with a new lithium battery specified in the Parts Guide Manual. Dispose of the used lithium battery using the method specified by local authority.

  Improper replacement can cause explosion.



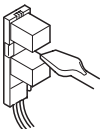
- After replacing a part to which AC voltage is applied (e.g., optical lamp and fixing lamp), be sure to check the installation state.

  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.

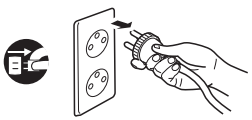


Handling of Service Materials

⚠ 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.



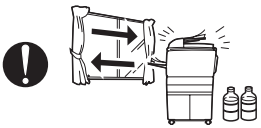
Handling of Service Materials

⚠ 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

CAUTION

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

Germany

VORSICHT!

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

France

ATTENTION

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

Denmark

ADVARSEL!

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

Finland, Sweden

VAROITUS

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

VARNING

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

Norway

ADVARSEL

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

[5] Laser Safety

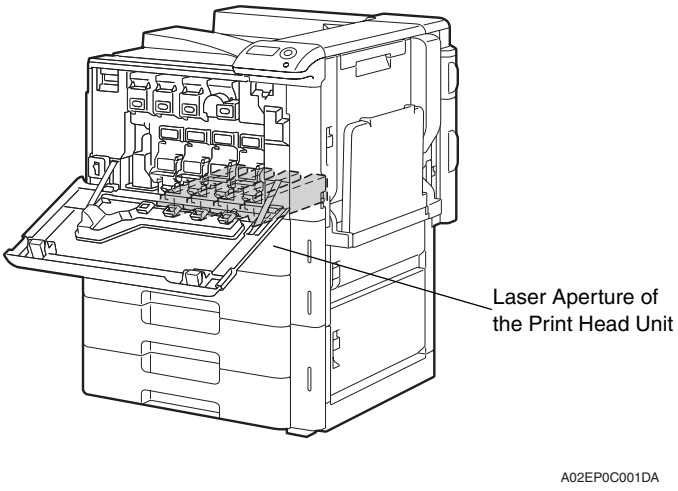
- This is a digital machine certified as a Class 1 laser product. There is no possibility of danger from a laser, provided the machine is serviced according to the instruction in this manual.

5.1 Internal Laser Radiation

semiconductor laser	
Maximum power of the laser diode	30 mW
Maximum average radiation power (*)	11.6 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.



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

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

- The label shown on page S-16 indicates compliance with the CDRH regulations and must be attached to laser products marketed in the United States.

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

semiconductor laser	
Maximum power of the laser diode	30 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	30 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	30 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	30 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	30 mW
våglängden	775-800 nm

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

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

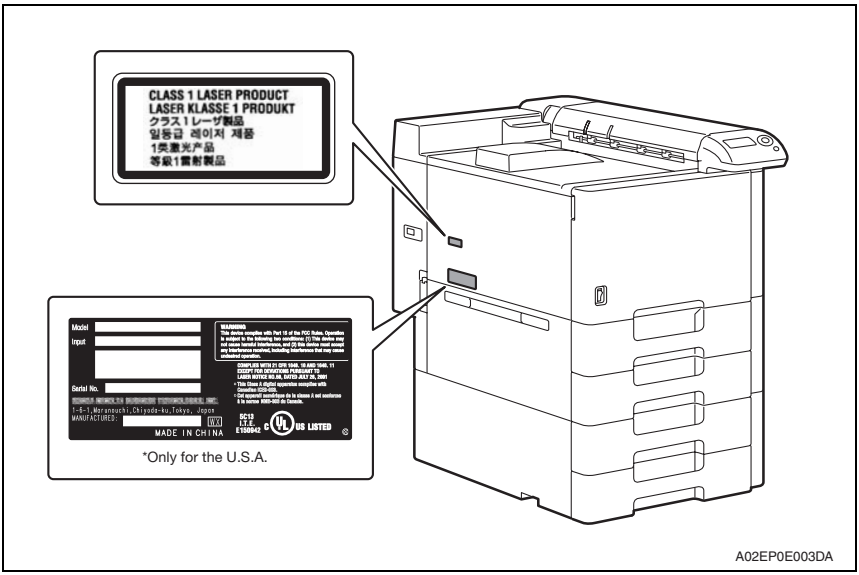
Norway

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

halvleder laser	
Maksimal effekt till laserdiode	30 mW
bølgelengde	775-800 nm

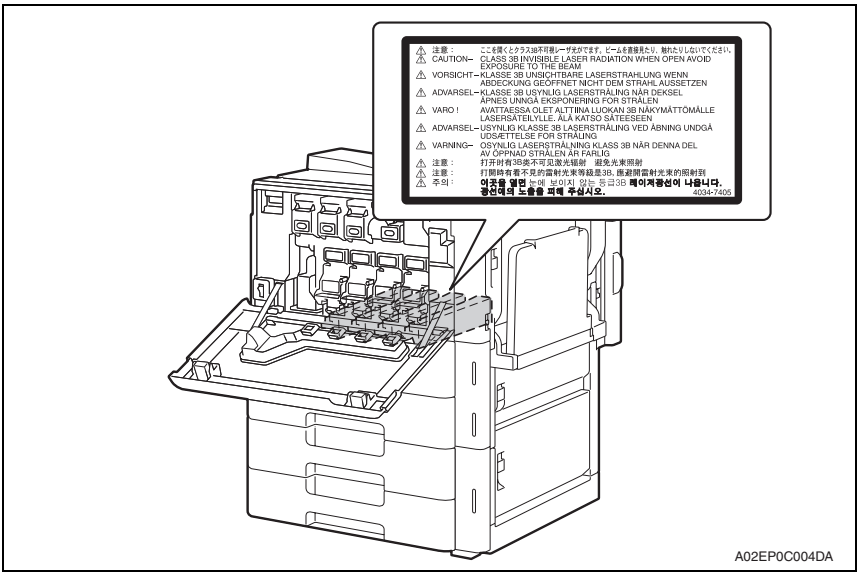
5.2 Laser Safety Label

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



5.3 Laser Caution Label

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

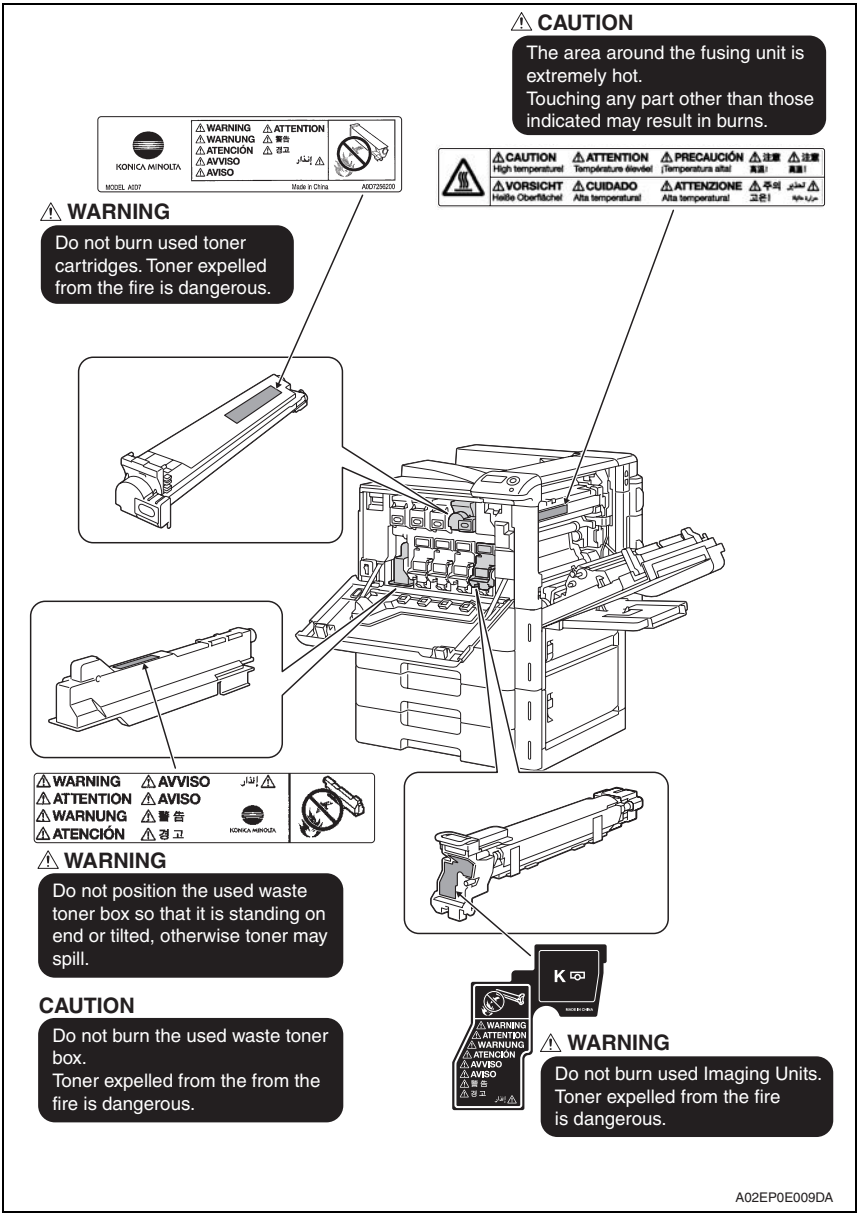


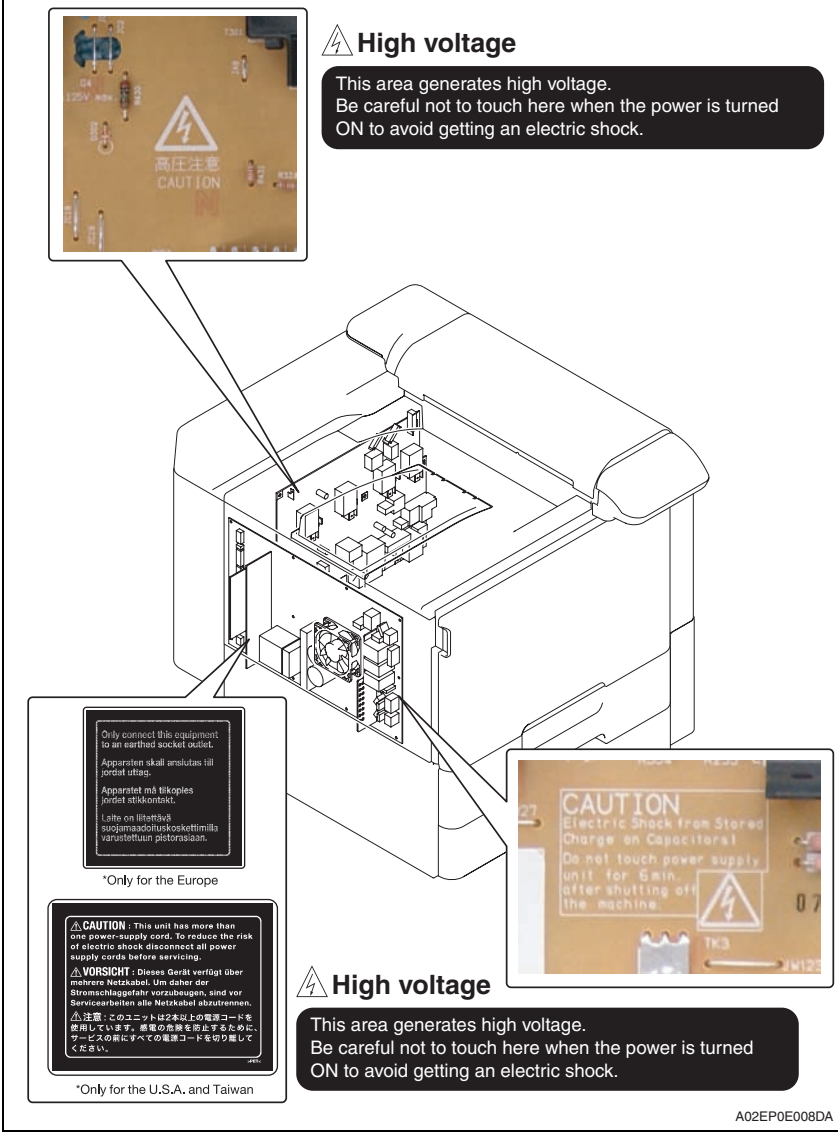
5.4 PRECAUTIONS FOR HANDLING THE LASER EQUIPMENT

- 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.





⚠ 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)	magicolor 8650	Main body
(2)	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
	Microsoft Windows Vista:	Windows Vista
	When the description is made in combination of the OS's mentioned above:	
		Windows 98/Me
		Windows NT 4.0/2000
		Windows NT/2000/XP/Vista
		Windows 98/Me/ NT/2000/XP/Vista

B. Brand name

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

C. Feeding direction

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

<Sample notation>

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

KONICA MINOLTA

SERVICE MANUAL

FIELD SERVICE

magicolor 8650
Main body

2007.11

KONICA MINOLTA BUSINESS TECHNOLOGIES, INC. Ver. 2.0

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 △1 to the left of the revised section.
  A number within △1 represents the number of times the revision has been made.

- To indicate clearly a section revised, show ▲1 in the lower outside section of the corresponding page.
  A number within ▲1 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
2008/10	2.02	▲	Error corrections of the description for the low power/sleep mode setting.
2008/04	2.01	▲	Error corrections of the toner cartridge life value
2007/11	2.0	△1	Description addition of function enhancement 1, error corrections
2007/10	1.0	—	Issue of the first edition

CONTENTS

magicolor 8650 Main body

General

1. System configuration 1
2. Product specifications 3

Maintenance

3. Periodical check 9
3.1 Maintenance items 9
3.1.1 Main body 9
3.1.2 PC-106/205/406 11
3.1.3 FS-519 11
3.1.4 FS-609 11
3.2 Maintenance parts 12
3.2.1 Replacement parts 12
3.2.2 Cleaning parts 13
3.3 Concept of parts life 14
3.3.1 Life value of consumables and parts 14
3.3.2 Conditions for life specifications values 15
3.3.3 Control causing inhibited printing for one part when an inhibited-printing event occurs in another part 15
3.4 Maintenance procedure (periodical check parts) 16
3.4.1 Cleaning of the electrostatic charger wire 16
3.4.2 Cleaning of the timing roller 16
3.4.3 Cleaning of the area around the waste toner collecting port 17
3.4.4 Cleaning of the duplex transport rollers 17
3.4.5 Replacing the paper feed tray 2 feed roller/paper feed tray 2 pick-up roller 18
3.4.6 Replacing the paper feed tray 2 separation roller assy 21
3.4.7 Replacing the paper feed tray 3 feed roller/paper feed tray 3 pick-up roller 22
3.4.8 Replacing the paper feed tray 3 separation roller assy 25
3.4.9 Replacing the paper feed tray 1 feed roller 26
3.4.10 Replacing the paper feed tray 1 separation roller assy 28
3.4.11 Replacing the waste toner box 29
3.4.12 Replacing the transfer roller unit 30
3.4.13 Replacing the imaging unit 31
3.4.14 Replacing the ozone filter 35

3.4.15 Replacing the toner cartridge 35
3.4.16 Replacing the transfer belt unit 37
3.4.17 Cleaning of the image transfer entrance guide 39
3.4.18 Cleaning of the IDC/registration sensor/MK,YC 39
3.4.19 Replacing the fusing unit 40
4. Service tool 42
4.1 Service material list 42
4.2 CE tool list 43
4.3 Print materials 44
4.3.1 Imaging unit single parts (IU) 44
4.3.2 Toner cartridge single parts (T/C) 44
4.3.3 Waste toner box 44
4.3.4 Maintenance kit 44
5. Firmware upgrade 45
5.1 Outline 45
5.2 Preparations for firmware rewriting by Windows Command Prompt 45
5.2.1 Service environment 45
5.2.2 Writing into the compact flash 45
5.3 Firmware rewriting by compact flash 48
5.3.1 Updating method 48
5.3.2 Action when data transfer fails 50
5.4 Updating the firmware with the Internet ISW 51
5.4.1 Outline 51
5.4.2 Service environment 51
5.4.3 Preparations for firmware rewriting 51
5.4.4 Firmware update procedure 54
5.4.5 Error code list for the Internet ISW 56
5.5 Firmware update by customer 59
5.5.1 Outline 59
6. Other 61
6.1 Disassembly/adjustment prohibited items 61
6.2 Disassembly/assembly/cleaning list (other parts) 62
6.2.1 Disassembly/assembly parts list 62
6.2.2 Cleaning parts list 64
6.3 Disassembly/assembly procedure 65
6.3.1 Front door 65
6.3.2 Upper front cover 66
6.3.3 Right front cover/1 67

6.3.4 Right front cover/2 67
6.3.5 Left cover 69
6.3.6 Rear left cover 70
6.3.7 Exit cover 70
6.3.8 Rear right cover/1 71
6.3.9 Rear right cover/2 71
6.3.10 Paper feed tray 1 front cover, Paper feed tray 1 rear cover 72
6.3.11 Upper rear cover 72
6.3.12 Rear cover/1, Rear cover/2. 73
6.3.13 Lower rear cover/1, lower rear cover/2 73
6.3.14 Vertical transport door 73
6.3.15 Control panel assy 74
6.3.16 Output tray 74
6.3.17 Paper feed tray 2 75
6.3.18 Paper feed tray 3 75
6.3.19 Front cover 76
6.3.20 PH unit 78
6.3.21 Paper feed tray 1 unit 83
6.3.22 Main drive unit 84
6.3.23 Transport drive unit 86
6.3.24 Fusing drive unit 89
6.3.25 Hopper drive unit (C/K, Y/M) 91
6.3.26 Right door assy 92
6.3.27 PH relay board (PHREYB) 95
6.3.28 DC power supply (DCPU) 97
6.3.29 Printer control board (PRCB) 99
6.3.30 MFP board (MFPB) 101
6.3.31 PWB box 103
6.3.32 High voltage unit (HV) 105
6.3.33 Service EEPROM board (SV ERB) 106
6.3.34 SODIMM/1, SODIMM/2 108
6.3.35 JMP board (JMPB) 108
6.3.36 NVRAM board (NRB) 109
6.3.37 Paper feed tray 2 paper FD size detect board (PSDTB/1) 109
6.3.38 Paper feed tray 3 paper FD size detect board (PSDTB/2) 110
6.3.39 Transport motor (M1) 111
6.3.40 Color PC motor (M2) 111

6.3.41 Fusing motor (M5) ... 112
6.3.42 Switchback motor (M6) ... 113
6.3.43 Duplex transport motor (M7) ... 114
6.3.44 Fusing retraction motor (M12) ... 115
6.3.45 Paper feed tray 2 lift-up motor (M8) ... 116
6.3.46 Paper feed tray 3 lift-up motor (M9) ... 117
6.3.47 Toner supply motor/CK (M3) ... 119
6.3.48 Toner supply motor/YM (M4) ... 119
6.3.49 Paper feed tray 1 paper feed clutch (CL1) ... 120
6.3.50 Paper feed tray 3 vertical transport clutch (CL3) ... 121
6.3.51 Paper feed tray 3 paper feed clutch (CL2) ... 122
6.3.52 Paper feed tray 1 feed clutch (CL4) ... 122
6.3.53 Transfer belt retraction clutch (CL7) ... 123
6.3.54 Developing clutch/K (CL5) ... 123
6.3.55 Tim. roller clutch (CL6) ... 124
6.3.56 IDC registration sensor/MK (IDCS/MK), IDC registration sensor/YC (IDCS/YC) ... 125
6.4 Cleaning procedure ... 127
6.4.1 Transfer belt unit ... 127
6.4.2 PH window Y,M,C,K ... 127
6.4.3 Paper feed tray 2 feed roller, paper feed tray 2 pick-up roller, paper feed tray 1 separation roller ... 128
6.4.4 Paper feed tray 3 feed roller, paper feed tray 3 pick-up roller, paper feed tray 3 separation roller ... 129
6.4.5 Paper feed tray 3 transport roller ... 130
6.4.6 Paper feed tray 1 feed roller ... 130
6.4.7 Paper feed tray 1 separation roller ... 130

Adjustment/Setting

7. How to use the adjustment section ... 131
8. Utility Mode ... 132
8.1 Control Panel ... 132
8.2 Utility Mode function tree ... 133
8.3 Utility Mode function setting procedure ... 140
8.3.1 Procedure ... 140
8.3.2 Cancelling the settings ... 140
8.3.3 Changing the settings on the setting menu ... 140
8.4 Meter Count ... 141
8.5 Settings in job operation ... 141

8.6 Settings in Paper Tray 143
8.7 User setting function setting procedure 145
8.7.1 Print Reports 145
8.7.2 Consumables 148
8.7.3 System Settings 148
8.7.4 Printer Settings 151
8.8 System settings function setting procedure 157
8.8.1 System Settings 157
8.8.2 Network Settings 158
8.8.3 Printer Settings 177
8.8.4 System Connection 177
8.9 Admin. Settings 179
8.9.1 Security Settings 179
8.9.2 User Box Settings 187
8.9.3 Auth Device Setting 188
8.9.4 Expert Adjustment 189
8.9.5 Option Settings 197
8.9.6 Firmware Update 198
8.10 Banner Printing 198
9. Adjustment item list 200
10. Service Mode 202
10.1 Service Mode function setting procedure 202
10.1.1 Procedure 202
10.1.2 Exiting 203
10.1.3 Changing the setting value in Service Mode functions 203
10.2 Service Mode function tree 204
10.3 System Settings 209
10.3.1 Destination 209
10.3.2 Enter Serial No. 209
10.3.3 Initialize 210
10.3.4 Foolscap Size 210
10.3.5 Don't go to Sleep 210
10.3.6 Image Controller 211
10.3.7 Unit Replacement 211
10.3.8 LCT Size Setting 212
10.3.9 Data Capture 212
10.3.10 Software SW Setting 214
10.3.11 Enter Setup Date 215

10.3.12 Comm. System 215
10.3.13 Option Setting 215
10.3.14 Maintenance Ctr 216
10.3.15 IU Yield Setting 216
10.3.16 Change Warmup Time 217
10.3.17 Status LED Setting 217
10.3.18 Toner Near Empty 218
10.3.19 Auth. Device Setting 218
10.3.20 Inferior Cut 218
10.4 Clear Counter 219
10.4.1 Yield Counter 219
10.4.2 JAM 219
10.4.3 Counter Service Called 219
10.4.4 Warning 219
10.4.5 Counter for Mode 219
10.4.6 Time Series Ser Call 220
10.4.7 Time series JAM 220
10.5 List Output 221
10.5.1 Management List 221
10.5.2 Adjustment List 221
10.6 Machine Status 222
10.7 Test Mode 223
10.7.1 Procedure for test pattern output 223
10.7.2 Running Mode 223
10.7.3 Gradation Pattern 223
10.7.4 Halftone Pattern 224
10.8 Machine Adjustment 225
10.8.1 Fusing Temperature 225
10.8.2 Fusing Speed 226
10.8.3 Printer Area 227
10.8.4 Printer Resist Loop 232
10.8.5 Color Registration Adjustment 233
10.8.6 LD adjustment 234
10.8.7 1st Tray Adjust 235
10.8.8 Exhaust Fan Delay 235
10.9 Process Adjustment 236
10.9.1 Dmax Density 236
10.9.2 TCR Level Setting 236

10.9.3 Background Margin 237
10.9.4 Transfer Output Adj 237
10.9.5 Stabilization 238
10.9.6 Density Adjustment 239
10.9.7 Replenish Toner 239
10.9.8 Bias Choice 239
10.10 Finisher Adjust 240
10.10.1 CB-FN Adjust 240
10.10.2 FN-X3 Adjust 240
10.10.3 Punch Option 240
10.11 Internet ISW 241
10.11.1 Internet ISW Set 241
10.11.2 HTTP Settings 241
10.11.3 FTP Settings 242
10.11.4 Forward Access Set 243
10.11.5 Download 244
10.12 Settings in the Enhanced Security 245
10.12.1 Admin. Password 245
10.12.2 Service Password 245
10.12.3 Data Backup 245
10.12.4 Admin. Auth Lock REL 246
10.12.5 Release time 246
10.13 CS Remote Care 247
10.13.1 Outlines 247
10.13.2 Setting up the CS Remote Care 247
10.13.3 Software SW setting for CS Remote Care 250
10.13.4 Setup confirmation 255
10.13.5 Calling the maintenance 255
10.13.6 Calling the center from the administrator 255
10.13.7 Checking the transmission log 255
10.13.8 Detail on settings 256
10.13.9 List of the CS Remote Care error code 262
10.13.10 Troubleshooting for CS Remote Care 266
11. Procedure for resetting 267
11.1 Trouble resetting 267
11.2 Contents to be cleared by reset function 267
12. Mechanical adjustment 268
12.1 Mechanical adjustment of the paper feed section 268

12.1.1 Skew adjustment of the tray 2, 3 ... 268
12.1.2 Centering adjustment of the tray 2, 3 ... 269
12.1.3 Adjustment of the tray 1 paper size unit ... 270
12.2 PH unit mechanical adjustment ... 271
12.2.1 Skew adjustment ... 271

Troubleshooting

13. Jam display ... 273
13.1 Misfeed display ... 273
13.1.1 Misfeed display resetting procedure ... 274
13.2 Sensor layout ... 275
13.3 Solution ... 276
13.3.1 Initial check items ... 276
13.3.2 Solution when paper curl occurs ... 276
13.3.3 Misfeed at tray 2 feed section ... 277
13.3.4 Misfeed at tray 3 feed section ... 278
13.3.5 Misfeed at tray 1 feed section ... 279
13.3.6 Misfeed at duplex pre-registration section ... 280
13.3.7 Misfeed at tray 3 vertical transport section ... 281
13.3.8 Misfeed at 2nd image transfer section ... 282
13.3.9 Misfeed at exit section ... 283
13.3.10 Misfeed at duplex transport section ... 284
13.3.11 Controller jam ... 285
14. Malfunction code ... 286
14.1 Alert code ... 286
14.1.1 Alert code list ... 286
14.2 Solution ... 288
14.2.1 P-5: IDC sensor (front) failure ... 288
14.2.2 P-28 IDC sensor (rear) failure ... 288
14.2.3 P-6: Cyan imaging unit failure ... 288
14.2.4 P-7: Magenta imaging unit failure ... 288
14.2.5 P-8: Yellow imaging unit failure ... 288
14.2.6 P-9: Black imaging unit failure ... 288
14.2.7 P-21: Color regist test pattern failure ... 289
14.2.8 P-22: Color regist adjust failure ... 289
14.2.9 P-27: Secondary transfer ATVC failure ... 289
14.2.10 P-30: Color PC drive sensor malfunction ... 290
14.2.11 P-31: Black PC drive sensor malfunction ... 290

14.3 Trouble code 291
14.3.1 Trouble code list 291
14.4 How to reset 313
14.5 Solution 314
14.5.1 C0202: Tray 2 feeder up/down abnormality 314
14.5.2 C0204: Tray 3 feeder up/down abnormality 314
14.5.3 C0211: Tray 1 feeder up/down abnormality 315
14.5.4 C0301: Suction fan motor's failure to turn 315
14.5.5 C2151: Secondary transfer roller pressure welding alienation 316
14.5.6 C2152: Transfer belt pressure welding alienation 316
14.5.7 C2164: PC charge malfunction 317
14.5.8 C2253: Color PC motor's failure to turn 317
14.5.9 C2254: Color PC motor's turning at abnormal timing 317
14.5.10 C225D: Color dev. unit engagement/disengagement failure 318
14.5.11 C2351: K toner suction fan motor's failure to turn 318
14.5.12 C2451: Release new transfer belt unit 319
14.5.13 C2551: Abnormally low toner density detected cyan TCR sensor 319
14.5.14 C2553: Abnormally low toner density detected magenta TCR sensor 319
14.5.15 C2555: Abnormally low toner density detected yellow TCR sensor 319
14.5.16 C2552: Abnormally high toner density detected cyan TCR sensor 320
14.5.17 C2554: Abnormally high toner density detected magenta TCR sensor 320
14.5.18 C2556: Abnormally high toner density detected yellow TCR sensor 320
14.5.19 C2557: Abnormally low toner density detected black TCR sensor 320
14.5.20 C2558: Abnormally high toner density detected black TCR sensor 321
14.5.21 C2559: Cyan TCR sensor adjustment failure 321
14.5.22 C255A: Magenta TCR sensor adjustment failure 321
14.5.23 C255B: Yellow TCR sensor adjustment failure 321
14.5.24 C255C: Black TCR sensor adjustment failure 321
14.5.25 C2650: Main backup media access error 322
14.5.26 C2651: EEPROM access error (IU C) 323
14.5.27 C2652: EEPROM access error (IU M) 323
14.5.28 C2653: EEPROM access error (IU Y) 323
14.5.29 C2654: EEPROM access error (IU K) 323
14.5.30 C2A01: EEPROM access error (TC C) 323
14.5.31 C2A02: EEPROM access error (TC M) 323
14.5.32 C2A03: EEPROM access error (TC Y) 323
14.5.33 C2A04: EEPROM access error (TC K) 323
14.5.34 C3101: Fusing roller separation failure 324

14.5.35 C3201: Fusing motor failure to turn 324
14.5.36 C3202: Fusing motor turning at abnormal timing 324
14.5.37 C3301: Fusing cooling fan motor/ 1 failure to turn 325
14.5.38 C3302: Fusing cooling fan motor/ 2,3 failure to turn 325
14.5.39 C3421: Fusing heaters trouble (heating side) 326
14.5.40 C3423: Fusing heaters trouble (pressurizing side) 326
14.5.41 C3461: Release new fusing unit 326
14.5.42 C3721: Fusing abnormally high temperature detection (heating side) 327
14.5.43 C3723: Fusing abnormally high temperature detection (pressurizing side) 327
14.5.44 C3821: Fusing abnormally low temperature detection (heating side) 327
14.5.45 C3823: Fusing abnormally low temperature detection (pressurizing side) 327
14.5.46 C4151: Polygon motor rotation trouble (C) 328
14.5.47 C4152: Polygon motor rotation trouble (M) 328
14.5.48 C4153: Polygon motor rotation trouble (Y) 328
14.5.49 C4154: Polygon motor rotation trouble (K) 328
14.5.50 C4551: Laser malfunction (C) 328
14.5.51 C4552: Laser malfunction (M) 328
14.5.52 C4553: Laser malfunction (Y) 328
14.5.53 C4554: Laser malfunction (K) 328
14.5.54 C5102: Transport motor's failure to turn 329
14.5.55 C5103: Transport motor's turning at abnormal timing 329
14.5.56 C5351: Power supply cooling fan motor's failure to turn 329
14.5.57 C5353: Cooling fan motor/2's failure to turn 330
14.5.58 C5354: Exhaust fan motor's failure to turn 330
14.5.59 C5357: Cooling fan motor/1's failure to turn 331
14.5.60 C5371: MFP board cooling fan motor's failure to turn 331
14.5.61 CA051: Standard controller configuration failure 332
14.5.62 CA052: Controller hardware error 332
14.5.63 CA053: Controller start failure 332
14.5.64 CC151: ROM contents error upon startup (MSC) 332
14.5.65 CC153: ROM contents error upon startup (PRT) 332
14.5.66 CC163: ROM contents error (PRT) 333
14.5.67 CC164: ROM contents error (MSC) 334
14.5.68 CD002: JOB RAM save error 334
14.5.69 CD004: Hard disk access error 335
14.5.70 CD005: Hard disk error 1 335
14.5.71 CD006: Hard disk error 2 335

14.5.72 CD007: Hard disk error 3 335
14.5.73 CD008: Hard disk error 4 335
14.5.74 CD009: Hard disk error 5 335
14.5.75 CD00A: Hard disk error 6 335
14.5.76 CD00B: Hard disk error 7 335
14.5.77 CD00C: Hard disk error 8 335
14.5.78 CD00D: Hard disk error 9 335
14.5.79 CD00E: Hard disk error A 335
14.5.80 CD00F: Hard disk data transfer error 335
14.5.81 CD020: Hard disk verify error 335
14.5.82 CD010: Hard disk unformat 335
14.5.83 CD011: Hard disk out of specifications mounted 336
14.5.84 CD201: File memory mounting error 336
14.5.85 CD202: Memory capacity discrepancy 336
14.5.86 CD203: Memory capacity discrepancy 2 336
14.5.87 CD211: PCI-SDRAM DMA operation failure 336
14.5.88 CD212: Compression/extraction timeout detection 336
14.5.89 CD241: Encryption board setting error 337
14.5.90 CD242: Encryption board mounting error 337
14.5.91 CD261: USB host board failure 337
14.5.92 CD3##: NVRAM data error 338
14.5.93 CD401: NACK command incorrect 338
14.5.94 CD402: ACK command incorrect 338
14.5.95 CD403: Checksum error 338
14.5.96 CD404: Receiving packet incorrect 338
14.5.97 CD405: Receiving packet analysis error 338
14.5.98 CD406: ACK receiving timeout 338
14.5.99 CD407: Retransmission timeout 338
14.5.100 CE001: Abnormal message queue 339
14.5.101 CE003: Task error 339
14.5.102 CE004: Event error 339
14.5.103 CE005: Memory access error 339
14.5.104 CE006: Header access error 339
14.5.105 CE007: DIMM initialize error 339
14.5.106 CE002: Message and method parameter failure 339
14.5.107 CEEE1: MSC undefined malfunction occurring 340
14.5.108 CEEE3: Engine section undefined malfunction 340

15. Power supply trouble 341
15.1 Machine is not energized at all (DCPU operation check) 341
15.2 Control panel indicators do not light. 341
15.3 Fusing heaters do not operate 342
15.4 Power is not supplied to option 342
15.4.1 PC-106/205/406 342
15.4.2 FS-519/FS-609 342
16. Image quality problem 343
16.1 How to read element date 343
16.1.1 Table No. 343
16.1.2 Level history1 343
16.1.3 Level history2 343
16.2 How to identify problematic part 344
16.2.1 Initial check items 344
16.3 Solution 346
16.3.1 Printer monocolor: white lines in sub scan direction, white bands in sub scan direction, colored lines colored bands in sub scan direction 346
16.3.2 Printer 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 347
16.3.3 Printer monocolor: uneven density in sub scan direction 348
16.3.4 Printer monocolor: uneven density in main scan direction 349
16.3.5 Printer monocolor: low image density 350
16.3.6 Printer monocolor: gradation reproduction failure 352
16.3.7 Printer monocolor: foggy background 353
16.3.8 Printer monocolor: void areas, white spots 355
16.3.9 Printer monocolor: colored spots 356
16.3.10 Printer monocolor: blurred image 357
16.3.11 Printer monocolor: blank print, black print 358
16.3.12 Printer monocolor: uneven image 359
16.3.13 Printer 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 360
16.3.14 Printer 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 361
16.3.15 Printer 4-color: uneven density in sub scan direction 362
16.3.16 Printer 4-color: uneven density in main scan direction 363
16.3.17 Printer 4-color: low image density 364
16.3.18 Printer 4-color: poor color reproduction 365

16.3.19 Printer 4-color: incorrect color image registration 366
16.3.20 Printer 4-color: void areas, white spots 367
16.3.21 Printer 4-color: colored spots 368
16.3.22 Printer 4-color: poor fusing performance, offset 369
16.3.23 Printer 4-color: brush effect, blurred image 370
16.3.24 Printer 4-color: back marking 371
16.3.25 Printer 4-color: uneven image 372
17. Controller trouble 373
17.1 Unable to print over the network 373
17.1.1 The “RIP” is displayed on the machine control panel. 373
17.1.2 The “RIP” is not displayed on the machine control panel. 373

Appendix

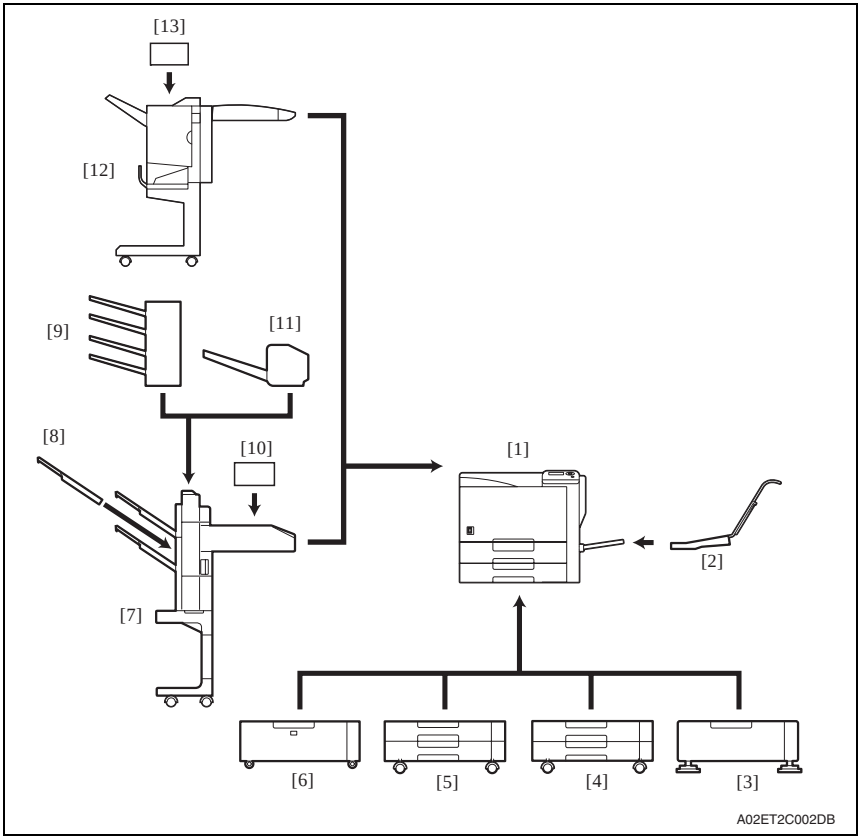
18. Parts layout drawing 375
18.1 Main body 375
18.1.1 Engine section 375
18.1.2 Tray 1, Tray 2 379
18.1.3 Tray 3 380
18.2 PC-106/205 (option) 381
18.3 PC-406 (option) 382
18.4 FS-519 (option) 383
18.5 PK-515 (option) 386
18.6 MT-502 (option) 387
18.7 SD-505 (option) 388
18.8 FS-609 (option) 389
18.9 PK-501 (option) 392
19. Connector layout drawing 393
20. Timing chart 396
20.1 Main body 396

Blank Page

General

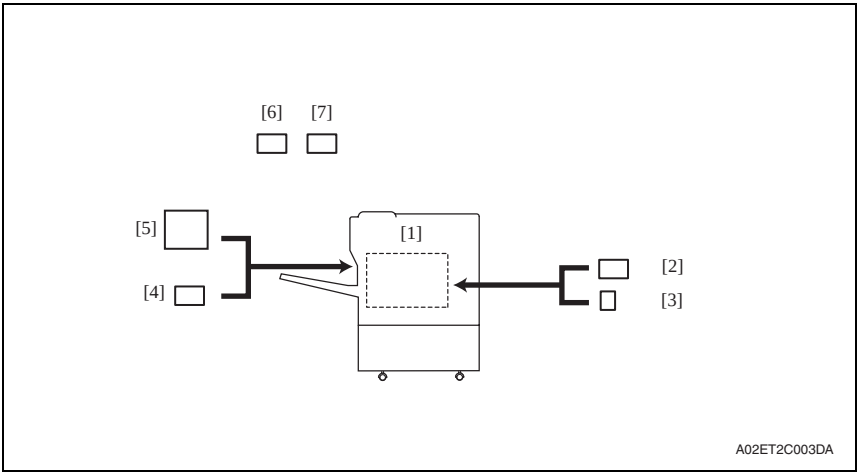
1. System configuration

1/2 System front view



[1]	Main body		[8]	Output tray	OT-602
[2]	Mount kit	MK-713	[9]	Mailbin kit	MT-502
[3]	Desk	DK-505	[10]	Punch kit	PK-515
[4]	Paper feed cabinet	PC-106	[11]	Saddle stitcher	SD-505
[5]	Paper feed cabinet	PC-205	[12]	Finisher	FS-609
[6]	Paper feed cabinet	PC-406	[13]	Punch kit	PK-501
[7]	Finisher	FS-519			

2/2 System rear view



[1]	Main body		[5]	Mount kit	MK-711
[2]	Hard disk	HD-508	[6]	Authentication unit (biometric type)	AU-101
[3]	Security kit	SC-503	[7]	Authentication unit (IC card type)	AU-201
[4]	Local interface kit	EK-603			

2. Product specifications

A. Type

Type	Desktop/console *1 printer
Printing process	Laser electrostatic printing system
PC drum type	OPC drum: KM-12 (OPC with high mold releasability)
Paper feeding separation system	Tray 1 : Small roller separation system with torque limiter Tray 2 : Roller separation system with pick-up mechanism Tray 3 : Roller separation system with pick-up mechanism Tray 4 : Roller separation system with pick-up mechanism Tray 5 : Roller separation system with pick-up mechanism
Exposure system	• Four-multi array PH unit system • Polygon mirror scan system
Exposure density	Equivalent to 1800 dpi in main scanning direction × 600 dpi in sub scanning direction
Developing system	Dry 2 components developing method, HMT developing system
Charging system	DC comb electrode scorotron system with electrode cleaning function (manual)
Neutralizing system	Red LED system
Image transfer system	Belt image transfer system (1st)/roller image transfer system (2nd)
Paper separating system	Combination of curvature, separating claws, and bias system
Fusing system	Belt fusing
Heating system	Halogen lamp

*1: Only when the optional paper feed cabinet/desk is installed.

B. Functions

Warm-up time (at ambient temperature of 23° C/73.4° F and rated source voltage)		75 sec. or less (Monochrome print, Color print)	
Image loss		Leading edge: 4.2 mm (3/16 inch), Trailing edge: 3 mm (1/8 inch), Rear edge: 3 mm (1/8 inch), Front edge: 3 mm (1/8 inch)	
First print time		(Tray2/3 A4 or 8 1/2 x 11/Letter, full size)	
		5.9 sec. or less (Monochrome print) 8.5 sec. or less (Color print)	
Processing speed	Plain paper (monochrome, full color), OHP film *2	166.6 mm/s	
	Thick 1, Thick 2, Thick 3, Thick 4, Post card, Envelope, Label sheet	55.5 mm/s	
Printing speed for continuous-print cycle (A4 or 8 1/2 x 11/Letter, plain paper)	Monochrome, Full color	1-sided: 35 prints/min, 2-sided: 35 prints/min	
Paper size	Tray 2	Metric area	A3 to B5/B5S, A5S, 16K, 8K
		Inch area	11 x 17 to Letter/LetterS, StatementS, 8 x 13
	Tray 3	Metric area	A3 to B5/B5S, A5S, A3 wide, 16K, 8K
		Inch area	12 x 18 to Letter/LetterS, StatementS, 8 x 13
	Tray 1	Metric area	A3 to B6S, A6S, A3 wide, banner paper, 16K/16KS, 8K
		Inch area	12 x 18 to Statement/StatementS, 4 x 6S, 8 x 13
Print output capacity	Plain paper	250 sheets	
	Thick paper	10 sheets	
	OHP film	1 sheet	

C. Paper

Type		Paper source (maximum tray capacity)		
		Tray 2	Tray 3	Tray 1
Print paper type	Plain paper (60 to 90 g/m² / 16 to 24 lb)	❍ (500 sheets)	❍ (500 sheets)	❍ (150 sheets)
	Translucent paper	—	—	—
	OHP film (crosswise feeding only) *2	—	—	❍ (20 sheets)
	Thick paper 1 (91 to 150 g/m² / 24.25 to 40 lb)	150 sheets	150 sheets	
	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			
	Thick paper 4 (256 to 271 g/m² / 68 lb to 72 lb) *1	—	—	
	Postcards	—	—	
	Envelopes	—	—	❍ (10 sheets)
	Labels	—	—	❍ (20 sheets)
	Long size paper (127 to 210 g/m² / 33.75 to 55.75 lb)	—	—	❍ (10 sheets)
Print paper dimensions	Width	139.7 to 297 mm 5 1/2 to 11 3/4 inch	139.7 to 311.1 mm 5 1/2 to 12 1/4 inch	90 to 311.1 mm 3 1/2 to 12 1/4 inch
	Length	182 to 431.8 mm 7 1/4 to 17 inch	182 to 457.2 mm 7 1/4 to 18 inch	139.7 to 457.2 mm 5 1/2 to 18 inch
	Long size paper (Width x Length)	—	—	210 to 297 mm x 457.3 to 1200 mm or less 8 1/4 to 11 3/4 inch x 18 to 47 1/4 inch or less

*1: Image is not guaranteed when thick paper 3/4 is used.

*2: Monochrome print only.

Automatic duplex unit : Only the plain paper weighing 64 to 90 g/m² (17 to 24 lb) or thick paper weighing 91 to 256 g/m² (24.25 to 68 lb) are reliably fed.

D. Maintenance

No. of pages printed per month (average)	Color print	1,800 prints
	Monochrome print	7,400 prints
Standard print mode	Color print	4pages/job
	Monochrome print	4 pages/job
Standard original density	Color print	C, M, Y, K 5%
	Monochrome print	K 5%

E. Machine specifications

Power requirements	Voltage:	AC 100 V, 120 V, 127 V, 220-240 V	
	Current:	100 V	15 A
		110 V	15 A
		120 V	12 A
		127 V	12 A
		230 V	8 A
	Frequency:	50/60 Hz ± 3 Hz	
Max power consumption		1,500 W or less	
Dimensions		643 *1 (W) x 708 (H) x 637 mm (H) 25.25 *1 (W) x 27.75 (D) x 25 inch (H)	
Space requirements		991 (W) x 708 mm (D) 39 (W) x 27.75 inch (D) 2,104 (W) x 1,198 mm (D) *2 82.75 (W) x 47.25 inch (D) *2	
Weight	Machine	Approx. 79 kg / 174.25 lb (without IU and TC)	
	IU and TC	Approx. 6.8 kg / 15 lb	

*1: Width when the tray 1 is closed

*2: When the finisher is separated and the paper feed tray is slide out

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 10%/h)
Levelness	Difference between front and back, right and left should be 1 degree or under.

G. Print functions

Type	Built-in type controller	
Printer language	PCL5e/c emulation PCL XL Ver. 2.1 emulation PostScript 3 emulation (3016) XPS Ver. 1.0	
RAM	1024 MB	
Hard Disk	60 GB (Option)	
Host interface	Ethernet (10Base-T, 100Base-TX or 1,000Base-T) USB 2.0/1.1	
Network protocol	TCP/IP(IPv4/IPv6), BOOTP, ARP, ICMP, DHCP, AutoIP, SNMP, FTP, LPR/LPD, RAW Socket, SMB over TCP/IP, IPP, HTTP, POP, SMTP, LDAP, NTP, SSL, IPX/SPX, AppleTalk, Bonjour, NetBEUI, WSD, IPsec, DNS, DynamicDNS	
Network print service	Pserver (NDS) ... NetWare 4.x, 5.x, 6.x Pserver (Bindery) ... NetWare 4.x NDPS ... NetWare 5.x, 6.x SMB, RAW port printing IPP 1.1 LPD	
Driver	PCL6 printer driver	• Windows NT4.0 (SP6a or later) • Windows 2000 Professional (SP3 or later) • Windows XP Home Edition/Professional • Windows XP Professional x64 • Windows Vista Home Basic /Home Premium /Ultimate /Business /Enterprise, Windows Vista Home Basic/ Home Premium /Ultimate /Business /Enterprise x64 edition • Windows Server 2003, Windows Server 2003 x64
	PS3 printer driver	• Windows 2000 Professional (SP3 or later) • Windows XP Home Edition/Professional • Windows XP Professional x64, • Windows Vista Home Basic /Home Premium /Ultimate /Business /Enterprise, Windows Vista Home Basic/ Home Premium /Ultimate /Business /Enterprise x64 edition • Windows Server 2003, Windows Server 2003 x64
	PostScript PPD driver	• Macintosh OS 9.2 or later • Macintosh OS X 10.2.8/10.3/10.4
	XPS driver	• Windows Vista XPS mini driver
Utility	PageScope Web Connection	
Compatible paper size	Max. standard paper size A3 Wide (Long size paper: Width 210 mm to 297 mm x Length 457.3 mm to 1200 mm)	
Operating environmental requirements	10 to 30° C (50 to 86° F) 15 to 85 %	
Fonts	PCL	Latin 80 fonts
	PS	Latin 137 fonts

NOTE

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

Blank Page

Maintenance

3. Periodical check

3.1 Maintenance items

NOTE

- **To determine when the main body and option maintenance items need cleaning or replacing, use the machine management list to check the relevant life counter values.**

3.1.1 Main body

A. Parts to be replaced by users (CRU)

No	Class	Parts to be replaced	Cycle	Clean	Replace	Descriptions
1	Processing sections	Imaging unit Y,M,C	90,000		●	*1
2		Imaging unit K	120,000		●	*1
3		Toner cartridge Y,M,C	20,000		●	*1,3
4		Toner cartridge K	26,000		●	*1,3
5		Electrostatic charger wire	When toner cartridge K is replaced	●		
6	Image transfer section	Waste toner box	(50,000)		●	*1,2

*1: The parts can be replaced either by user or service engineer.
For details of setting, see [Unit Replacement] on “Adjustment/Setting.” See P.219
*2: A waste toner full condition is detected with detecting the actual waste toner emissions.
*3: Toner cartridges shipped with the product need replacing after 6,000 prints for Y, M, C and after 9,000 prints for K.

B. Periodical parts replacement/cleaning 1 (per 150,000-print)

No.	Class	Parts to be replaced	Qt.	Check	Clean	Replace	Lubrication	Descriptions
1	Overall	Paper feed and image conditions	—	●				
2		Appearance	—	●	●			
3	Image transfer section	Image transfer entrance guide	—		●			
4		IDC/registration sensor	—		●			
5		Transfer belt unit	1			●		
6		Transfer roller unit	1			●		
7	Processing sections	Ozone filter	1			●		

C. Periodical parts replacement/cleaning 2 (per 200,000-print)

No.	Class	Parts to be replaced	Qt.	Check	Clean	Replace	Lubrication	Descriptions
1	Overall	Paper feed and image conditions	—	●				
2		Appearance	—	●	●			
3	Paper feed tray 1	Feed roller	1			●		*1
4		Separation roller assy	1			●		

*1: Replace those parts at the same time.

D. Periodical parts replacement/cleaning 3 (per 300,000-print)

No.	Class	Parts to be replaced	Qt.	Check	Clean	Replace	Lubrication	Descriptions
1	Overall	Paper feed and image conditions	—	●				
2		Appearance	—	●	●			
3	Paper feed tray 2 Paper feed tray 3	Pick-up roller	1			●		*1
		Feed roller	1			●		
		Separation roller assy	1			●		

*1: Replace those parts at the same time.

E. Periodical parts replacement/cleaning 4 (per 400,000-print)

No.	Class	Parts to be replaced	Qt.	Check	Clean	Replace	Lubrication	Descriptions
1	Overall	Paper feed and image conditions	—	●				
2		Appearance	—	●	●			
3	Fusing section	Fusing unit	1			●		

3.1.2 PC-106/205/406

A. Periodical parts replacement/cleaning 1 (per 300,000-print)

No.	Class	Parts to be replaced	Qt.	Check	Clean	Replace	Lubrication	Descriptions
1	Overall	Paper feed and image conditions	—	●				
2		Appearance	—	●	●			
3	Paper feed section	Pick-up roller	1			●		*1
4		Feed roller	1			●		
5		Separation roller	1			●		

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

3.1.3 FS-519

A. Periodical parts replacement/cleaning 1 (per 300,000-print)

No.	Class	Parts to be replaced	Qt.	Check	Clean	Replace	Lubrication	Descriptions
1	Overall	Paper feed and image conditions	—	●				
2		Appearance	—	●	●			
3	Conveyance section	Paper feed roller, roll	—		●			
4		Paddle	—		●			

B. Periodical parts replacement/cleaning 2 (per 800,000-print)

No.	Class	Parts to be replaced	Qt.	Check	Clean	Replace	Lubrication	Descriptions
1	Overall	Paper feed and image conditions	—	●				
2		Appearance	—	●	●			
3	Conveyance section	Paddle	1			●		
4		Cleaning pad	1			●		
5		Worm gear	—		●		●	
6		Cover film	1			●		

⚠ 3.1.4 FS-609

A. Periodical parts replacement/cleaning 1 (per 300,000-print)

No.	Class	Parts to be replaced	Qt.	Check	Clean	Replace	Lubrication	Descriptions
1	Overall	Paper feed and image conditions	—	●				
2		Appearance	—	●	●			
3	Conveyance section	Paper transport roller, roll	—		●			

3.2 Maintenance parts

- To ensure that the machine produces good prints and to extend its service life, it is recommended that the maintenance jobs described in this schedule be carried out as instructed.
- To check when parts need replacing, operate the control panel as follows: [Service Mode] → [List Output] → [Management List].
- Maintenance conditions are based on the case of A4 or 8 $^{1}/_{2}$ x 11, standard mode and low power mode OFF.

	Color	B/W
*Standard mode	4 pages per job	4 pages per job

3.2.1 Replacement parts

A. Main body

No.	Classification	Parts name	Qt.	Actual durable cycle *1	Parts No.	Descriptions	Ref. page
1	Paper feed tray 2	Feed roller	1	300,000	A00J 5636 ##	*2	P.18
2		Separation roller assy	1	300,000	A02E F566 ##		P.21
3		Pick-up roller	1	300,000	A00J 5636 ##		P.18
4	Paper feed tray 3	Feed roller	1	300,000	A00J 5636 ##	*2	P.22
5		Separation roller assy	1	300,000	A02E F566 ##		P.25
6		Pick-up roller	1	300,000	A00J 5636 ##		P.22
7	Paper feed tray 1	Feed roller	1	200,000	A02E 5947 ##	*2	P.26
8		Separation roller assy	1	200,000	4034 0151 ##		P.28
9	Processing section	Imaging unit Y,M,C	1	90,000	—		P.31
10		Imaging unit K	1	120,000	—		
11		Ozone filter	1	150,000	A02E R735 ##	*3	P.35
12		Toner cartridge Y,M,C	1	20,000	—	*9	P.35
13		Toner cartridge K	1	26,000	—	*9	
14	Image transfer section	Transfer roller unit	1	150,000 *5	A02E R713 ##		P.30
15		Transfer belt unit	1	150,000	A02E R735 ##	*3	P.37
16		Waste toner box	1	(50,000)	A0DT 01A	*4, *7	P.29
					A0DT 0YA	*10	
17	Fusing section	Fusing unit	1	400,000	A02E R733 ##	*6	P.40
					A02E R720 ##	*7	
					A02E R721 ##	*8	

*1: Actual durable cycle is the life counter value.
*2: Replace those parts at the same time.
*3: The ozone filter is furnished with the transfer belt unit so that all of them are replaced at one time.
*4: A waste toner full condition is detected with detecting the actual waste toner emissions.
*5: Because there is no life-counter for the transfer roller unit, substitute it by the life-counter of the transfer belt unit.
*6: 110 V areas only.
*7: 120 V areas only.
*8: 220-240 V areas only.
*9: Toner cartridges shipped with the product need replacing after 6,000 prints for Y, M, C and after 9,000 prints for K.
*10: Areas other than 120 V areas

B. Option

No.	Classification	Parts name	Qt.	Actual durable cycle *1	Parts No.	Descriptions	Ref. Page
1	PC-106 PC-205 PC-406	Pick-up roller	1	300,000	A00J 5636 ##	*2	*3
2		Feed roller	1	300,000	A02E F566 ##		
3		Separation roller	1	300,000	A00J 5636 ##		
4	FS-519	Paddle	1	800,000	9J08 1605 ##		
			1		A01G 7203 ##		
5		Cleaning pad	1	800,000	A01G 7205 ##		
6		Cover film	1	800,000	A01G 8947 ##		

*1: Actual durable cycle is the life counter value.
*2: Replace those parts at the same time.
*3: See each option service manual.

3.2.2 Cleaning parts

No.	Classification	Parts name	Actual cleaning cycle	Descriptions	Ref.Page
1	Processing section	Electrostatic charger wire	When toner cartridge C/M/Y is replaced		P.16
2	Conveyance section	Timing roller	Upon each call (60,000)		P.16
3	Image transfer section	Area around the waste toner collecting port	Upon each call (60,000)		P.17
4		Image transfer entrance guide	When transfer belt unit is replaced (150,000)		P.39
5		IDC/registration sensor			P.39
6	Duplex section	Duplex transport roller	Upon each call (60,000)		P.17
7	FS-519	Paper feed roller, roll	300,000		*1
8		Paddle	300,000		
9		Worm gear	800,000		
⚠1 10	FS-609	Paper transport roller, roll	300,000		—

*1: See FS-519/PK-515/OT-602 service manual.

3.3 Concept of parts life

3.3.1 Life value of consumables and parts

- To check the life counter value of materials and parts, use the machine management list.
- Life specification value means an actual life terminated when prints are made under the conditions as defined in the next section, “Conditions for life specifications values.” The actual life may vary greatly depending on how the machine has been used and other factors.
See P.15

	Description	Life value (Specification value)	Max. life value
Waste toner box	The waste toner full sensor detects the amount of toner accumulated in the waste toner box and sends a signal that determines the end of the waste toner box life.	50,000 *1,2	–
Fusing unit	When the number of printed pages *6 reaches the set life value shown on the right, the end of unit life is detected.	400,000	470,000 *3
Transfer belt unit	Comparing the number of printed pages *6 with the number of printed pages calculated based on how long the transfer belt has run, the machine detects the end of unit life when either of them reaches the set value shown on the right. (However, to detect whether the unit reaches the max. life value, the machine uses only the number of printed pages calculated based on how long the transfer belt has run.)	150,000	180,000 *3
Imaging unit C,M,Y	Comparing the PC drum rotation time with the PC drum rotation time calculated based on the number of printed pages *6, the machine detects the end of unit life when either of them reaches the set value shown in the table below. * The PC drum rotation is calculated based on the distance the PC drum has run.	See the imaging unit life values in the table below.	
Imaging unit K			

<Imaging unit life value *4>

	Life value (Specification value)		Max. life value	
	Normal *5	Long *5	Normal *5	Long *5
Y,M,C	5,005 M	7,508 M	5,116 M	7,674 M
K	5,674 M	8,511 M	5,769 M	8,654 M

*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 box in order to reset.
*3: The initiation of any new print cycle is inhibited when reaching the max. life value.
*4: The mark “M” is indicated 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.
*5: “Normal” and “Long” are the settings provided in [Service Mode] → [System Settings] → [IU Yield Setting].

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

Paper length of sub scanning direction	Count value
Less than 216 mm	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

3.3.2 Conditions for life specifications values

Item		Description
Job type		Monochrome : Making 4 prints per job Color : Making 4 prints per job
Paper size		A4 or 8 $^{1}/_{2}$ x 11
PV/M		Black: 7,400 / Color: 1,800
Original density (Coverage)	Color	5 % for each color
	Monochrome	K 5 %
Low power mode		OFF
No. of operating days per month		20 days (power switch turned ON and OFF 20 times per month)

3.3.3 Control causing inhibited printing for one part when an inhibited-printing event occurs in another part

- In order to reduce the maintenance call times: when printing prohibiting is reached for any of the following parts, make printing prohibited also for other parts whose life value is reached, and replace those parts at the same time.

Target parts: Fusing unit, image transfer belt unit, imaging unit /C, imaging unit /M, imaging unit /Y, imaging unit /K

3.4 Maintenance procedure (periodical check parts)

NOTE

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

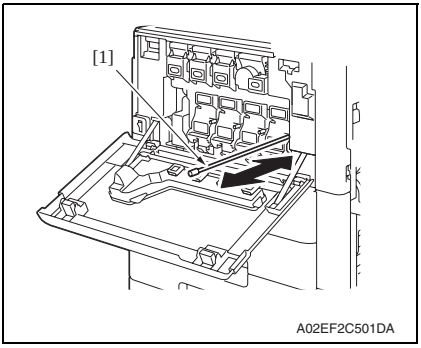
3.4.1 Cleaning of the electrostatic charger wire

A. Periodically cleaning parts/cycle

- Electrostatic charger wire: when toner cartridge K is replaced

B. Procedure

1. Open the front door.



2. Slowly pull out the charger-cleaning tool [1] as far as possible.
Next, slowly push in the charger cleaning tool as far as possible.
Repeat the above operations three times.

NOTE

- **Move the charger-cleaning tool slowly all the way to the end of either way.**

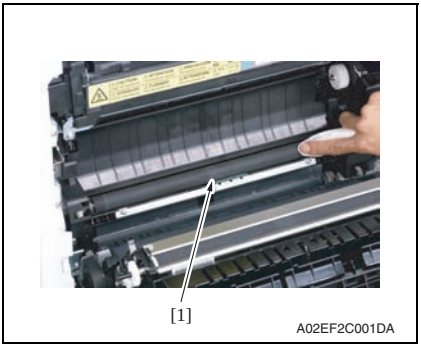
3.4.2 Cleaning of the timing roller

A. Periodically cleaning parts/cycle

- Timing roller: Every 60,000 prints (upon each call)

B. Procedure

1. Open the right door.



2. Using a cleaning pad with alcohol, wipe the timing roller [1] clean of dirt.

3.4.3 Cleaning of the area around the waste toner collecting port

A. Periodically cleaning parts/cycle

- Area around the waste toner collecting port: Every 60,000 prints (upon each call)

B. Procedure

1. Remove the waste toner box.
See P.29



A02EF2C295DA

2. Wipe the areas around the waste toner collecting port clean of spilled toner and dirt using a cleaning pad with water or alcohol.

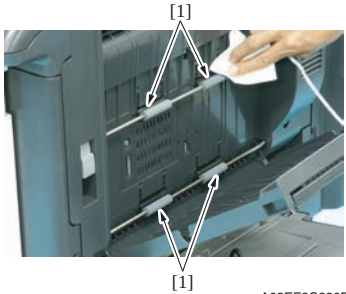
3.4.4 Cleaning of the duplex transport rollers

A. Periodically cleaning parts/cycle

- Duplex transport rollers: Every 60,000 prints (upon each call)

B. Procedure

1. Open the duplex door.



A02EF2C296DA

2. Using a cleaning pad with alcohol, wipe the transport rollers [1] clean of dirt.

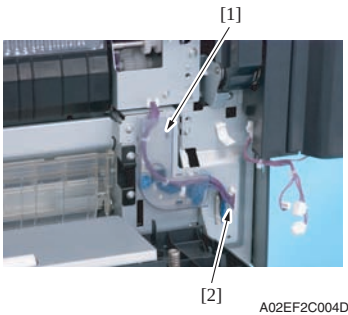
3.4.5 Replacing the paper feed tray 2 feed roller/paper feed tray 2 pick-up roller

A. Periodically replacing parts/cycle

- Paper feed tray 2 feed roller: Every 300,000 prints
- Paper feed tray 2 pick-up roller: Every 300,000 prints

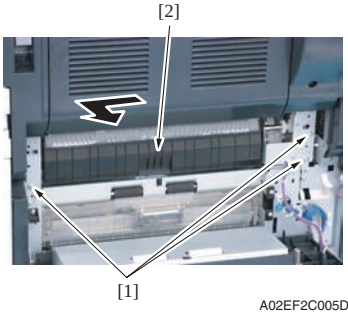
B. Procedure

1. Slide out the paper feed tray 2.
2. Remove the paper feed tray 1.
See P.83



A02EF2C004DA

3. Remove the harness cover [1], and disconnect the connector [2].

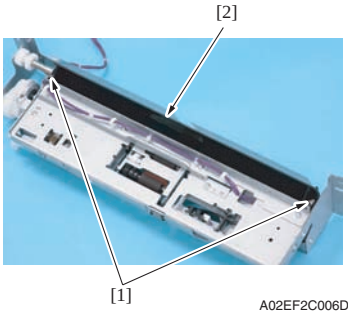


A02EF2C005DA

4. Remove three screws [1], and remove the paper feed tray 2 paper feed assy [2].

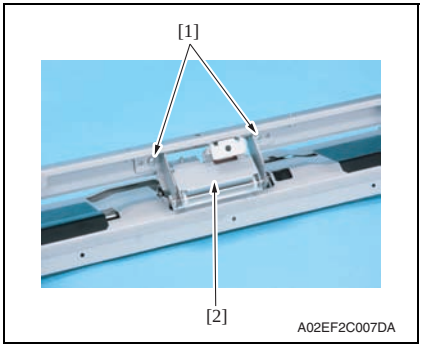
NOTE

- **The paper feed tray 2 paper feed assy is positioned by the shaft that passes through the back frame of the assy.**
  When removing the feed tray 2 paper feed assy, slide it in the direction of the arrow.

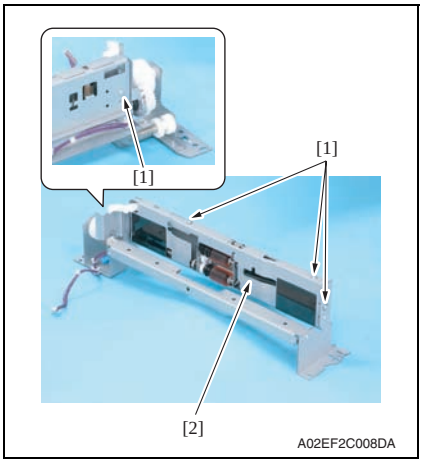


A02EF2C006DA

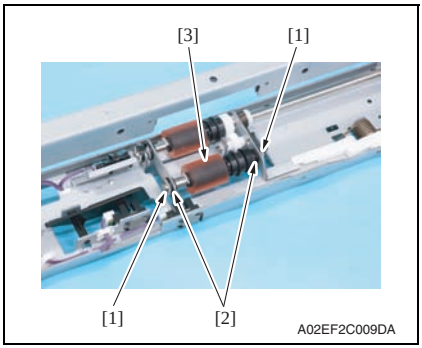
5. Remove two springs [1], and remove the cover [2].



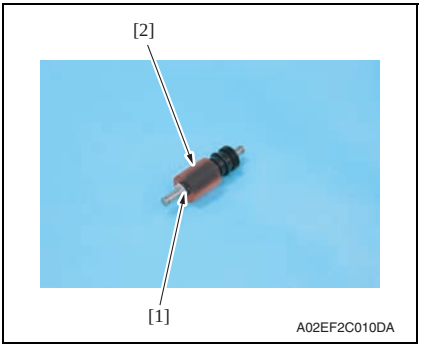
6. Remove two screws [1], and remove the paper feed tray 2 separation roller assy [2].



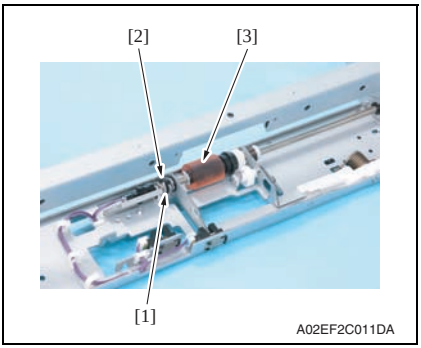
7. Remove four screws [1], and remove the paper feed tray 2 feed roller cover [2].



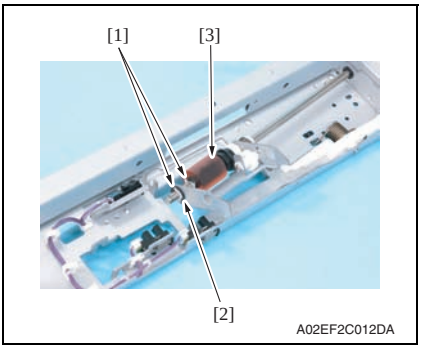
8. Remove two C-clips [1] and two bearings [2], and remove the paper feed tray 2 pick-up roller assy [3].



9. Remove the C-clip [1], and remove the paper feed tray 2 pick-up roller [2].



10. Remove the C-clip [1] and the bearing [2].
Slide the paper feed tray 2 feed roller assy [3].



11. Remove two C-clips [1] and the bearing [2], and remove the paper feed tray 2 feed roller [3].

12. To reinstall, reverse the order of removal.

13. Replace the paper feed tray 2 separation roller assy.
See P.21

14. After selecting [Service Mode] → [Clear Counter] → [Yield Counter] → [Tray 2] → [Start], press the Menu/Select key to clear the counter value.
See P.219

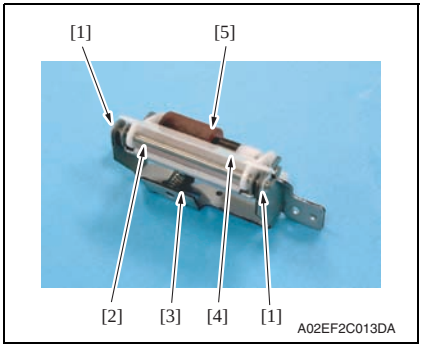
3.4.6 Replacing the paper feed tray 2 separation roller assy

A. Periodically replacing parts/cycle

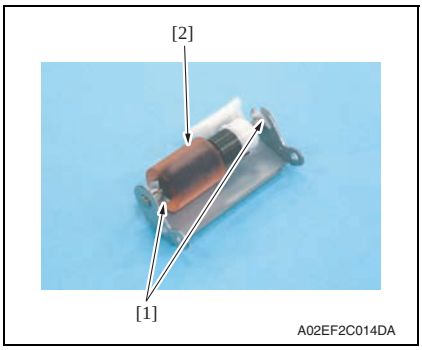
- Paper feed tray 2 separation roller assy: Every 300,000 prints

B. Procedure

1. Slide out the paper feed tray 2.
2. Remove the paper feed tray 1.
   See P.83
3. Remove the paper feed tray 2 separation roller assy.
   See the replacement procedures 1 to 6 in “paper feed tray 2 feed roller/paper feed tray 2 pick-up roller.”
   See P.18



4. Remove two C-clips [1], the shaft [2], spring [3], and guide [4].
   Remove the separation roller fixing plate assy [5].



5. Remove two C-clips [1], and remove the paper feed tray 2 separation roller assy [2].

6. To reinstall, reverse the order of removal.

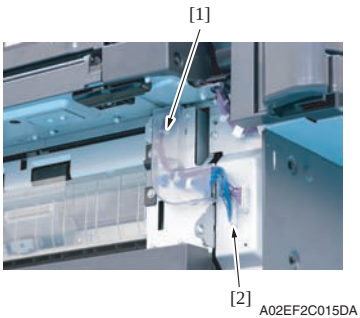
3.4.7 Replacing the paper feed tray 3 feed roller/paper feed tray 3 pick-up roller

A. Periodically replacing parts/cycle

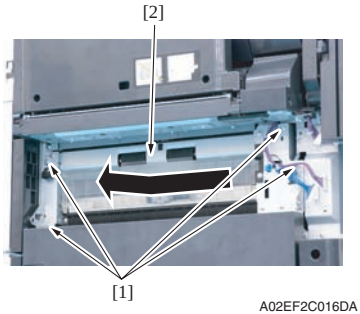
- Paper feed tray 3 feed roller: Every 300,000 prints
- Paper feed tray 3 pick-up roller: Every 300,000 prints

B. Procedure

1. Slide out the paper feed tray 3.
2. Remove the vertical transport door.
See P.73
3. Remove the rear right cover/2.
See P.71



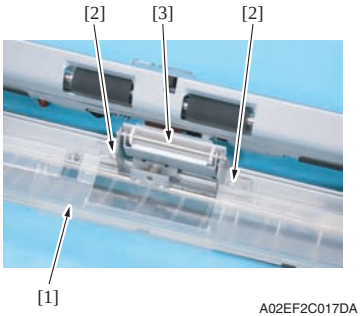
4. Remove the harness cover [1], and disconnect the connector [2].



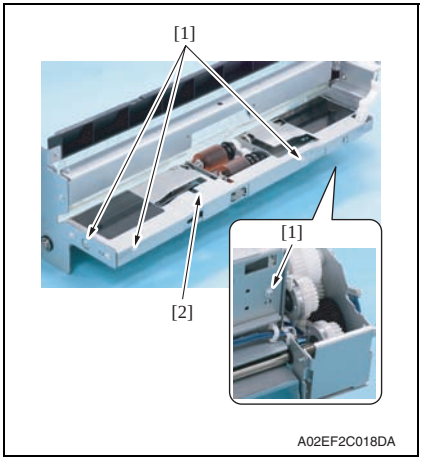
5. Remove four screws [1], and remove the paper feed tray 3 paper feed assy [2].

NOTE

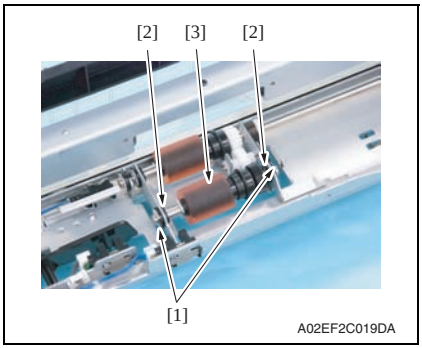
- **The paper feed tray 3 paper feed assy is positioned by the shaft that passes through the back frame of the assy. When removing the paper feed tray 3 feed assy, slide it in the direction of the arrow.**



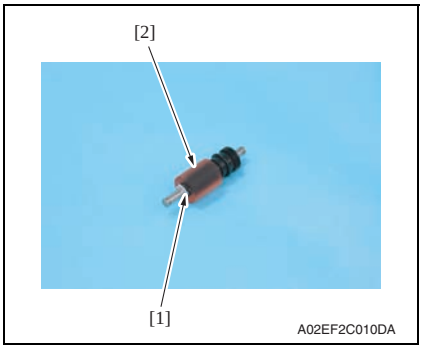
6. Lower the jam clearing cover [1], remove two screws [2], and remove the paper feed tray 3 separation roller assy [3].



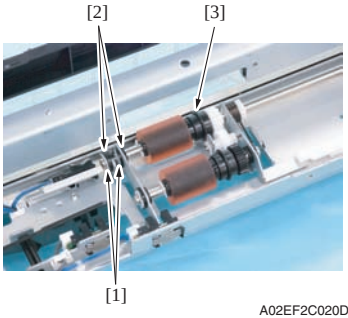
7. Remove four screws [1], and remove the paper feed tray 3 paper feed cover [2].



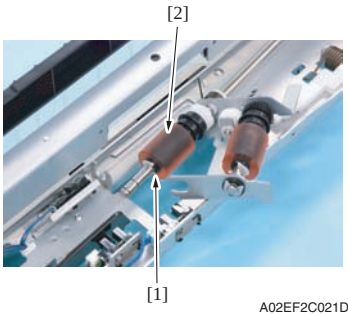
8. Remove two C-clips [1] and two bearings [2], and remove the paper feed tray 3 pick-up roller assy [3].



9. Remove the C-clip [1], and remove the paper feed tray 3 pick-up roller [2].



10. Remove two C-clips [1] and two bearings [2]. Slide the paper feed tray 3 feed roller [3] in the direction of the arrow.



11. Remove the C-clip [1], and remove the paper feed tray 3 feed roller [2].

12. To reinstall, reverse the order of removal.

13. Replace the paper feed tray 3 separation roller assy.
See P.25

14. After selecting [Service Mode] → [Clear Counter] → [Yield Counter] → [Tray 3] → [Start], press the Menu/Select key to clear the counter value.
See P.219

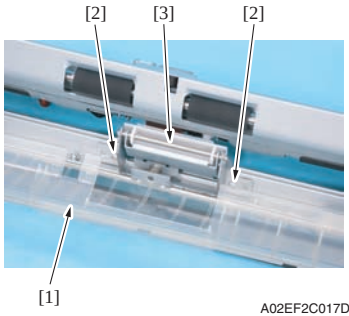
3.4.8 Replacing the paper feed tray 3 separation roller assy

A. Periodically replacing parts/cycle

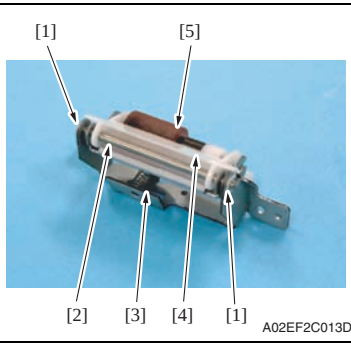
- Paper feed tray 3 separation roller assy: Every 300,000 prints

B. Procedure

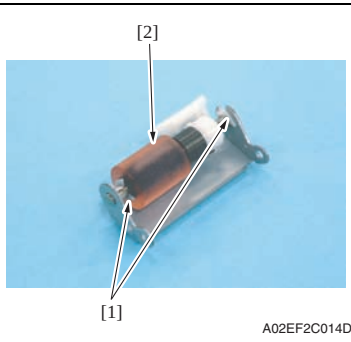
1. Slide out the paper feed tray 3.
2. Open the vertical transport door.



3. Opening the jam clearing cover [1], remove two screws [2], and remove the paper feed tray 3 separation roller assy [3].



4. Remove two C-clips [1], the shaft [2], spring [3], and cover [4].
   Remove the separation roller fixing plate assy [5].



5. Remove two C-clips [1], and remove the paper feed tray 3 separation roller assy [2].

6. To reinstall, reverse the order of removal.

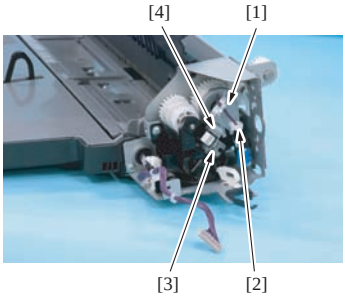
3.4.9 Replacing the paper feed tray 1 feed roller

A. Periodically replacing parts/cycle

- Paper feed tray 1 feed roller: Every 200,000 prints

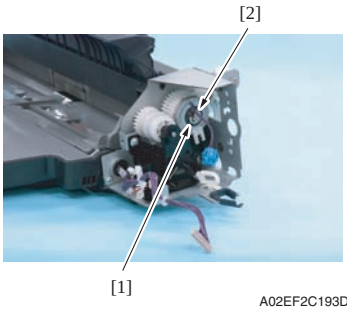
B. Procedure

1. Remove the paper feed tray 1 unit.
See P.83



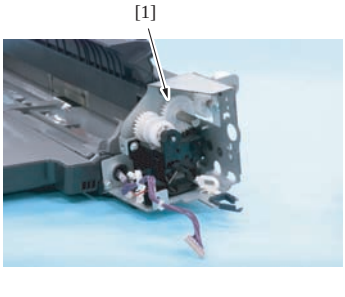
A02EF2C192DA

2. Remove the harness from the edge cover [1], and remove the wire saddle [2] and the screw [3].
3. Remove the metal plate [4].



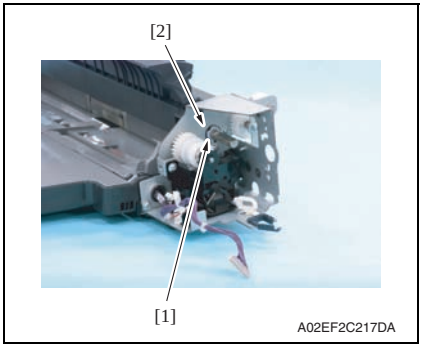
A02EF2C193DA

4. Remove the E-ring [1], and remove the paper feed tray 1 feed clutch [2].

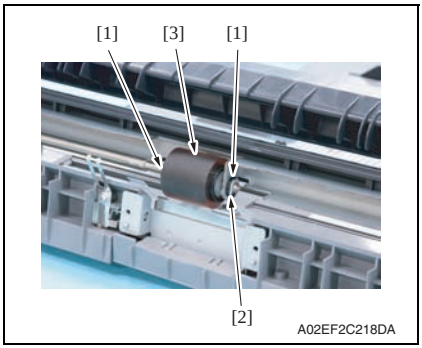


A02EF2C022DA

5. Remove the gear [1].



6. Remove the C-clip [1] and the bearing [2].



7. Remove two C-clips [1] and the bearing [2], and remove the paper feed tray 1 feed roller [3].

8. To reinstall, reverse the order of removal.

9. Replace the paper feed tray 1 separation roller assy.
See P.28

10. After selecting [Service Mode] → [Clear Counter] → [Yield Counter] → [Tray 1] → [Start], press the Menu/Select key to clear the counter value.
See P.219

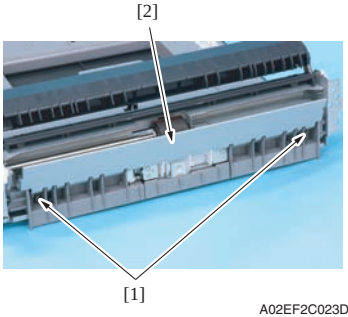
3.4.10 Replacing the paper feed tray 1 separation roller assy

A. Periodically replacing parts/cycle

- Paper feed tray 1 separation roller assy: Every 200,000 prints

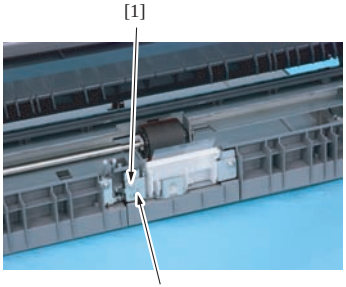
B. Procedure

1. Remove the paper feed tray 1 unit.
See P.83



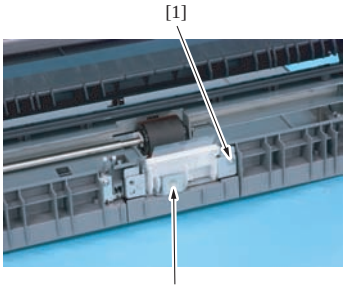
A02EF2C023DA

2. Remove two springs [1] and the guide plate [2].



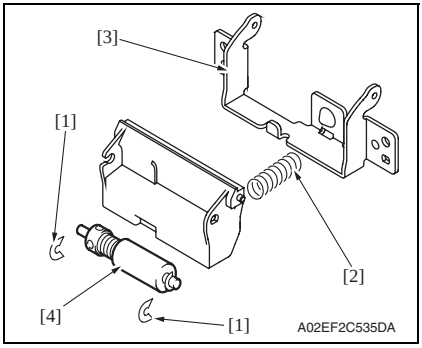
A02EF2C024DA

3. Remove the screw [1], and remove the ground terminal [2].



A02EF2C025DA

4. Remove the screw [1], and remove the paper feed tray 1 separation roller assy [2].



5. Snap off two C-clips [1], and remove the spring [2] and the guide plate [3]. Remove the paper feed tray 1 separation roller assy [4].

6. To reinstall, reverse the order of removal.

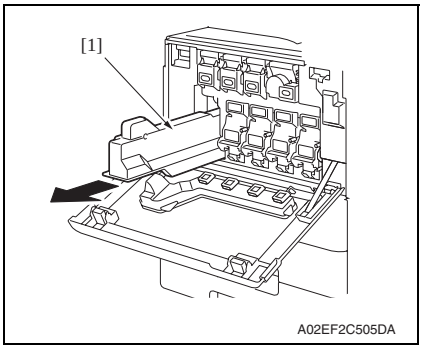
3.4.11 Replacing the waste toner box

A. Periodically replacing parts/cycle

- Waste toner box: Every 50,000 prints

B. Removal procedure

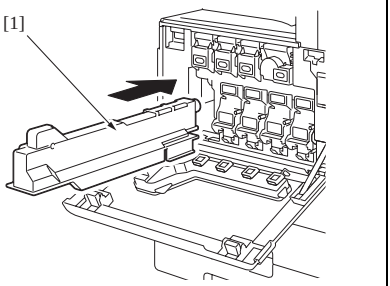
1. Open the front door.



2. Raise the waste toner box [1] and remove it.

3. Clean the surface around the waste toner collecting port.
See P.17

C. Reinstall procedure



1. Remove a new waste toner box from its packaging and remove the packing material.
2. Place the waste toner box [1] in position.

3. Close the front door.

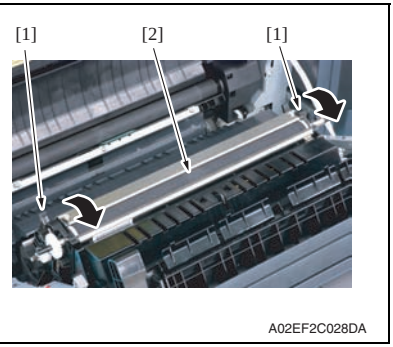
3.4.12 Replacing the transfer roller unit

A. Periodically replacing parts/cycle

- Transfer roller unit: Every 150,000 prints

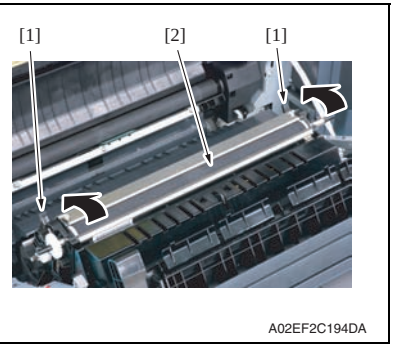
B. Removal procedure

1. Open the right door.



2. Unlock the lock levers [1] of the transfer roller unit (at two places).
3. Holding onto the lock levers [1] (at two places), remove the transfer roller unit [2].

C. Reinstall procedure



1. Holding onto the lock levers [1] (at two places), mount the new transfer roller unit [2].
2. Lock the lock levers [1] (at two places).

NOTE

- **Make sure that the levers are locked in position both at front and rear.**

3. Close the right door.

3.4.13 Replacing the imaging unit

A. Periodically replacing parts/cycle

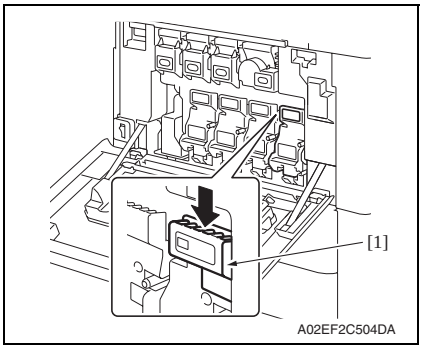
- Imaging unit Y,M,C : Every 90,000 prints
- Imaging unit K : Every 120,000 prints

NOTE

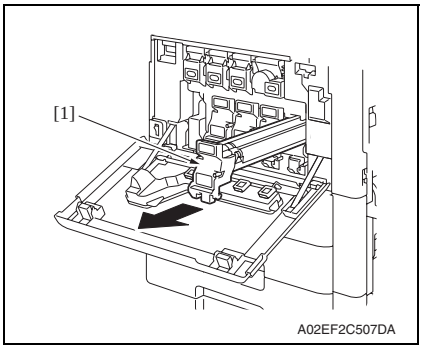
- **Although the procedure shown below is for the replacement of the imaging unit K, use the same procedure to replace other imaging units Y,M,C.**

B. Removal procedure

1. Open the front door.

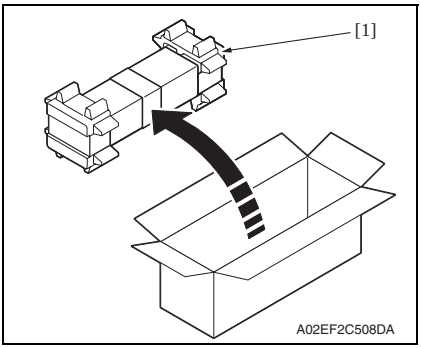


2. Press down to release the unlock lever [1] of the imaging unit to be replaced.

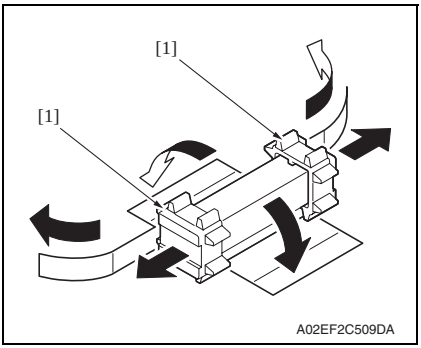


3. Remove the imaging unit [1].

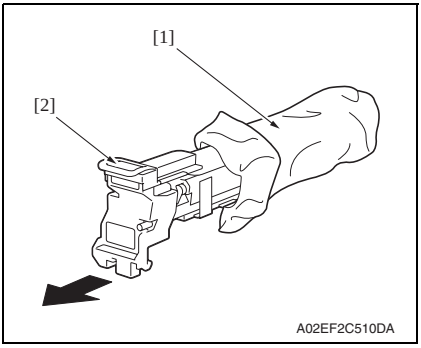
C. Reinstall procedure



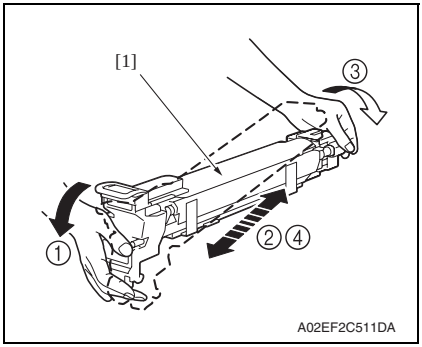
1. Remove the imaging unit [1] from its packaging.



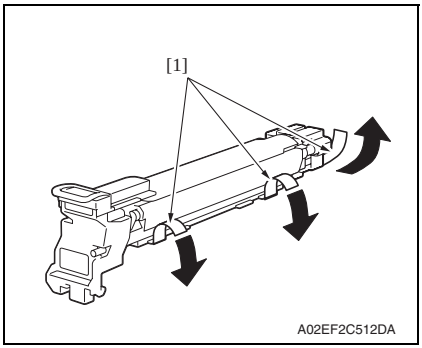
2. Peel off the tapes, and then remove the packing materials [1].



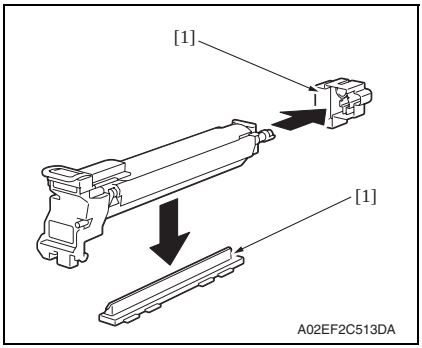
3. Remove the imaging unit [2] from the black protective bag [1].



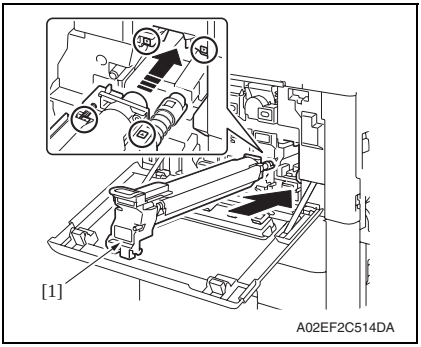
4. Tilt the imaging unit [1] to the left and shake it a little left to right twice. Then, tilt the imaging unit to the right and shake it a little right to left twice.



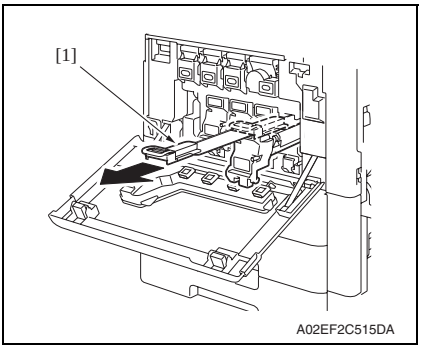
5. Peel off the tapes [1].



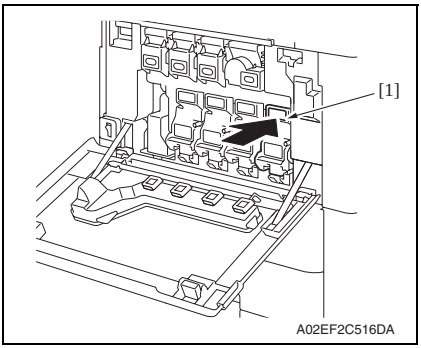
6. Remove the packing material and securing material [1].



7. Align the ▲ mark on the imaging unit with the ▼ mark on the main body. Install the imaging unit [1] into the main body.



8. To remove the protective sheet [1] which guards against PC drum damage, slowly pull its tab.



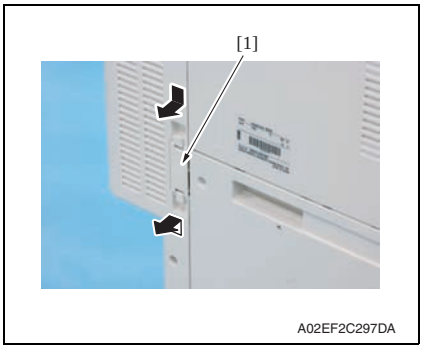
9. Insert the imaging unit [1] completely and close the front door.

3.4.14 Replacing the ozone filter

A. Periodically replacing parts/cycle

- Ozone filter: Every 150,000 prints

B. Procedure



1. Grip the handle on the ozone filter [1] and slide it out of the main body.

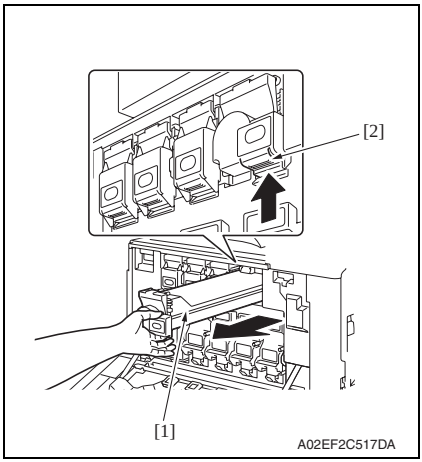
3.4.15 Replacing the toner cartridge

A. Periodically replacing parts/cycle

- Toner cartridge Y,M,C : Every 20,000 prints
- Toner cartridge K : Every 26,000 prints

B. Removal procedure

1. Open the front door.



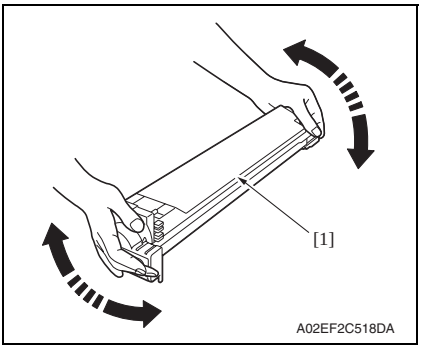
2. Pull up the locking tab [2] of the empty toner cartridge [1] to unlock it.

3. Pull out the toner cartridge [1] as far as possible, and then pull it up to remove it.

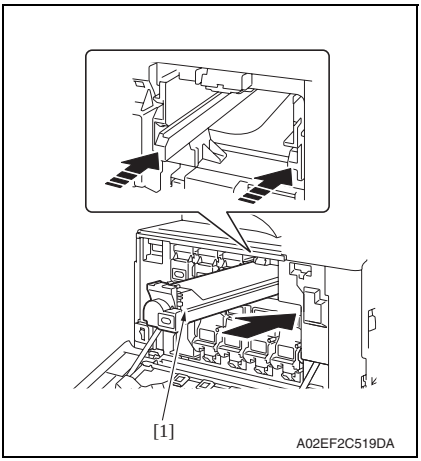
NOTE

- **Toner cartridges shipped with the product need replacing after 6,000 prints for Y, M, C and after 9,000 prints for K.**

C. Reinstall procedure



1. Remove the new toner cartridge [1] from its packaging, and then shake the cartridge up and down 5 to 10 times.



2. Align the toner cartridge [1] with the slots in the machine, and then insert the cartridge until the locking tab locks into place.

3. Clean the electrostatic charger wire.
See P.16

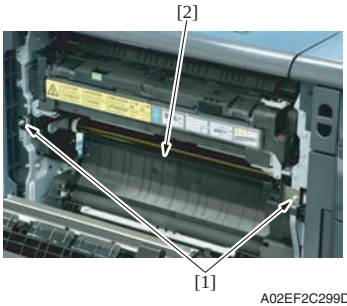
3.4.16 Replacing the transfer belt unit

A. Periodically replacing parts/cycle

- Transfer belt unit: Every 150,000 prints

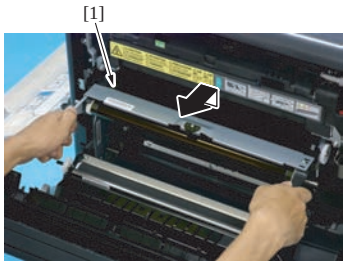
B. Removal procedure

1. Remove all toner cartridges.
   See toner cartridge replacement/removal procedure steps 1 through 3.
   See P.35
2. Remove all imaging units.
   See imaging unit replacement/removal procedure steps 1 through 3.
   See P.31
3. Open the right door.



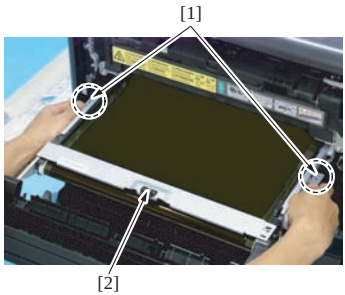
A02EF2C299DA

4. Remove two screws [1] and release the lock of the transfer belt unit [2].



A02EF2C301DA

5. Hold the both sides and lift it to take out the transfer belt unit [1] a little.



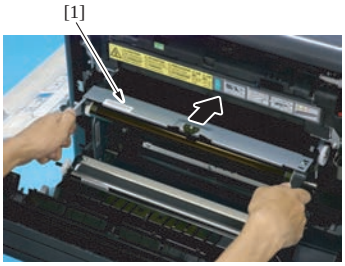
A02EF2C303DA

6. Hold the position [1] as shown in the left and remove the transfer belt unit [2].

NOTE

- **Do not touch the surface of the Image transfer belt unit.**
- **Cover the image transfer belt unit with something such shade cloth to protect its surface from dust or foreign matter.**

C. Reinstall procedure

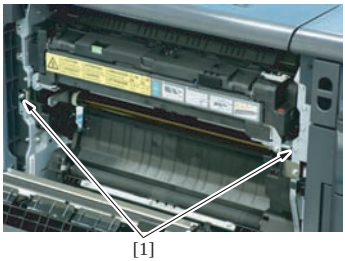


A02EF2C305DA

1. Insert the transfer belt unit [1].

NOTE

- **Insert the transfer belt unit 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 image transfer belt unit.**
- **Cover the image transfer belt unit with something such shade cloth to protect its surface from dust or foreign matter.**



A02EF2C307DA

2. Install the transfer belt unit with two screws [1].

NOTE

- **Replace the ozone filter, which is supplied with the transfer belt unit, at the same time.**

3. Install the toner cartridges of all colors.
See toner cartridge replacement/installation procedure steps 1 and 2.
See P.35

4. Install the imaging units of all colors.
See imaging unit replacement/installation procedure steps 1 and 2.
See P.31

5. Close the right door.

6. Turn on the power switch.

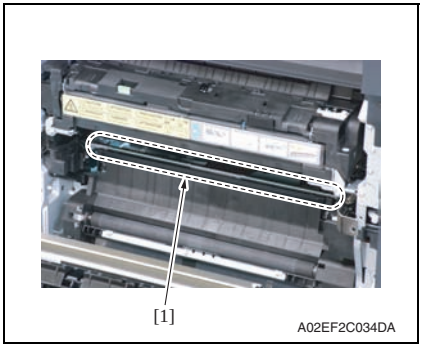
3.4.17 Cleaning of the image transfer entrance guide

A. Periodically cleaning parts/cycle

- Image transfer entrance guide: When the transfer belt unit is replaced (every 150,000 print)

B. Procedure

1. Remove the transfer belt unit.
See P.37



2. Wipe the image transfer entrance guide [1] clean of spilled toner and dirt using a cleaning pad with water or alcohol.

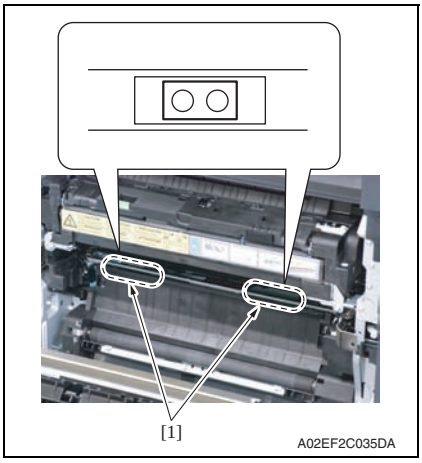
3.4.18 Cleaning of the IDC/registration sensor/MK,YC

A. Periodically cleaning parts/cycle

- IDC/registration sensor/MK,YC: When the transfer belt unit is replaced (every 150,000 print)

B. Procedure

1. Remove the transfer belt unit.
See P.37



2. Wipe the surface of the IDC/registration sensor/MK,YC [1] clean of spilled toner and dirt using a cotton bud.

3.4.19 Replacing the fusing unit

CAUTION

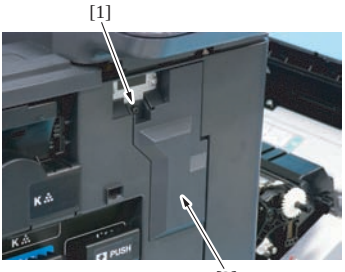
- **The temperature gets high in the vicinity of the fusing unit. You may get burned when you come into contact with the area. Before replacement operations, make sure that more than 20 minutes have elapsed since the power switches were turned off.**

A. Periodically replacing parts/cycle

- Fusing unit: Every 400,000 prints

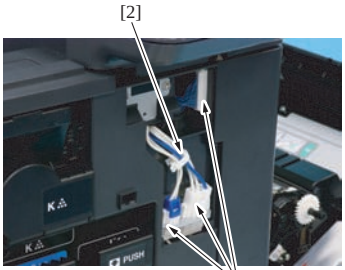
B. Procedure

1. Open the front door.
2. Open the right door.



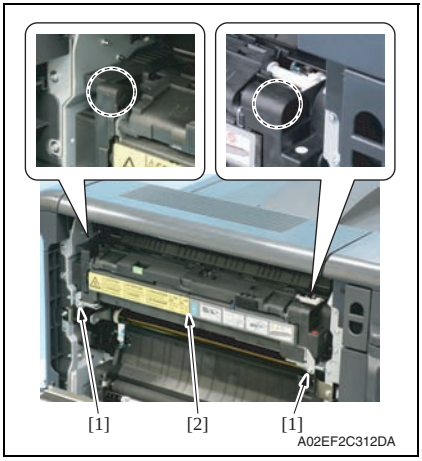
A02EF2C309DA

3. Remove the screw [1], and remove the connector protective cover [2].



A02EF2C311DA

4. Disconnect three connectors [1].
5. Remove the harness from the wire saddle [2].



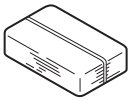
6. Remove two screws [1], and remove the fusing unit [2].

NOTE

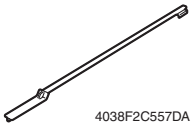
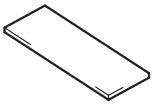
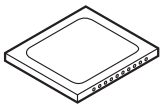
- **When removing the fusing unit, hold the parts shown on the picture on the left so that it would not fall.**

4. Service tool

4.1 Service material list

Name	Shape	Material No.	Remarks
Cleaning pad	 A02EF2C526DA	000V-18-1	10pcs/1pack
Isopropyl alcohol	 A00KF2C506DA	—	
Molykote EM-50L grease	 A00KF2C507DA	4478 7801 ##	Used with FS-519

4.2 CE tool list

Tool name	Shape	Quantity	Parts No.	Remarks
PH window cleaning jig	 4038F2C557DA	1	4038 2083 ##	
PH window cleaning jig pad	 4038F2C558DA	1	4038 2084 ##	
Compact flash	 4037F2C601DA	1	V865400001 (blank)	*1

*1: Inquire of KMBT about the part number of compact flash in which the firmware data is written.

4.3 Print materials

4.3.1 Imaging unit single parts (IU)

Parts name	Replacing period
Imaging unit K	120,000 prints
Imaging unit Y	90,000 prints
Imaging unit M	90,000 prints
Imaging unit C	90,000 prints

See P.14

4.3.2 Toner cartridge single parts (T/C)

Parts name	Replacing period
Toner cartridge K	26,000 prints *2
Toner cartridge Y	20,000 prints *2
Toner cartridge M	20,000 prints *2
Toner cartridge C	20,000 prints *2

*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

*2: Toner cartridges shipped with the product need replacing after 6,000 prints for Y, M, C and after 9,000 prints for K.

4.3.3 Waste toner box

Parts name	Replacing period *1
Waste toner box	50,000 prints *1

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

See P.14

4.3.4 Maintenance kit

There is no setting for the maintenance kit.

5. Firmware upgrade

5.1 Outline

- There are two ways to update the firmware: One is by directly connecting with the main body using the compact flash, and the other is by downloading over a network using the Internet ISW.
  In addition, customers can upgrade the firmware using [Firmware Update] in the administrator setting.

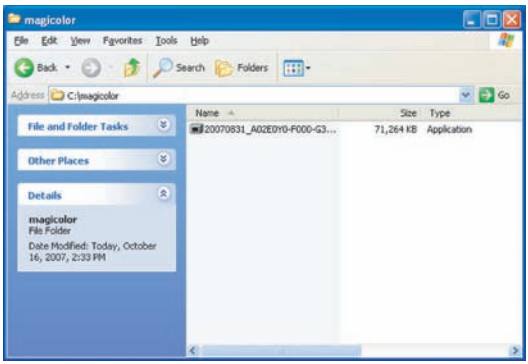
5.2 Preparations for firmware rewriting by Windows Command Prompt

5.2.1 Service environment

- OS: Windows 2000/XP
- Drive which enables writing/reading of compact flash
- Compact flash (service tool)

5.2.2 Writing into the compact flash

1. Put the data of firmware in the optional directory. (C:\magicolor in the below figure)

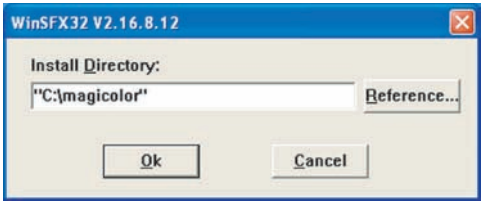


A02EF2C276DA

NOTE

- **The file name of firmware data consists of the “Release Date_Version_CHECKSUM-****.exe.”**

2. Double-click the firmware data, and specify the directory to be uncompressed, and then uncompress it.

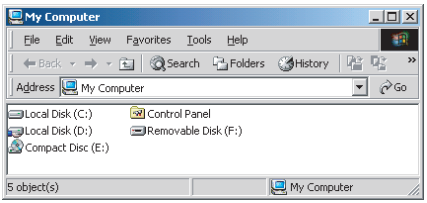


A02EF2C277DA

NOTE

- **When old firmware is still left in the specified directory to be uncompressed, delete it before uncompressing.**
- **When the firmware data is decompressed, "card_work" folder is created in the selected directory and the data is decompressed in this folder.**

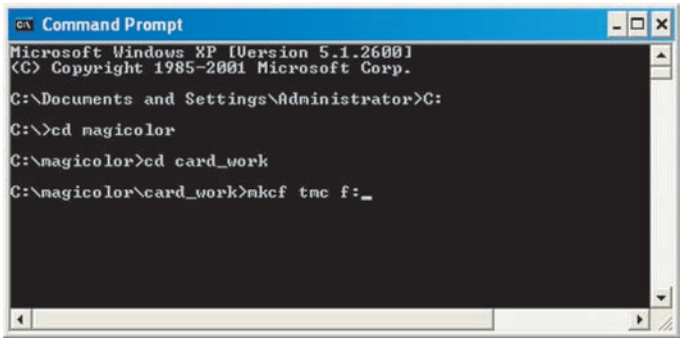
3. Mount the compact flash on the PC, and check the drive name, which was recognized in the Windows. (F-drive in the following figure)



4036fs2623e0

4. Click [Start] → [Program] → [Accessories] → [Command Prompt] to open the command prompt.
5. Use the command prompt to move into the uncompressed directory.

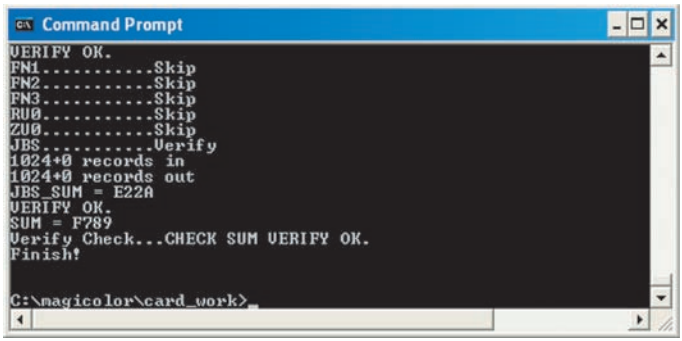
6. Specify the drive of compact flash, which was recognized through the procedure 3, and execute the “mkcf.bat.” (Input the C: \magicolor\card_work>mkcf tmc f (drive number): in the below figure, and push the “Enter”.)



A02EF2C278DA

7. Once the “mkcf.bat” is executed, data writing into the compact flash is started.

8. Upon completion of writing, CHECKSUM is executed. If CHECKSUM value is precisely matched, “VERIFY OK” appears.



A02EF2C279DA

9. Remove the compact flash from PC.

NOTE

- **When removing the compact flash, be sure to check if data is written as normal and then remove it according to the precise removing method.**

5.3 Firmware rewriting by compact flash

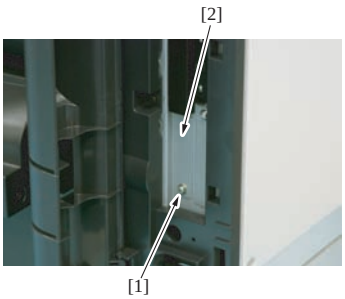
- The firmware is updated using the compact flash.

5.3.1 Updating method

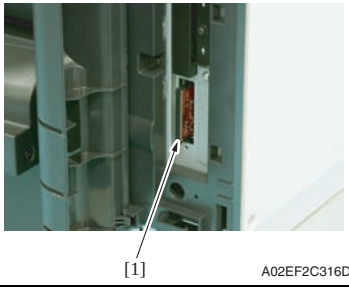
NOTE

- **NEVER remove or insert the compact flash card with the machine power turned ON.**

1. Turn OFF the power switch.
2. Open the rear right door.



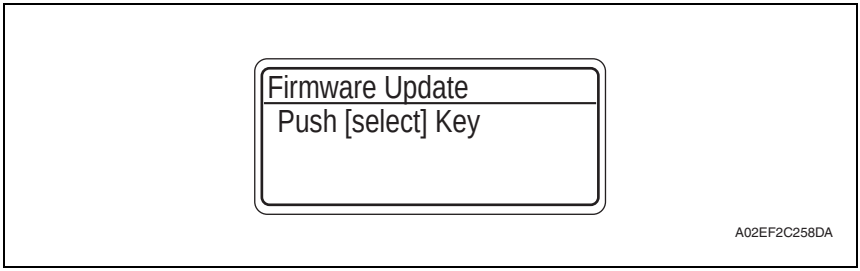
3. Remove the screw [1] and the metal blanking plate [2].



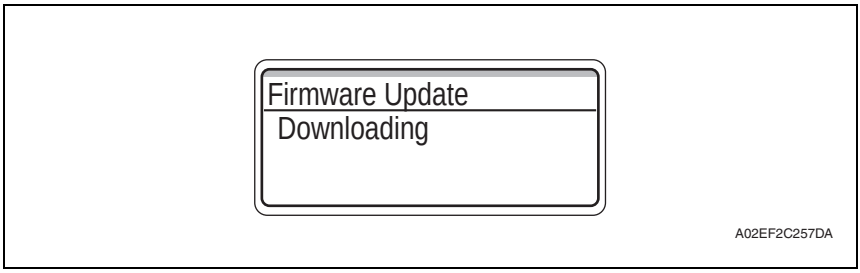
4. Insert the compact flash card [1] into the slot.

5. Turn ON the power switch.

6. Check the message and press the Menu/Select key to start the firmware rewrite.



7. While the firmware rewrite is in process, the following message appears and LED line blinks in blue.



8. On the control panel, check the message, Download Completed, which tells the firmware update has been completed successfully. (LED line lights up in blue.)
9. Turn OFF the power switch.
10. Remove the compact flash from the slot.
11. Turn ON the power switch.

NOTE

- **When turning ON the power switch for the first time after completing the firmware update, do not turn OFF the power switch until "Ready to Print" message or the message that prompts you to enter a serial number appears.**
- **When the message that prompts you to enter a serial number appears after turning ON the power switch, enter the serial number from [Service Mode] → [System settings] → [Enter Serial No.].**
- **If trouble code D3## appears after turning ON the power switch, irregularity in non-volatile data needs to be addressed.**

5.3.2 Action when data transfer fails

- If “Failed to Download” appears on the control panel, indicating that rewriting has been unsuccessful (in which case the Start key lights up red), take the following steps.

1. Perform the data rewriting procedure again.
2. If the procedure is abnormally terminated, change the compact flash for a new one and try another rewriting sequence.
3. If the procedure is still abnormally terminated, change the board and carry out data rewriting procedure.

MFP CONTROLLER	MFP board (MFPB)
PRINTER	Printer control board (PRCB)
FINISER	FS control board (FSCB) *1

⚠ *1: The optional finisher FS-519 or FS-609 is necessary for the above procedure.

5.4 Updating the firmware with the Internet ISW

5.4.1 Outline

- [Internet ISW] is the system where the firmware update instructions are sent to the main body via the control panel so that the main body will automatically receive the latest firmware data from the program server over a network. Using Internet ISW allows updating the firmware while CE is visiting a customer site without bringing the latest firmware data.

5.4.2 Service environment

The following conditions are necessary for using the Internet ISW function.

- The main body is connected to such a network environment that the firmware can be downloaded on the internet using the ftp or http protocol.

The “Internet ISW” will not operate under the following conditions.

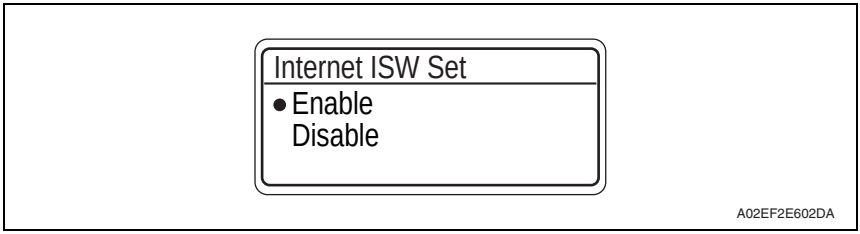
- Power switch is set to OFF.
- When the following setting is set to “ON”:
  [Admin. Settings] → [Security Settings] → [EnhancedSecurity]
- The main body has the job currently performing.

5.4.3 Preparations for firmware rewriting

- For using the Internet ISW, the network parameter, program server address as well as firewall address need to be set to the main body.
- For details of each setting item, refer to Adjustment/Setting “Internet ISW”.
  See P.241

A. Internet ISW Set

1. Call the Service Mode to the screen.
2. Select [Internet ISW Set] which is available from [Internet ISW].



3. Select [Enable], and press the Menu/Select key.

NOTE

- **Settings such as server setting, etc. will be available by selecting “Enable” on this setting.**
- **When the following setting is set to “ON”, “Enable” cannot be selected on this setting.**
  [Admin. Settings] → [Security Settings] → [EnhancedSecurity]

B. Protocol setting

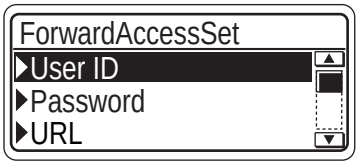
- **It performs the setting concerning the protocol (ftp or http) for connecting to the Internet ISW.**
- **When connecting to the program server using a proxy server, perform the setting for a proxy server.**

Step	Connecting by http	Connecting by ftp
0	Select [Internet ISW] which is available from [Service Mode].	
1	Data acquisition setting • Select [HTTP Settings] → [DataRetrievalSet] → [Enable].	Data acquisition setting • Select [FTP Settings] → [DataRetrievalSet] → [Enable].
2	Proxy Connection • For connecting via proxy server, select [ON].	
3	Proxy Server • For connecting via proxy server, set the proxy server address and the port number. *1.* Select the [Server Address], and set the proxy server address by IP addressing scheme or FQDN scheme. *2.* Select [Port Number], and set the port number for the proxy server from 1 through 65535.	
4	Proxy Auth. • Set the login name and the password which may be necessary for authentication when accessing to the proxy server. *1.* When Authentication is necessary for accessing to the proxy server, select [Auth. Settings], and select [ON]. *2.* Select [Auth. Login Name] and enter the login name with the operation keys. *3.* Select [Auth. Password] and enter the password with the operation keys.	ConnectionSetting • Perform the setting for accessing FTP server. *1.* Select [Port Number], and set the port number for FTP server from 1 through 65535. *2.* Select [Timeout], and set the time for the connection time out from 1 through 60. *3.* When connecting in PASV mode, select [PASV Mode], and select [Enable]. *PASV Mode: This mode is for transferring the file with FTP under the condition where communication is restricted such as inside the firewall. Since with PASV mode, the client with restriction sets the port number, data transmission port can be secured to enable the file transmission.
5	Connection Timeout • Select [ConnectionTimeout], and set the time for the connection time out between 30 and 300 seconds.	—

C. Forwarding access setting

- To make the access setting for the program server which stores the firmware data.

1. Select [Service Mode] → [Internet ISW].
2. Select [ForwardAccessSet], and press the Menu/Select key.



A02EF2E604DA

3. Select [User ID], and enter the user ID which is necessary for connecting to the program server with the operation keys, and press the Menu/Select key.
4. Select [Password], and enter the password which is necessary for connecting to the program server with the operation keys, and press the Menu/Select key.
5. Select [URL], and enter the directory which stores the program server address and the firmware with the operation keys, and press the Menu/Select key.

NOTE

- **Enter the URL which matches to the protocol to be used.**

When connecting to http		**http://(host name or IP address)/directory name**
	or	**https://(host name or IP address)/directory name**
When connecting to ftp		**ftp://(host name or IP address)/directory name**

6. Select [File Name], and enter the file name of the firmware data to be downloaded with the operation keys, and press the Menu/Select key.
7. Press the Cancel key to finish setting.

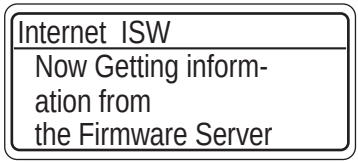
5.4.4 Firmware update procedure

NOTE

- **When performing the Internet ISW, ask the administrator for permission beforehand.**
- **DO NOT turn OFF the power switch while downloading.**

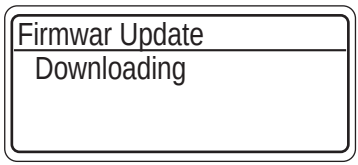
A. Update procedure

1. Select [Service Mode] → [Internet ISW] → [Download].
2. Select [Start] and press the Menu/Select key.
3. The message, [Rebooting. Please do not turn OFF power.], appears.
4. The machine starts rebooting itself. The control panel displays [Now initializing Please wait] to determine the machine configuration.
5. When connection is made, the control panel displays [Now Connecting to the Firmware Server].
6. While the machine is connected to the server, the message is displayed as shown in the following illustration.



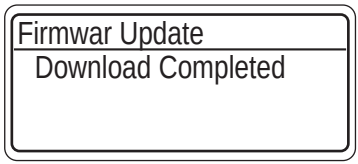
A02EF2C249DA

7. When the program starts running, the control panel displays [Now Downloading Program Data from the Firmware Server] and the download is started.
8. When the program download is successfully complete, the control panel displays [Push [select] Key].
9. Press the Menu/Select key on the control panel to start downloading the firmware data.
10. While downloading the firmware data, the control panel displays [Downloading].



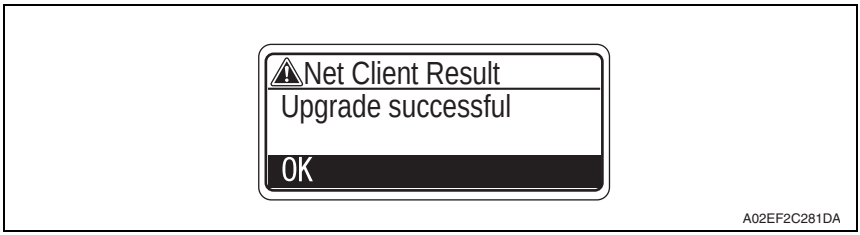
A02EF2C250DA

11. When the firmware download is complete, the control panel displays the message as shown in the following illustration.



A02EF2C251DA

12. When Internet ISW is complete successfully, the control panel displays the message as shown in the following illustration.



B. Completed or failed

(1) Firmware updated normally

1. When the Firmware is normally updated, restart the main body in auto or manual mode to display the outcome, and press the Menu/Select key to return to the main screen.

(2) Failing to update the firmware due to the network trouble

1. When updating failed to complete due to the trouble on connecting to the network, an error code and the message will be displayed.
2. Restart the main body in auto or manual mode, and press the Menu/Select key. It can be used with the firmware version before conducting updating.
3. Check the settings for the network by error codes, and try updating again.

NOTE

- **For error codes, refer to "Error code list for the Internet ISW".**
See P.56

(3) Firmware rewrite failure after firmware download is started

1. Upon starting the firmware rewrite, the main body ROM data is deleted.
   If an error occurs after starting the firmware rewrite, the machine starts rebooting itself and displays the standby screen to wait for the restart instruction.
2. Press the Menu/Select key on the standby screen, and try reconnecting to the server.

NOTE

- **Return to the standby screen without fail after turning the power switch OFF/ON if the firmware is not updated.**
- **Firmware can be updated with the Compact flash with the power switch OFF.**

C. Confirming the firmware version

1. Call the Service Mode to the screen.
2. Select [Management List] which is available from [List Output], and print out the machine management list.
3. Check if the firmware version is updated.

5.4.5 Error code list for the Internet ISW

- When a trouble occurred while conducting the Internet ISW and it was not normally connected, the message on the status and the error code will be displayed on the control panel.
  When updating with CS Remote Care, the error code will be sent to the CS Remote Care center.

Error code Control panel	Description	Countermeasure
0x00000001	Illegal error on the control	• Check if the following setting is set to "Enable". [Service Mode] → [Internet ISW] → [Internet ISW Set] • Check the status of the following setting. [Service Mode] → [Internet ISW] → [ForwardAccessSet] • If the above process does not solve the problem, inform the corresponding error code to the KONICA MINOLTA.
0x00000010	Parameter error	• Check if the following setting is set to "Enable". [Service Mode] → [Internet ISW] → [Internet ISW Set] • If the above process does not solve the problem, inform the corresponding error code to KONICA MINOLTA.
0x00111000	Error concerning the network • Connection has been completed.	• Check the User's network environment. (LAN cable's connection) • Check the status of the following setting. [Service Mode] → [Internet ISW] → [ForwardAccessSet] • Check to see if the FTP server operates normally.
0x00111001	Error concerning the network • It cannot be connected to the server.	• Check the network environment of the User. • Check to see if the FTP server operates normally.
0x00111100	Error concerning the network • Communication timeout.	
0x00111101	Error concerning the network • Disconnection occurred	• Check the network environment of the User. • Check to see if the FTP server operates normally.
0x00111110	Error concerning the network • The network is not connected.	
0x00110010	Error concerning the network • Others	
0x00001###	FTP error • Reply code when it failed to be connected	• Check to see if FTP server normally operates. • Check the IP address, user's name, etc.

Error code Control panel	Description	Countermeasure
0x00002###	FTP error • Error reply code for the user command or pass command	• Check to see if FTP server operates normally.
0x00003###	FTP error • Error reply code for CWD command	
0x00004###	FTP error • Error reply code for the TYPE command.	• Check to see if FTP server operates normally.
0x00005###	FTP error • Error reply code for the PORT command.	
0x00006###	FTP error • Error reply code for the PASV command.	• Check to see if FTP server operates normally. • Set the PASV mode to “Disable”, and try it again.
0x00007###	FTP error • Error rely code for the RETR command.	• Check to see if FTP server operates normally. • Wait for about 30 minutes and try it again.
0x1000 0100	• It cannot be accepted because of the job currently being executed. • ISW being executed by other method.	• Wait for the current job to be completed and try it again.
0x10000102	• The Internet ISW is already being executed.	• Wait for the current Internet ISW to be completed.
0x10000103	• It failed to prohibit the job. (It failed to lock the operation.) → It failed to lock the job because the operation is already locked with PSWC, etc.	• Check if the following setting is set to “Enable”. [Service Mode] → [Internet ISW] → [Internet ISW Set] • If the above process does not solve the problem, inform the corresponding error code to the KONICA MINOLTA.
0x10000104	• There is no space for F/W data to be downloaded.	
0x10000106	• Check sum error	
0x10000107	File access error • The file downloaded has an error. • The header of the file which has been read has an error. • The size of the file to be downloaded is too large. • When it is identified to be the different type of F/W.	• Check to see if the downloaded F/W is of the correct type.

Error code Control panel	Description	Countermeasure
0x10000108	• The area F/W is stored is destroyed, and another ISW is necessary.	• Wait until ISW is automatically executed on printer side.
0x20000000	The temporary error when running the subset • When starting the Internet ISW in a normal program, the rebooting will start and the Internet ISW will be executed with the subset program. During the process by the subset program, it has to be in the “Failed” status unless the Internet ISW is successfully conducted. This code is used temporarily to make it in error status.	

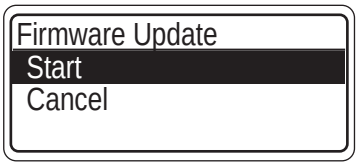
5.5 Firmware update by customer

5.5.1 Outline

- This machine allows the firmware update by customer, using the built-in FTP server feature.

A. Procedure

1. Store THAMESMC.bin file in any desired place in the PC.
2. Press the Menu/Select key on the control panel.
3. Select [Admin. Settings] and press the Menu/Select key.
4. Enter the administrator password and press the Menu/Select key.
5. Select [Firmware Update] and press the Menu/Select key.
6. Select [Start] and press the Menu/Select key.
   * The machine starts the setup for the firmware update.

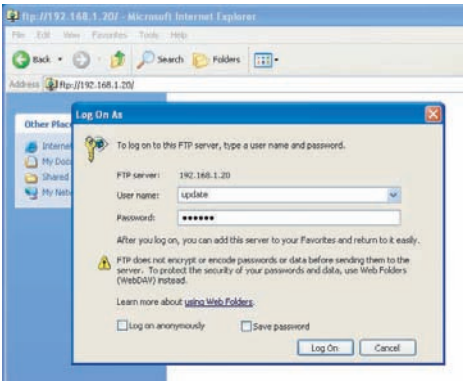


A02EF2C280DA

7. After the machine reboots itself, access and log in to the machine's FTP server from the PC.

NOTE

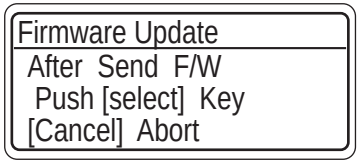
- **Log in with typing [update] for user name and [update] for password.**
- **When logging in via Internet Explorer ver. 6, perform as follows:**
  Enter "ftp://<Machine's IP address>" into the URL field.
  Select Login method from File menu to display the login screen.
  Enter the user name and password.



A02EF2C275DA

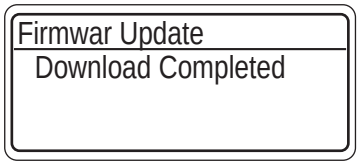
8. Forward the THAMESMC.bin file stored in step 1 to the FTP server.
   After completing the file transfer, start operation from the control panel.

9. Press the Menu/Select key on the control panel.
The machine starts downloading the data.



A02EF2C254DA

10. Make sure that the message “Download Completed” appears. Then, turn OFF and then turn ON the power switch.



A02EF2C251DA

11. After the reboot, press the Menu/Select key.



A02EF2C281DA

6. Other

6.1 Disassembly/adjustment prohibited items

A. Paint-locked screws

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

B. Red-painted screws

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

C. Variable resistors on board

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

D. Removal of PWBs

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

6.2 Disassembly/assembly/cleaning list (other parts)

6.2.1 Disassembly/assembly parts list

No.	Section	Part name	Ref. page
1	Exterior parts	Front door	P.65
2		Upper front cover	P.66
3		Right front cover/1	P.67
4		Right front cover/2	P.67
5		Left cover	P.69
6		Rear left cover	P.70
7		Exit cover	P.70
8		Rear right cover/1	P.71
9		Rear right cover/2	P.71
10		Paper feed tray 1 front cover	P.72
11		Paper feed tray 1 rear cover	P.72
12		Upper rear cover	P.72
13		Rear cover/1	P.73
14		Rear cover/2	P.73
15		Lower rear cover/1	P.73
16		Lower rear cover/2	P.73
17		Vertical transport door	P.73
18		Control panel assy	P.74
19		Output tray	P.74
20		Paper feed tray 2	P.75
21		Paper feed tray 3	P.75
22		Front cover	P.76
23	Units	PH unit	P.78
24		Paper feed tray 1 unit	P.83
25		Main drive unit	P.84
26		Transport drive unit	P.86
27		Fusing drive unit	P.89
28		Hopper drive unit (C/K, Y/M)	P.91
29		Right door assy	P.92

No.	Section	Part name	Ref. page
30	PWBs	PH relay board (PHREYB)	P.95
31		DC power supply (DCPU)	P.97
32		Printer control board (PRCB)	P.99
33		MFP board (MFPB)	P.101
34		High voltage unit (HV)	P.105
35		Service EEPROM board (SV ERB)	P.106
36		SODIMM/1, SODIMM/2	P.108
37		JMP board (JMPB)	P.108
38		NVRAM board (NRB)	P.109
39		Paper feed tray 2 paper FD size detect board (PSDTB/1)	P.109
40		Paper feed tray 3 paper FD size detect board (PSDTB/2)	P.110
41	Motors	Transport motor (M1)	P.111
42		Color PC motor (M2)	P.111
43		Fusing motor (M5)	P.112
44		Switchback motor (M6)	P.113
45		Duplex transport motor(M7)	P.114
46		Fusing retraction motor (M12)	P.115
47		Paper feed tray 2 lift-up motor (M8)	P.116
48		Paper feed tray 3 lift-up motor (M9)	P.117
49		Toner supply motor/CK (M3)	P.119
50		Toner supply motor/YM (M4)	P.119
51	Clutches	Paper feed tray 2 paper feed clutch (CL1)	P.120
52		Paper feed tray 3 vertical transport clutch (CL3)	P.121
53		Paper feed tray 3 paper feed clutch (CL2)	P.122
54		Paper feed tray 1 feed clutch (CL4)	P.122
55		Transfer belt retraction clutch (CL7)	P.123
56		Developing clutch/K (CL5)	P.123
57		Tim. roller clutch (CL6)	P.124
58	etc.	IDC registration sensor/MK (IDCS/MK)	P.125
59		IDC registration sensor/YC (IDCS/YC)	P.125

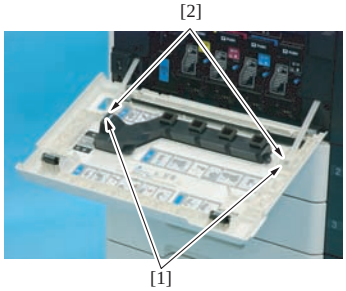
6.2.2 Cleaning parts list

No.	Section	Part name	Ref. page
1	Processing section	Transfer belt unit	P.127
2		PH window	P.127
3	Paper feed tray 2	Paper feed tray 2 feed roller	P.128
4		Paper feed tray 2 pick-up roller	P.128
5		Paper feed tray 2 separation roller	P.128
6	Paper feed tray 3	Paper feed tray 3 feed roller	P.129
7		Paper feed tray 3 pick-up roller	P.129
8		Paper feed tray 3 separation roller	P.129
9		Paper feed tray 3 transport roller	P.130
10	Paper feed tray 1	Paper feed tray 1 feed roller	P.130
11		Paper feed tray 1 separation roller	P.130

6.3 Disassembly/assembly procedure

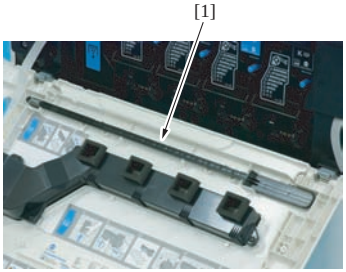
6.3.1 Front door

1. Open the front door.



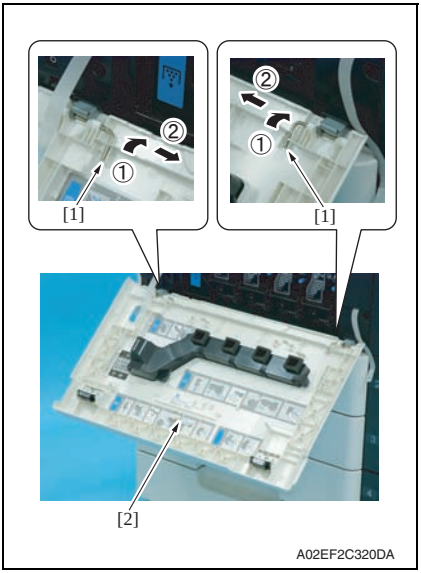
A02EF2C317DA

2. Remove two screws [1] and the suppression plate [2].



A02EF2C318DA

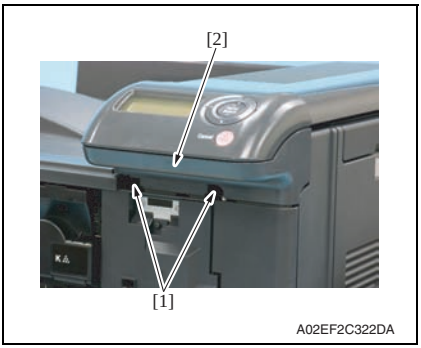
3. Remove the PH window cleaning jig [1].



4. Slide the pins [1] in the direction of the arrow and remove it.
5. Remove the front door [2].

6.3.2 Upper front cover

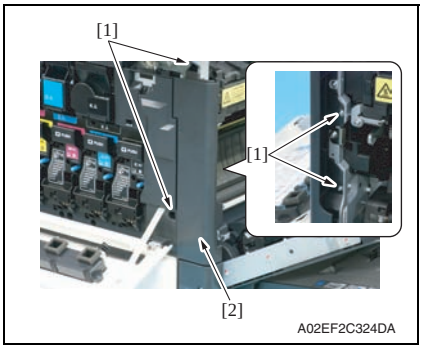
1. Open the front door.
2. Open the right door.
3. Remove the output tray.
See P.74



4. Remove two screws [1] and remove the upper front cover [2].

6.3.3 Right front cover/1

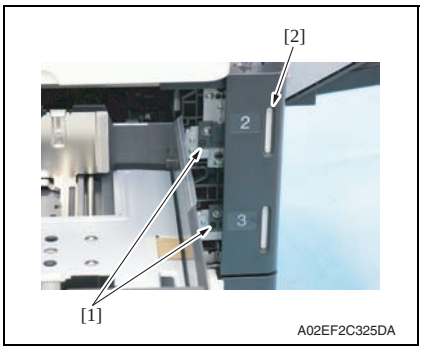
1. Open the front door.
2. Open the right door.
3. Remove the upper front cover.
See P.66



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

6.3.4 Right front cover/2

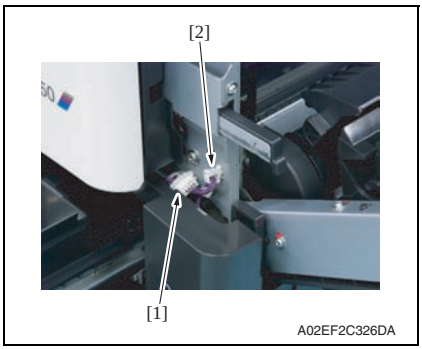
1. Slide out the paper feed tray 2 and paper feed tray 3.
2. Remove the right front cover/1.
See P.67



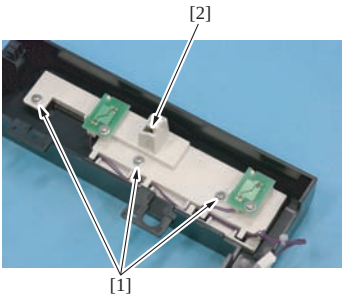
3. Remove two screws [1], and remove the right front cover/2 [2].

NOTE

- **Do not remove it in rush as it is connected to the harness.**

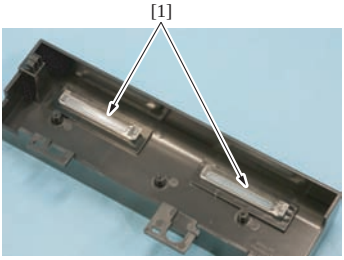


4. Disconnect the connector [1], and remove the harness from the wire saddle [2].



A02EF2C327DA

5. Remove three screw [1], and remove the paper empty indicator board assy [2].

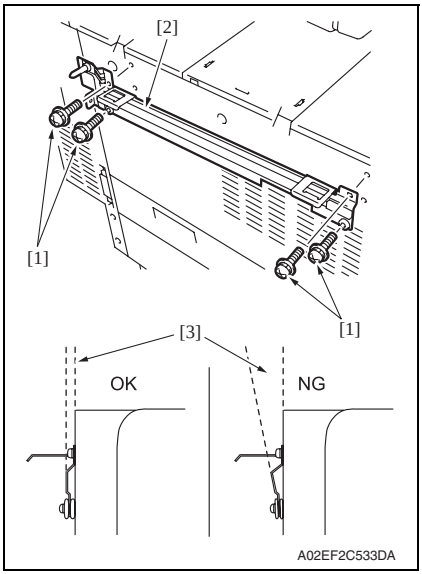


A02EF2C328DA

6. Remove two empty display lenses [1].

6.3.5 Left cover

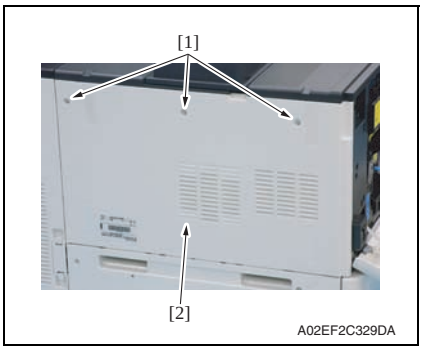
1. Open the front door.



2. If the optional finisher FS-519 is mounted, remove it.
See P.20 of the FS-519/PK-515/OT-602 service manual.

NOTE

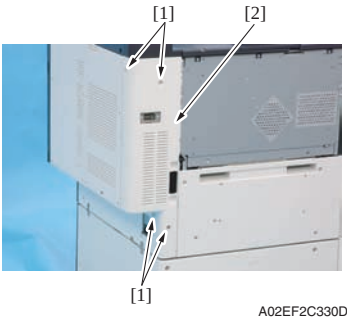
- **After removing the finisher FS-519, remove four screws [1] and mounting plate [2].**
- **When reinstalling the mounting plate, do not secure two lower screws too tight, and make sure that the plate and the main unit will be parallel and the clearance [3] between those two will be even.**



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

6.3.6 Rear left cover

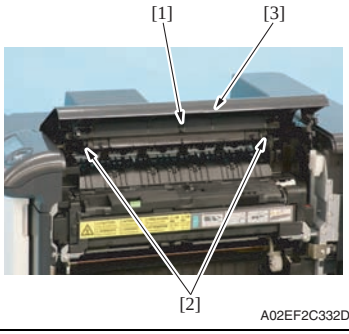
1. Open the front door.
2. Remove the ozone filter.
See P.35
3. Remove the left cover.
See P.69



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

6.3.7 Exit cover

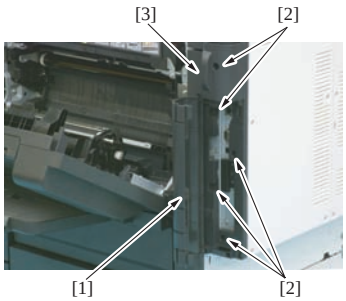
1. Open the right door.
2. Open the exit cover.



3. Remove the screw [1] and two claws [2] to remove the exit cover [3].

6.3.8 Rear right cover/1

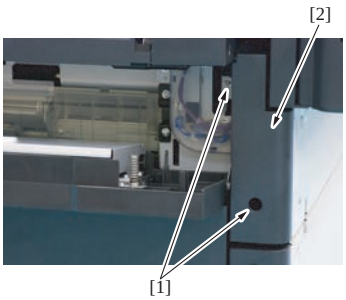
1. Open the right door.



2. Open the rear right door [1],
3. Remove five screws [2], and remove the rear right cover/1 [3],

6.3.9 Rear right cover/2

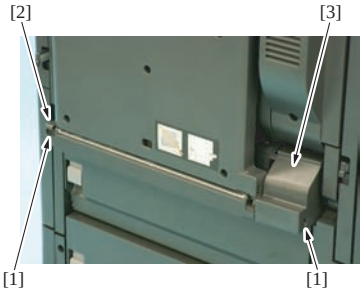
1. Open the vertical transport door.



2. Remove two screws [1], and remove the rear right cover/2 [2].

6.3.10 Paper feed tray 1 front cover, Paper feed tray 1 rear cover

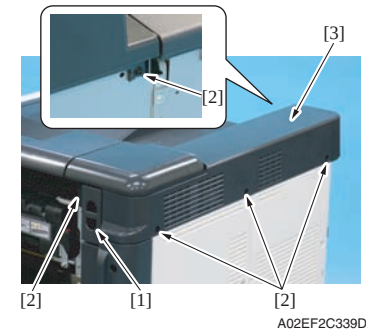
1. Open the vertical transport door.
2. Remove the rear right cover/2.
See P.71



3. Remove two screws [1], and remove the paper feed tray 1 front cover [2] and the paper feed tray 1 rear cover [3].

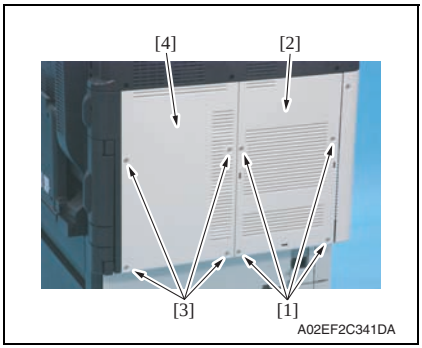
6.3.11 Upper rear cover

1. Open the right door.
2. Remove the left cover.
See P.69
3. Remove the rear left cover.
See P.70



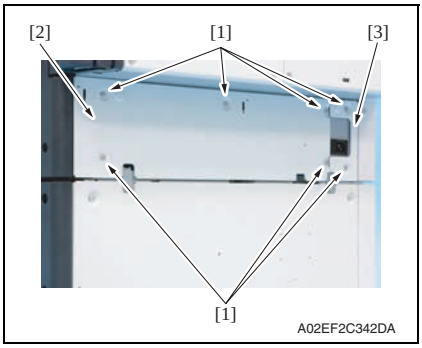
4. Remove the filter folder [1].
5. Remove five screws [2],remove the upper rear cover [3].

6.3.12 Rear cover/1, Rear cover/2.



1. Remove four screws [1], and remove the rear cover/2 [2].
2. Remove four screws [3], and remove the rear cover/1 [4].

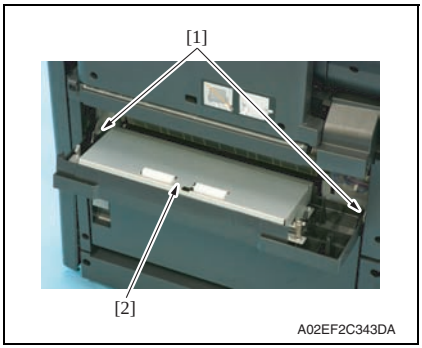
6.3.13 Lower rear cover/1, lower rear cover/2



1. Remove seven screws [1], and remove the lower rear cover/1 [2] and the lower rear cover/2 [3].

6.3.14 Vertical transport door

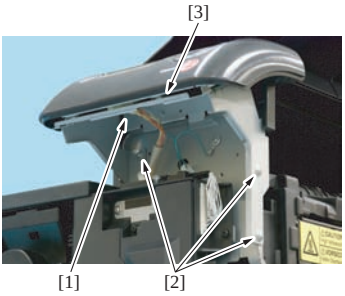
1. Open the vertical transport door.



2. Unhook two tabs [1], and remove the vertical transport door [2].

6.3.15 Control panel assy

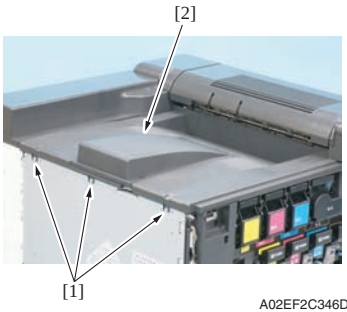
1. Open the right door.
2. Open the exit cover.
3. Remove the upper front cover.
See P.66



4. Disconnect the connector [1], Remove three screws [2], and remove the control panel assy [3].

6.3.16 Output tray

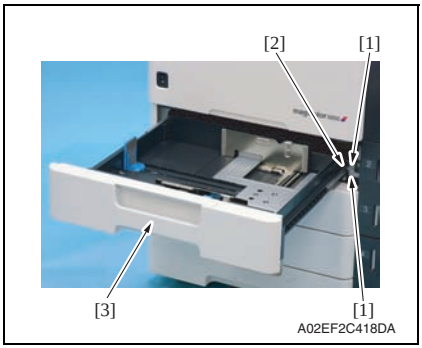
1. Open the front door.
2. Remove the left cover.
See P.69



3. Remove three screws [1], and remove the output tray [2].

6.3.17 Paper feed tray 2

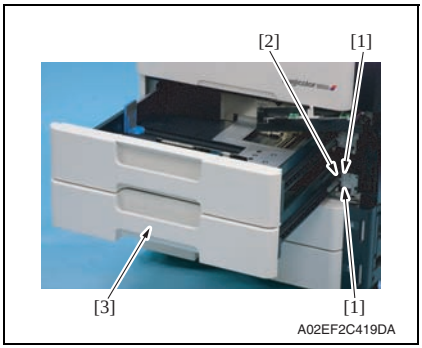
1. Slide out the tray 2.



2. Remove two screws [1], and metal plate [2], and remove the paper feed tray 2 [3].

6.3.18 Paper feed tray 3

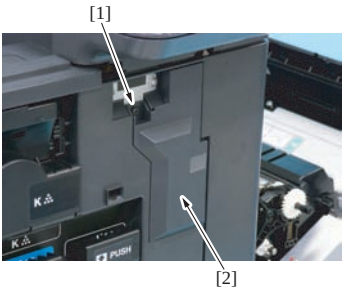
1. Slide out the paper feed tray 2 and paper feed tray 3.
2. Remove the right front cover/2.
See P.67



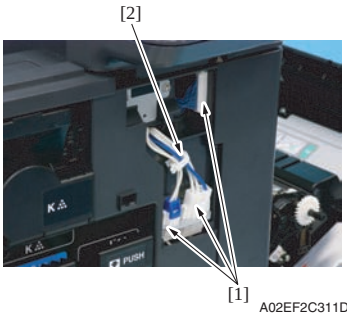
3. Remove two screws [1] and metal plate [2], and remove the paper feed tray 3 [3].

6.3.19 Front cover

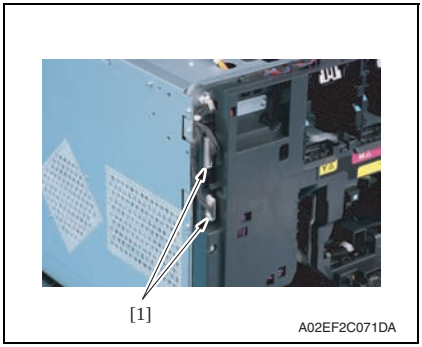
1. Slide out the paper feed tray 2.
2. Remove the front door.
See P.65
3. Remove the left cover.
See P.69
4. Remove the toner cartridges (C, M, Y, K).
See P.35
5. Remove the waste toner box.
See P.29
6. Remove the imaging units (C, M, Y, K).
See P.31
7. Remove the right front cover/2.
See P.67



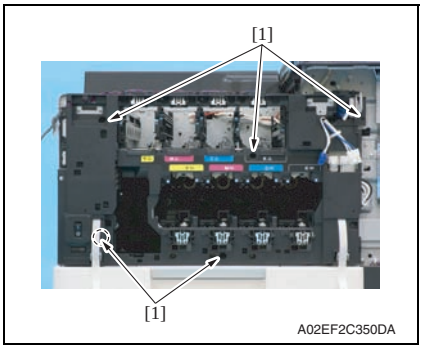
8. Remove the screw [1], and remove the connector protective cover [2].



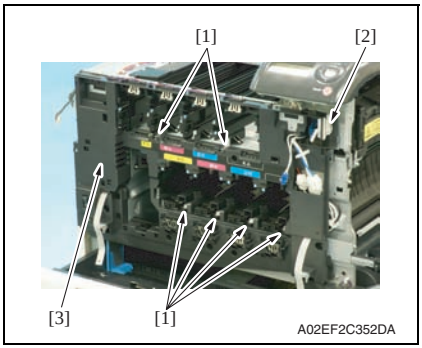
9. Disconnect three connectors [1], and remove the harness from the wire saddle [2].



10. Disconnect two connectors [1].



11. Remove five screws [1].



12. Unhook six tabs [1], and disconnect the connector [2] from the front cover.

13. Remove the front cover [3].

6.3.20 PH unit

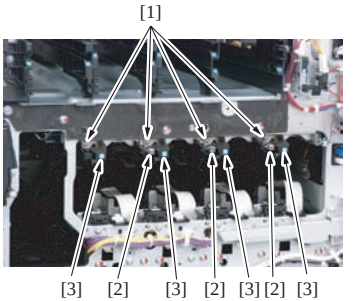
CAUTION
• **Do not replace the printer head unit while the power is ON. Laser beam generated during the above mentioned activity may cause blindness.**
• **Do not disassemble or adjust the printer head unit. Laser beam generated during the above mentioned activity may cause blindness.**

NOTE

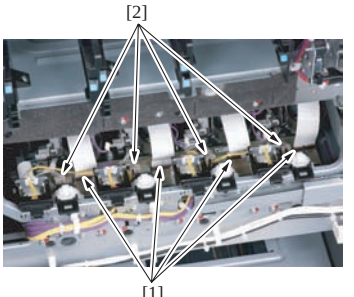
- **When replace the PH unit, replace 4-color PH units at the same time.**

A. Removal procedure

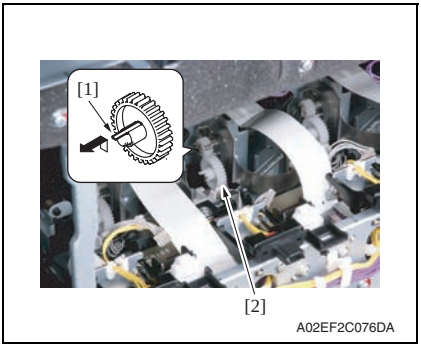
1. Remove the front cover.
See P.76
2. Remove the transfer belt unit.
See P.37



3. Remove four screws [1] and disconnect three connectors [2], and remove four imaging unit guide rails [3].



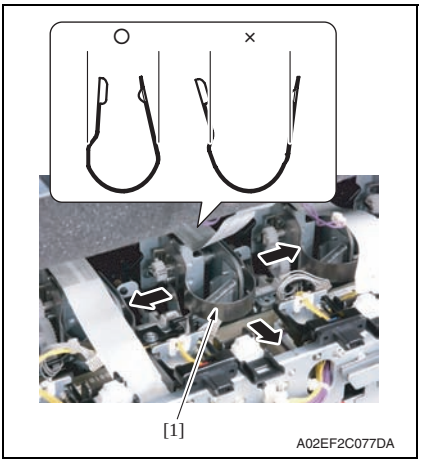
4. Disconnect four flat cables [1] and four connectors [2] of the PH unit.



5. Unhook the tab [1], and remove the gear [2] of the PH unit.

NOTE

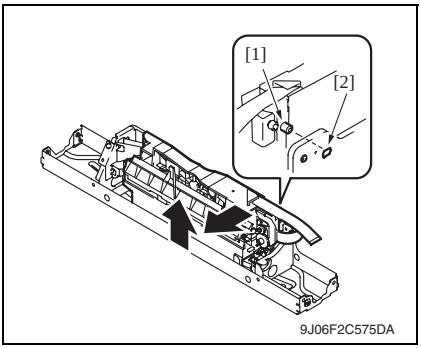
- **This step is not needed when removing PH unit (Black) that does not have a gear.**



6. Remove the stopper [1] of the PH unit.

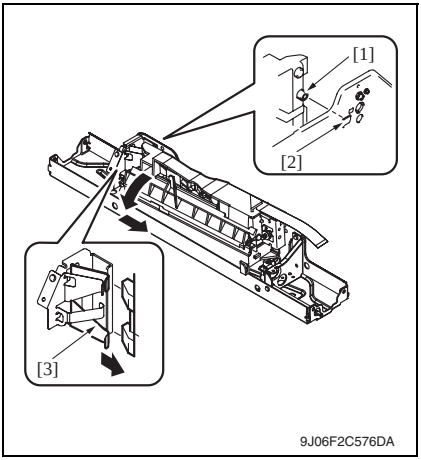
NOTE

- **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.



7. Remove the PH unit.

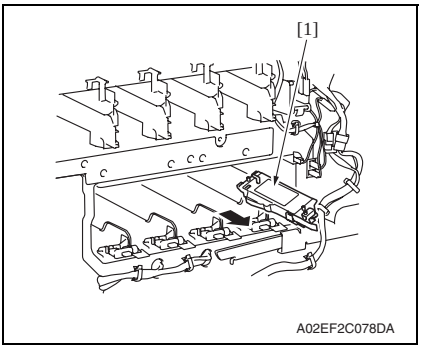
Move the front side of the PH unit to left a little, and remove the boss [1] from the locating hole [2].
Lift up the front side of the PH unit a little.



Remove the boss [1] at the rear side of the PH unit from the locating hole [2].

NOTE

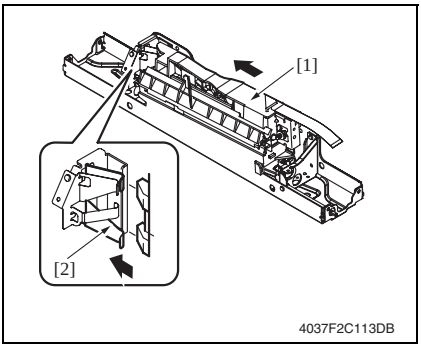
- **Since the back of the PH unit is pushed to the right with the two plate springs [3], remove it by tilting the backside of the PH unit to the left as shown in the left illustration.**



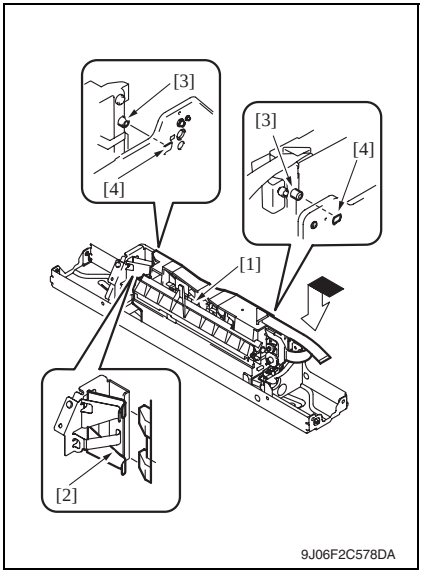
Remove the PH unit [1].

8. Follow the same procedures to remove all PH units.

B. Reinstall procedure

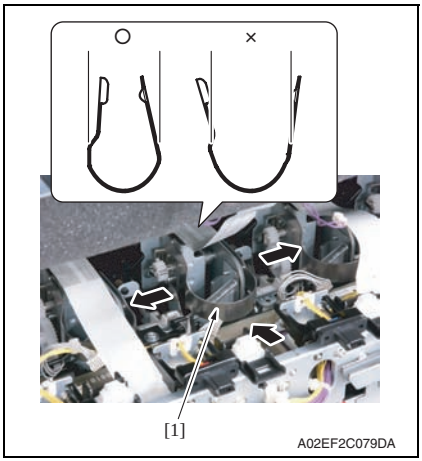


1. Fit the back of the PH unit [1] into the plate spring [2] of installation plate.



2. Push the PH unit [1] along the right side line of PH unit installation plate all the way and fit it into the plate spring [2].

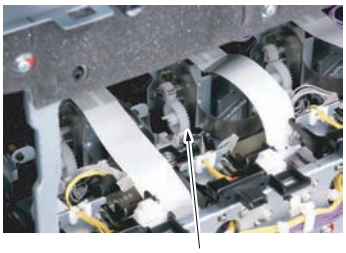
3. Make sure that the two bosses [3] at front and rear side of the PH unit fit in the locating hole [4].



4. Reinstall the stopper [1].

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.



5. Reinstall the gear [1].

NOTE

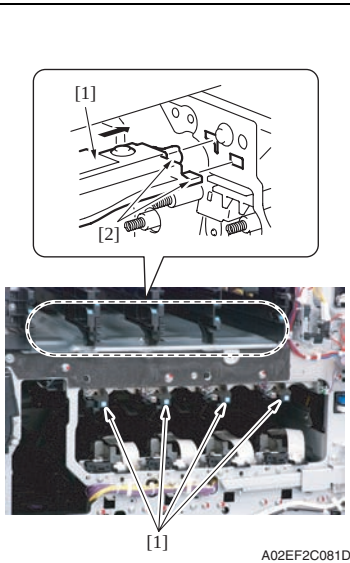
- **Make sure that the gear claw is fit in.**

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.



8. Install the imaging unit guide rails [1].

NOTE

- **Make sure that the two claws [2] at rear end of the rail are fit in the locating hole on the main unit.**

9. Reinstall the Image transfer belt unit.

10. Reinstall the front cover.

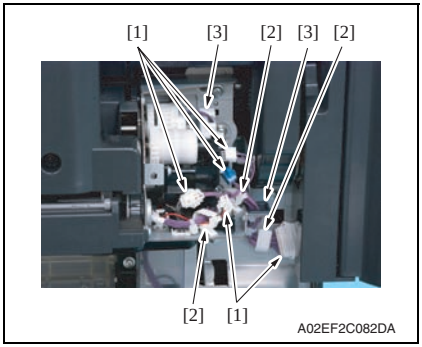
11. Make skew adjustment of the PH unit.
See P.271

NOTE

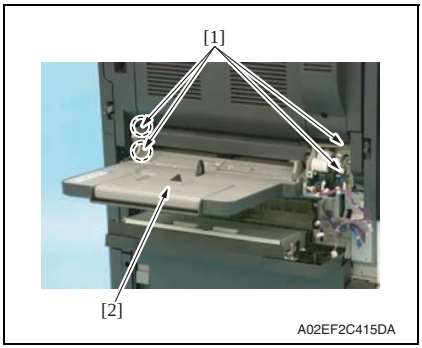
- When replacing the PH unit, make sure to conduct PH unit skew adjustment.

6.3.21 Paper feed tray 1 unit

1. Open the vertical transport door.
2. Remove the rear right cover/2.
See P.73
3. Remove the paper feed tray 1 front cover and the paper feed tray 1 rear cover.
See P.72



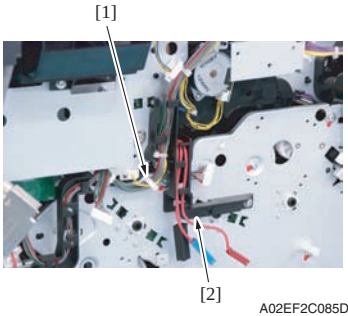
4. Disconnect five connectors [1], and remove the harness from the three wire saddles [2] and two edge covers [3].



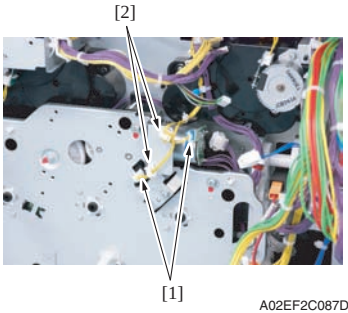
5. Remove four screws [1], and remove the paper feed tray 1 unit [2].

6.3.22 Main drive unit

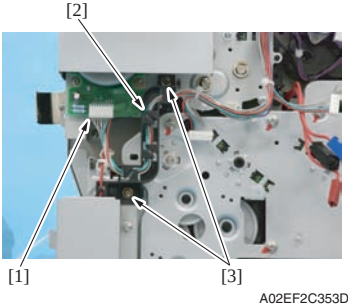
1. Remove the transfer belt unit.
See P.37
2. Remove the high voltage unit.
See P.105
3. Remove the Color PC motor.
See P.111
4. Remove the transport motor.
See P.111



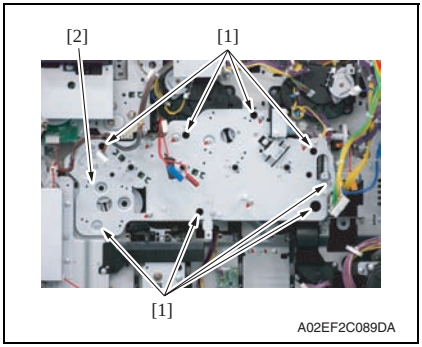
5. Remove the harness from the wire saddle [1] and the harness cover [2].



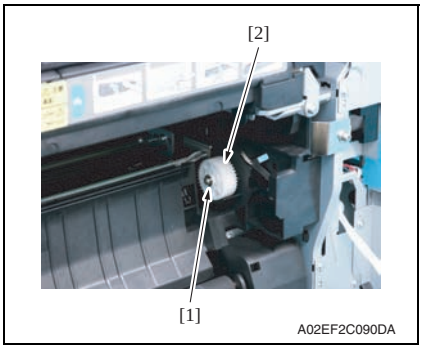
6. Disconnect two connectors [1], and remove the harness from two wire saddles [2].



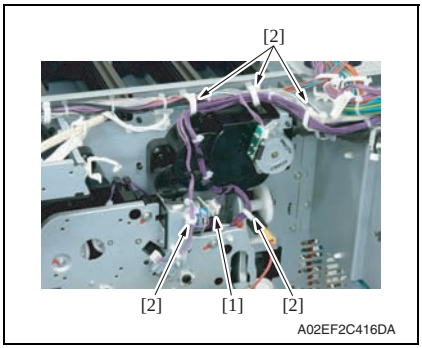
7. Disconnect the connector [1], and remove the harness from the harness guide [2].
8. Remove two screws [3], and remove the harness guide [2].



9. Remove eight screws [1], and slide out the main drive unit [2].



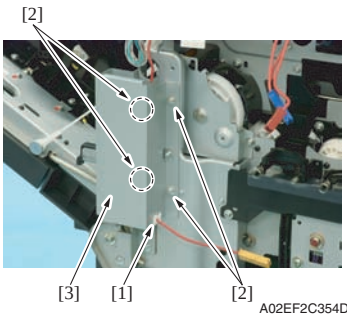
10. Remove the E-ring [1], and remove the gear [2].



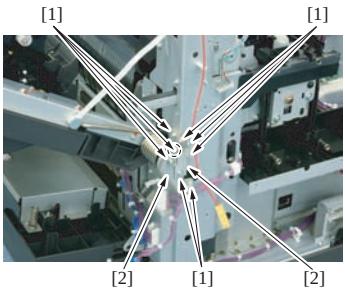
11. Disconnect the connector [1], and remove the harness from five wire saddles [2].
12. Remove the main drive unit.

6.3.23 Transport drive unit

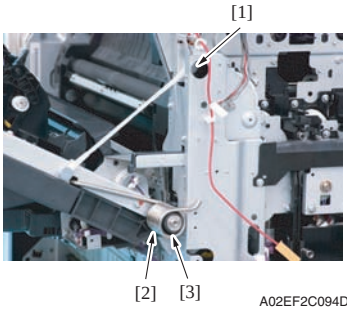
1. Remove the paper feed tray 1 tray unit.
See P.83
2. Remove the main drive unit.
See P.84
3. Remove the lower rear cover/1 and the lower rear cover/2.
See P.73



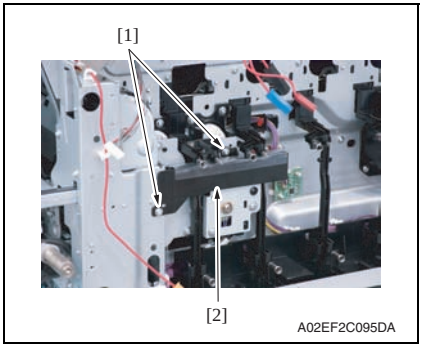
4. Remove the harness from the edge cover [1].
5. Remove four screws [2], and remove the metal plate [3].



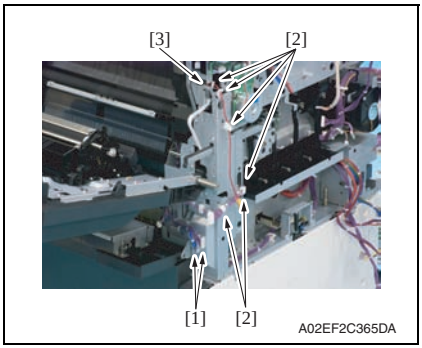
6. Close the right door.
7. Remove eight screws [1], and remove two reinforcement plates [2] of the right door.



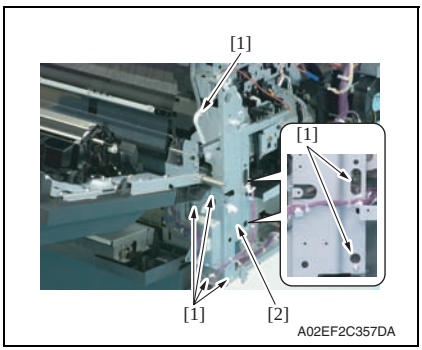
8. Remove the shoulder screw [1], the spring [2] and the collar [3].



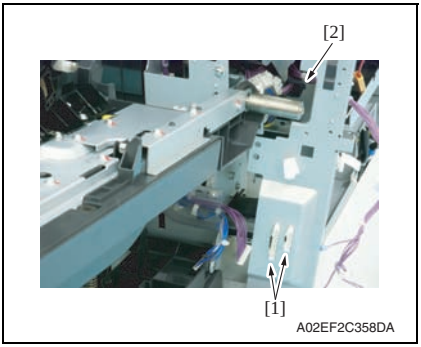
9. Remove two screws [1], and remove the rear handle cover [2].



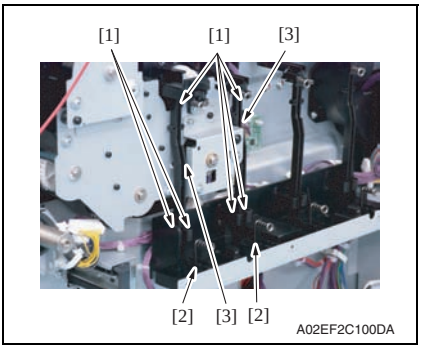
10. Disconnect two connectors [1], and remove the harness from six wire saddles [2] and the edge cover [3].



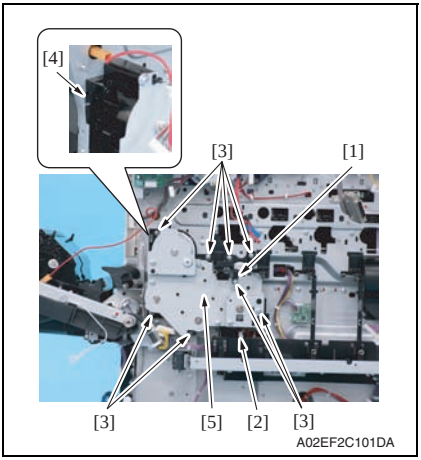
11. Remove seven screws [1], and remove the rear handle assy [2].



12. Disconnect two connectors [1], and remove the harness from the edge cover [2].



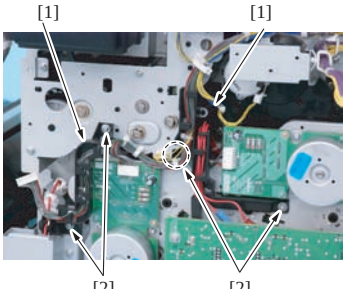
13. Remove each six tabs [1] and two hooks [2].
14. Remove two wire guides [3].



15. Remove the wire guide [1] and eight screws [3], and disconnect the connector [2].
16. Unhook the tab [4], and remove the transport drive unit [5].

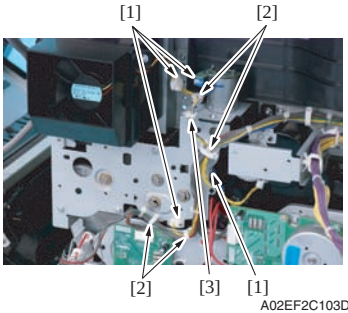
6.3.24 Fusing drive unit

1. Remove the transfer belt unit.
See P.37
2. Remove the fusing unit.
See P.40
3. Remove the fusing motor.
See P.112



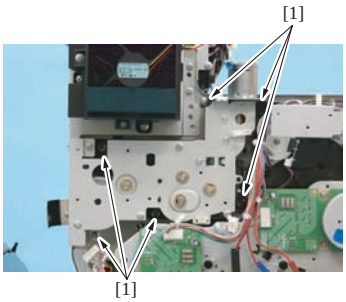
A02EF2C102DA

4. Remove the harness from two harness guides [1].
5. Remove four screws [2], and remove the harness guide [1].



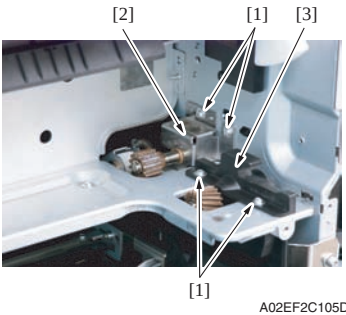
A02EF2C103DA

6. Disconnect four connectors [1], and remove the harness from four wire saddles [2].
7. Remove the harness from the edge cover [3].

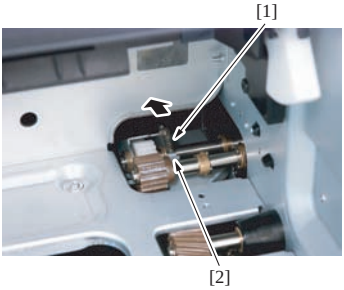


A02EF2C359DA

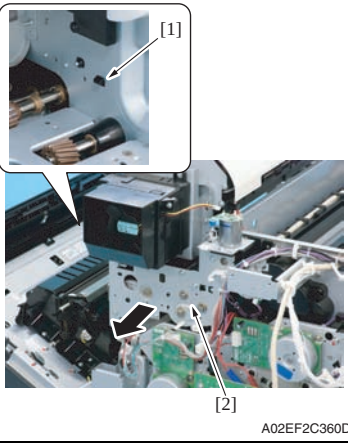
8. Remove six screws [1] of the fusing drive unit.



9. Remove four screws [1], and remove the fusing rear guide [2] and the shaft cover [3].



10. Remove the spring [1] from the protrusion [2].

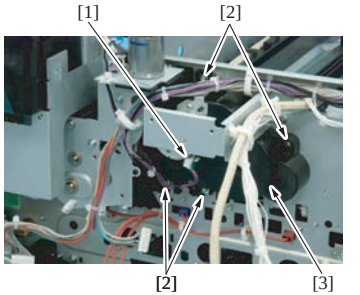


11. Unhook the tab [1].
Pull the fusing drive unit [2] to the front and remove it.

6.3.25 Hopper drive unit (C/K, Y/M)

A. Hopper drive unit (C/K)

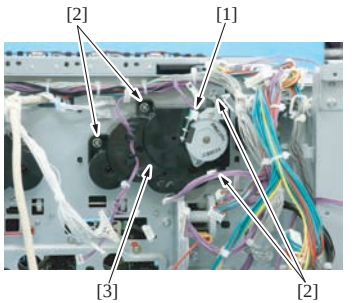
1. Remove the main drive unit.
See P.84



2. Disconnect the connector [1].
3. Remove four screws [2], and remove the hopper drive unit (C/K) [3].

B. Hopper drive unit (Y/M)

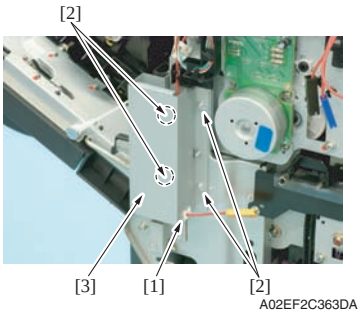
1. Remove the main drive unit.
See P.84



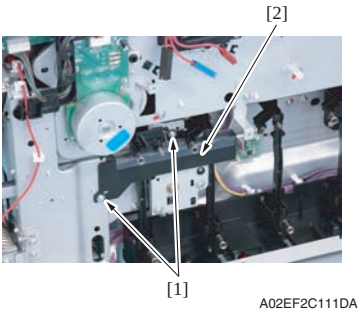
2. Disconnect the connector [1].
3. Remove four screws [2], and remove the hopper drive unit (Y/M) [3].

6.3.26 Right door assy

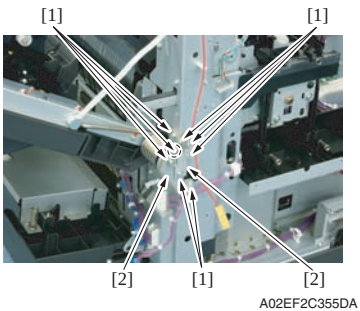
1. Remove the lower rear cover/1 and the lower rear cover/2.
See P.73
2. Remove the paper feed tray 1 unit.
See P.83
3. Remove the high voltage unit.
See P.105
4. Slide out the paper feed tray 2.
5. Remove the right front cover/2.
See P.67



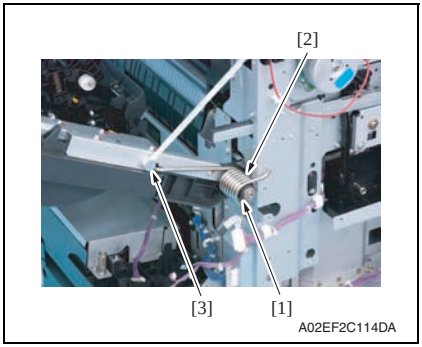
6. Remove the harness from the edge cover [1].
7. Remove four screws [2], and remove the metal plate [3].



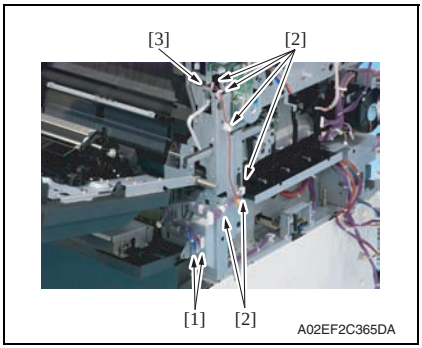
8. Remove two screws [1], and remove the rear handle cover [2].



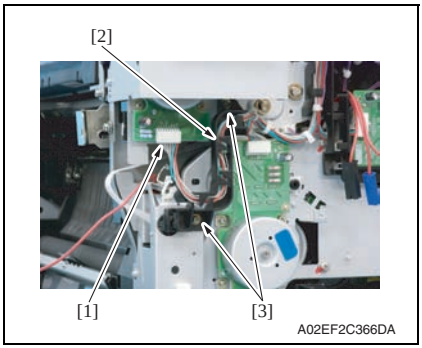
9. Remove eight screws [1], and remove two reinforcement plates [2] of the right door.



10. Open the right door, and remove the collar [1], the spring [2] and the shoulder screw [3].

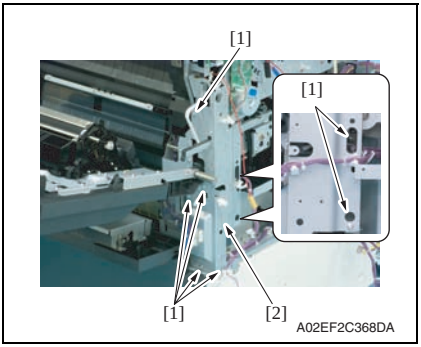


11. Disconnect two connectors [1], and remove the harness from six wire saddles [2] and the edge cover [3].

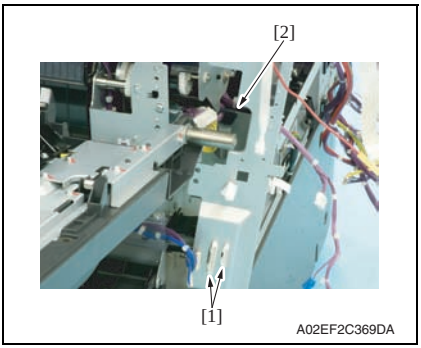


12. Disconnect the connector [1], and remove the harness from the harness guide [2].

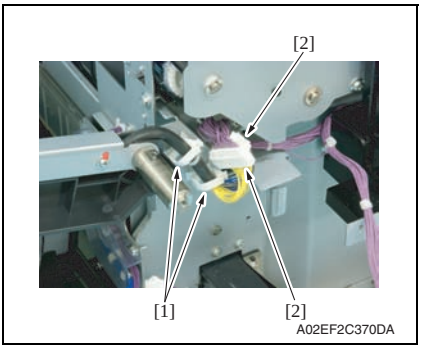
13. Remove two screws [3], and remove the harness guide [2].



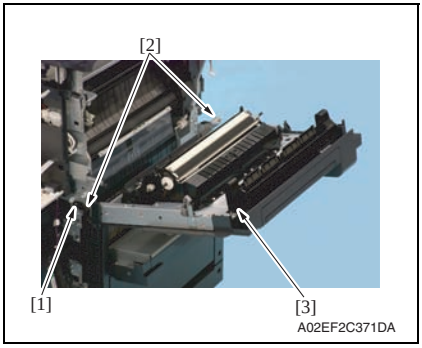
14. Remove seven screws [1] and remove the rear handle assy [2].



15. Disconnect two connectors [1], and remove the harness from the edge cover [2].



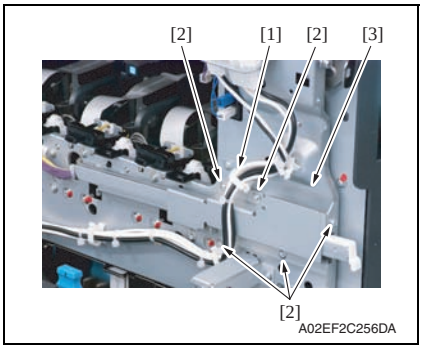
16. Remove two wire saddles [1] and two connectors [2].



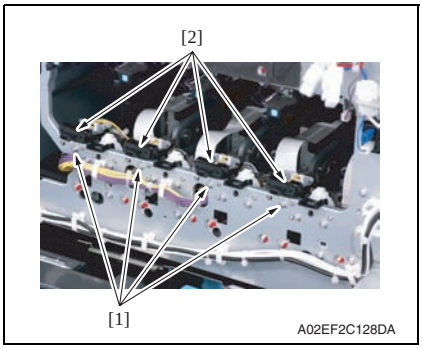
17. Remove the screw [1], and remove two shafts [2].
18. Remove the right door assy [3].

6.3.27 PH relay board (PHREYB)

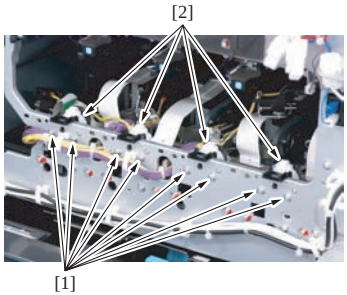
1. Remove the front cover.
See P.76
2. Remove the transfer belt unit.
See P.37



3. Remove the harness from the wire saddle [1].
4. Remove five screws [2], and remove the front handle assy [3].

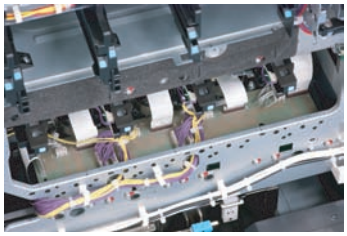


5. Remove the screw [1] each, and remove the imaging unit contact assy [2] of each color.



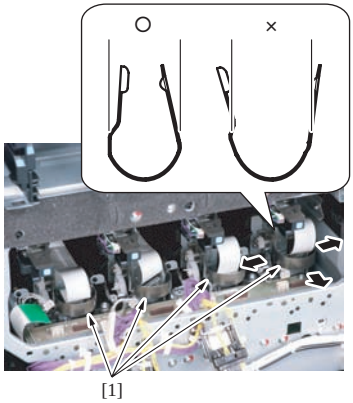
A02EF2C129DA

6. Remove two screws [1] each, and remove the imaging unit roll assy [2] of each color.



A02EF2C130DA

7. Remove all the connectors and the flat cables on the PH relay board.

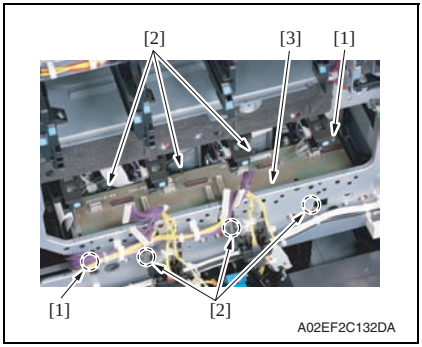


A02EF2C131DA

8. Remove the stopper [1] of the PH unit.

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.



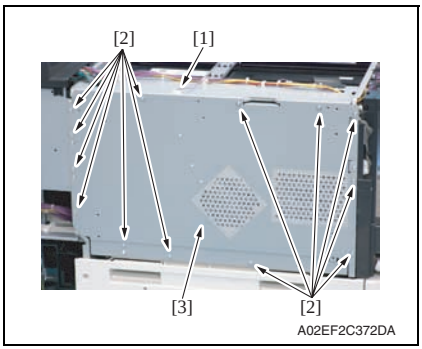
9. Remove two screws [1] and six tabs [2], and remove the PH relay board [3].

6.3.28 DC power supply (DCPU)

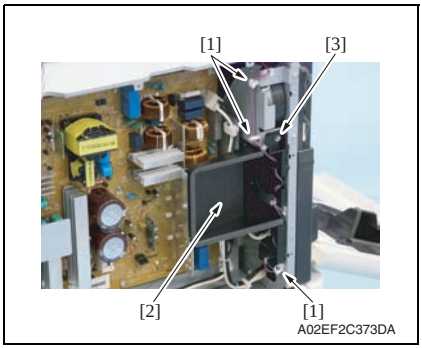
⚠ CAUTION

- **Remove the DC power supply after six minutes or more have passed since the power plug was disconnected.**

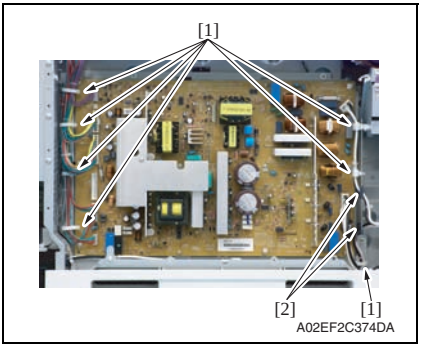
1. Remove the left cover.
See P.69
2. Remove the rear left cover.
See P.70



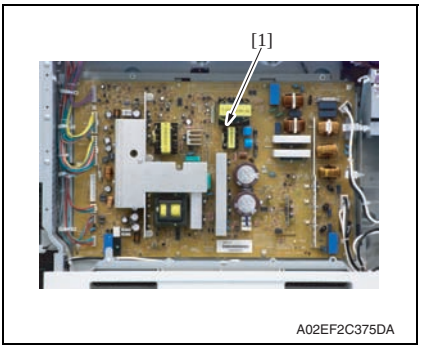
3. Disconnect the connector [1].
4. Remove thirteen screws [2], and remove the DC power supply protective shield [3].



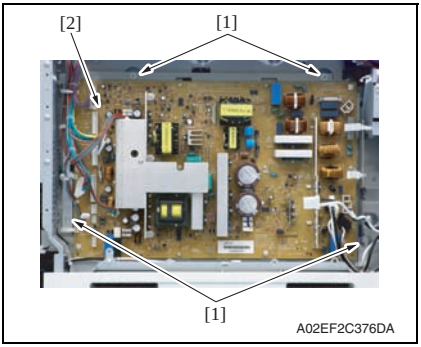
5. Remove the harness from three wire saddles [1].
6. Remove the harness from the cover [2].
7. Remove the screw [3], and remove the cover [4].



8. Remove the harness from seven wire saddles [1] and two edge covers [2].



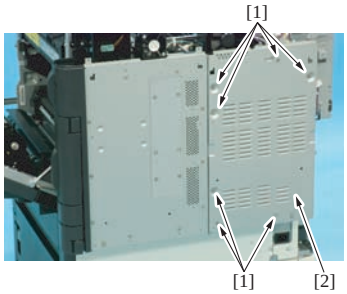
9. Remove all the connectors on the DC power supply [1].



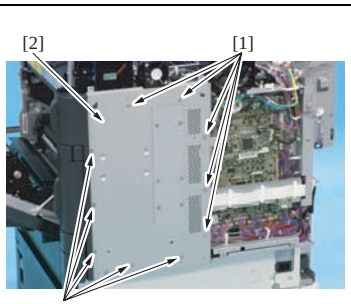
10. Remove four screws [1], and remove the DC power supply [2].

6.3.29 Printer control board (PRCB)

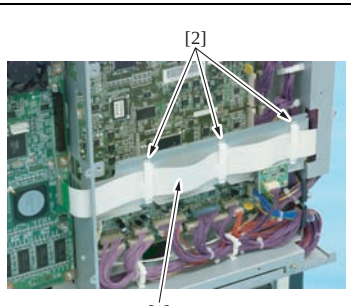
1. Open the front door.
2. Remove the rear left cover.
See P.70
3. Remove the upper rear cover.
See P.72



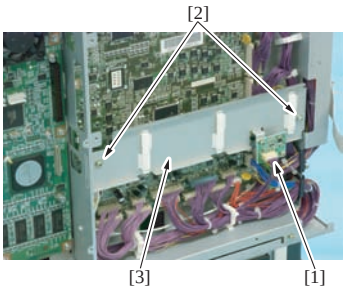
4. Remove seven screws [1], and remove the protective shield/2 [2].



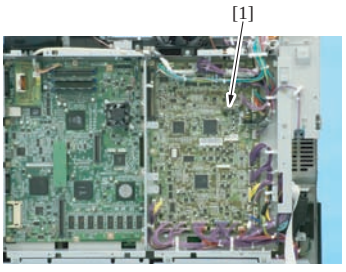
5. Remove ten screws [1], and remove the protective shield/1 [2].



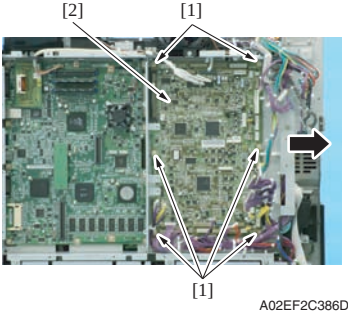
6. Disconnect the flat cable [1].
7. Remove the flat cable [1] from three cable holders [2] and get the flat cable out of the way.



8. Disconnect the connector [1], remove two screws [2], and remove the metal plate [3].



9. Remove all the connectors on the printer control board [1].



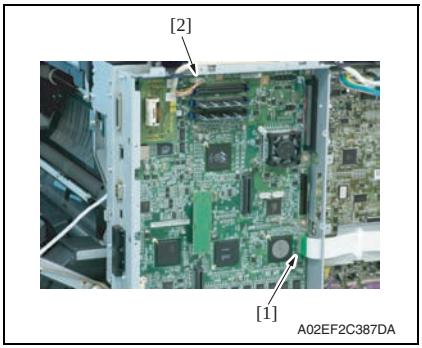
10. Remove six screws [1]. Slide the printer control board [2] in the direction of the arrow and remove it.

NOTE

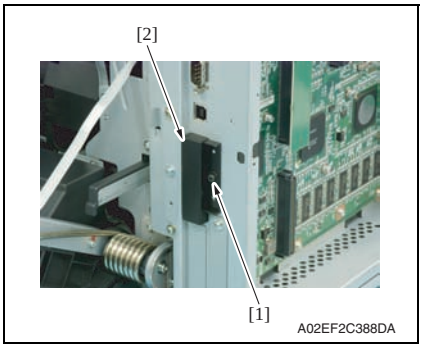
- **When the printer control board is to be replaced, rewriting the firmware to the latest one.**

6.3.30 MFP board (MFPB)

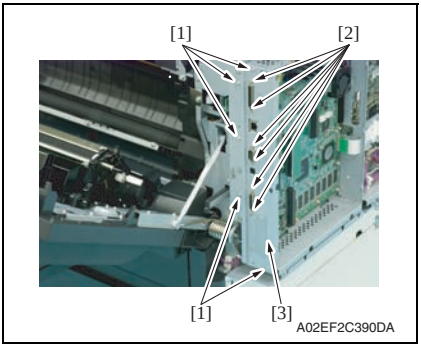
1. Remove the rear left cover.
See P.70
2. Remove the upper rear cover.
See P.72
3. Remove the protective shield/1 and the protective shield/2.
See the steps 1 to 5 of printer control board removing procedure.
See P.99
4. Remove the rear right cover/1 and the rear right cover/2.
See P.71
5. Remove the NVRAM board.
See P.109
6. Remove the JMP board.
See P.108
7. Remove the SO DIMM/1, SO DIMM/2.
See P.108



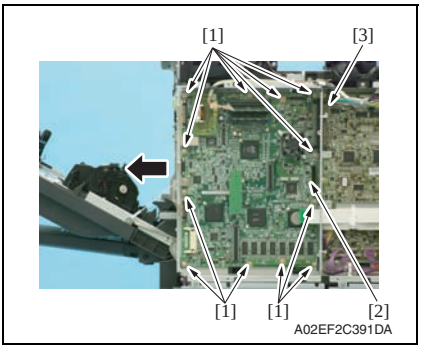
8. Disconnect the flat cable [1],and remove the connector [2].



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



10. Remove five screws [1] and six bolts [2], and remove the metal plate [3].



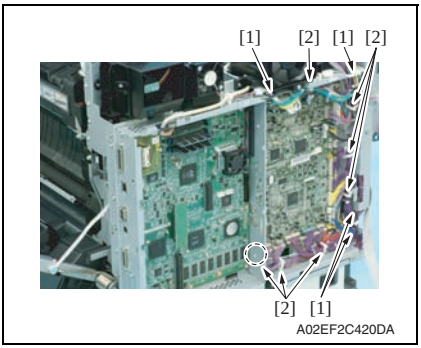
11. Remove twelve screws [1] of the MFP board.
12. Slide the MFP board [2] in the direction of the arrow, disconnect the connector [3], and remove the MFP board.

NOTE

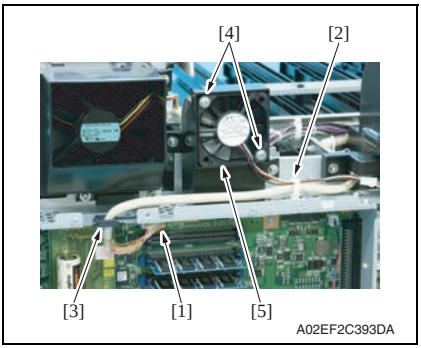
- **When the MFP board is to be replaced, rewriting the firmware to the latest one.**

6.3.31 PWB box

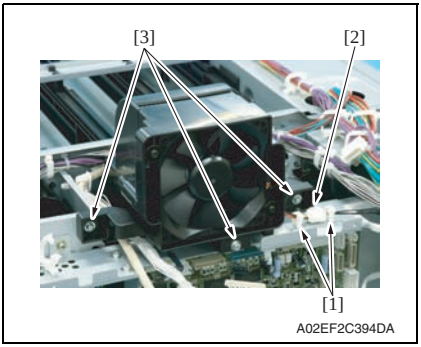
1. Remove the rear left cover.
See P.70
2. Remove the upper rear cover.
See P.72
3. Remove the rear right cover/1 and the rear right cover/2.
See P.71
4. Remove the lower rear cover/1 and the lower rear cover/2.
See P.73



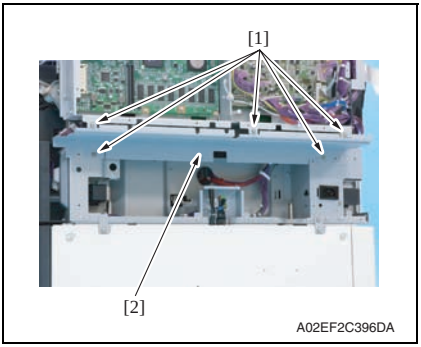
5. Remove the harness from five edge covers [1] and seven wire saddles [2].



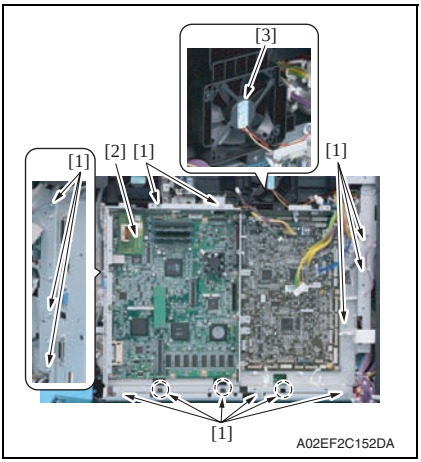
6. Disconnect the connector [1], and remove the harness from the wire saddle [2] and the edge cover [3].
7. Remove two screws [4], and remove the MFP board cooling fan motor [5].



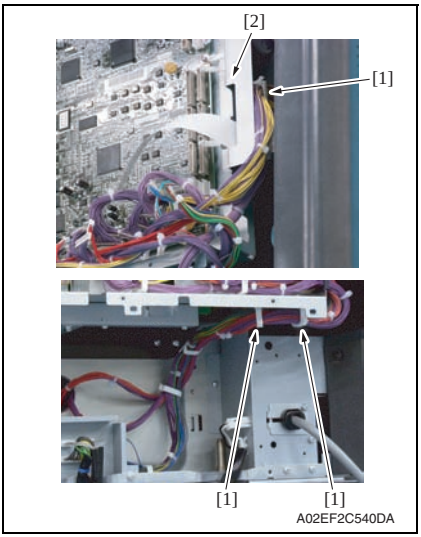
8. Remove the harness from two wire saddles [1], and disconnect the connector [2].
9. Remove three screws [3] of the cooling fan motor/2.



10. Remove five screws [1], and remove the metal plate [2].



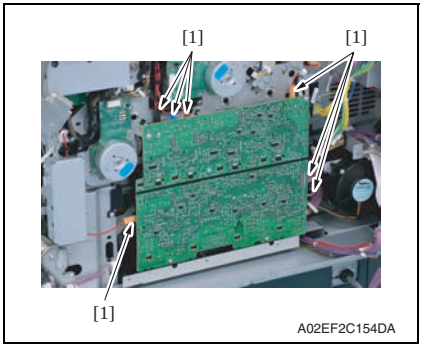
11. Remove eleven screws [1]. While raising the PWB box [2] a little, slide it to the left. Then, remove the cooling fan motor/2 [3].



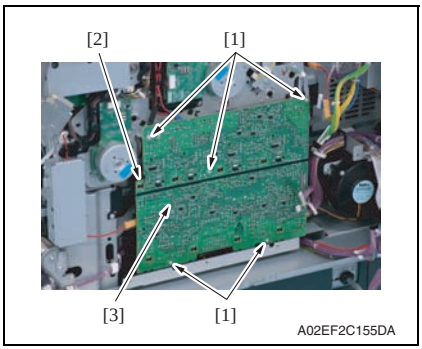
12. Remove the harness from the wire saddles [1], and remove the PWB box [2].

6.3.32 High voltage unit (HV)

1. Remove the PWB box
See P.103



2. Disconnect seven connectors [1].



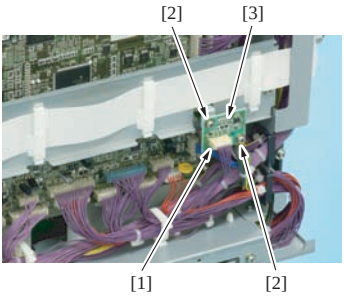
3. Remove five screws [1] and the tab [2], and remove the high voltage unit [3].

NOTE

- **When reinstalling the high voltage unit, make sure that the terminal end surely contacts.**

6.3.33 Service EEPROM board (SV ERB)

1. Remove the rear cover/1 and the rear cover/2
See P.73
2. Remove the protective shield/1 and the protective shield/2.
See the steps 1 to 5 of printer board removing procedure.
See P.99



3. Remove two screws [2] and the connector [1], and take out the service EEPROM board [3].

NOTE
After replacing the service EEPROM board, all parts shown below are required to be replaced with new ones.
- **Imaging unit Y/M/C/K**
- **Toner cartridge Y/M/C/K**
- **Image transfer belt unit**
- **Fusing unit**

NOTE
- **When Service EEPROM is replaced, data of all adjustment settings stored in EEPROM disappear and the adjustment settings are returned to the default ones. After replacing the service EEPROM board, take the following steps to make readjustments.**

4. Turn ON the power switch.
5. Enter the service mode. Perform the adjustments and settings shown in the following table in the listed. The readjusting and resetting work needs to be based on the machine maintenance list and adjustment lists that were output at the time of main body installation and maintenance visits.

NOTE
- **At this time, a front door must be an open state.**

Order	Items that require readjustment in the Service mode			Ref. page
1	MachineAdjustment	Color Reg.	Cyan	P.233
2			Magenta	
3			Yellow	
4	ProcessAdjustment	TCR Level Setting		P.236
5		Background Margin		P.237
6		Dmax Density		P.236
7		Bias Choice		P.239

Order	Items that require readjustment in the Service mode		Ref. page
8	System Settings	Change WarmupTime	P.217
9	MachineAdjustment	Exhaust Fan Delay	P.235
10	System Settings	Unit Replacement	P.211
11		IU Yield Setting	P.216

NOTE

- **After replacing the service EEPROM board, be sure to make the above listed adjustments before the first warm-up is made.**

6. Turn OFF the power switch.

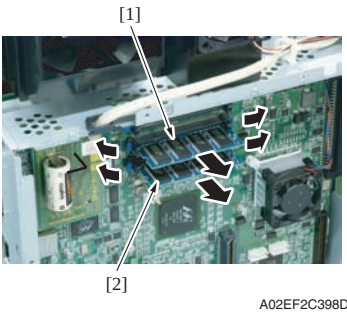
7. Close the front door and turn ON the power switch.
Check to see that warm-up and image stabilization operations are completed normally.

8. Enter the Service mode again. Make individual adjustments shown in the following table in the order listed, using the machine management list and the adjustment lists that were output at the time of main body installation and maintenance.

Order	Items that require readjustment in the Service mode			Ref. page
1	MachineAdjustment	LD Adjust	LD Light balance	P.234
2		1st Tray Adjust		P.235
3		Printer Resist Loop		P.232
4		FusingTemperature		P.225
5	Finisher Adjust	CB-FN Adjust	Half-Fold Pos.	P.240
6			Punch Reg. Loop	
7			PunchStopPosition	
8	MachineAdjustment	Printer Area	Vertical Adj.	P.227
9		Fusing Speed		P.226
10		Printer Area	Centering	P.228
11			Centering(Duplex)	P.230
12			Leading Edge Adj.	P.227
13			Leading(Duplex)	P.229
14	ProcessAdjustment	TransferOutputAdj	2nd Transfer	P.238
15			1st Transfer	P.237

6.3.34 SODIMM/1, SODIMM/2

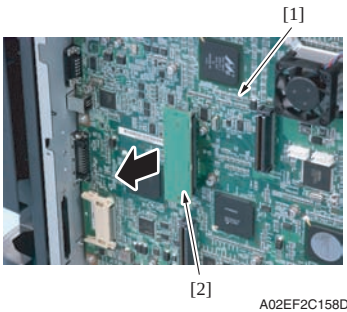
1. Remove the protective shield/1 and the protective shield/2.
See the steps 1 to 5 of printer control board removing procedure.
See P.99



2. Remove the SODIMM/1 [1] and SODIMM/2 [2] on the MFP board.

6.3.35 JMP board (JMPB)

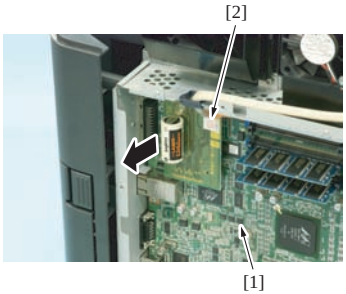
1. Remove the protective shield/1 and the protective shield/2.
See the steps 1 to 5 of printer control board removing procedure.
See P.99



2. Remove the JMP board [2] on the MFP board [1].

6.3.36 NVRAM board (NRB)

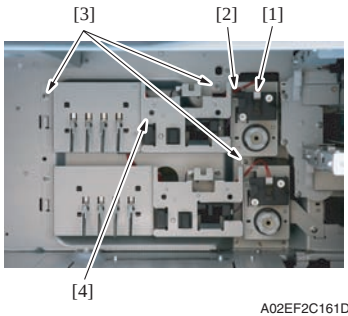
1. Remove the protective shield/1 and the protective shield/2.
See the steps 1 to 5 of printer control board removing procedure.
See P.99



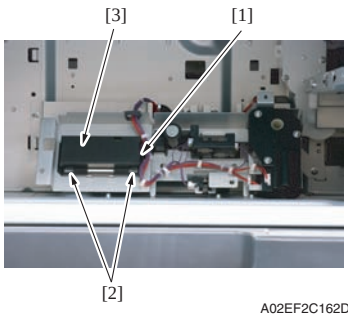
2. Remove the NVRAM board [2] on the MFP board [1].

6.3.37 Paper feed tray 2 paper FD size detect board (PSDTB/1)

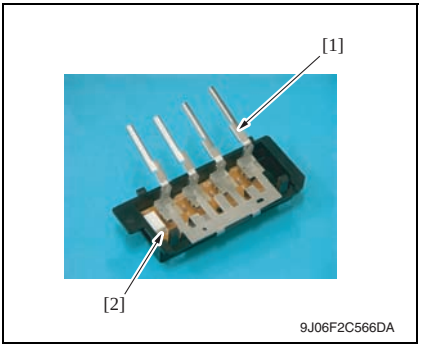
1. Remove the paper feed tray 2.
See P.75
2. Remove the paper feed tray 3.
See P.75



3. Disconnect the connector [1], and remove the harness from the edge cover [2].
4. Remove three screws [3], take out the paper feed tray 2 lift-up motor assy [4] and turn it around.



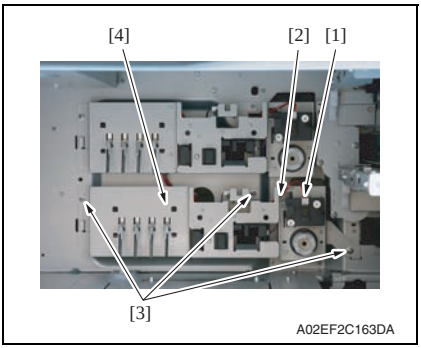
5. Disconnect the connector [1].
6. Unhook two tabs [2] and remove the paper feed tray 2 paper FD size detect board assy [3].



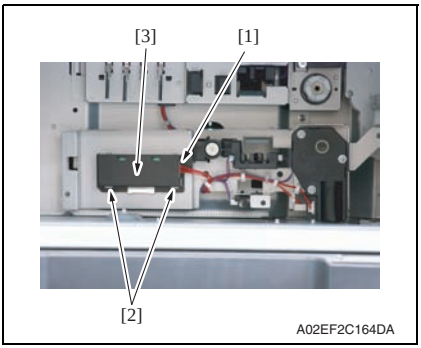
7. Remove the lever [1], and remove the paper feed tray 2 paper FD size detect board [2].

6.3.38 Paper feed tray 3 paper FD size detect board (PSDTB/2)

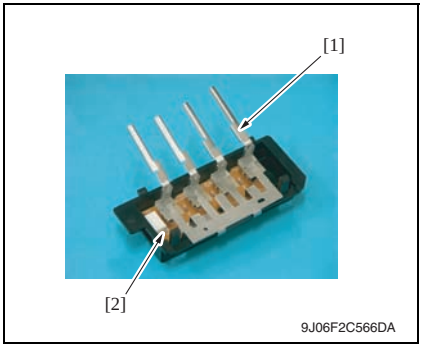
1. Remove the paper feed tray 2.
See P.75
2. Remove the paper feed tray 3.
See P.75



3. Disconnect the connector [1], and remove the harness from the edge cover [2].
4. Remove three screws [3], take out the paper feed tray 3 lift-up motor assy [4] and turn it around.



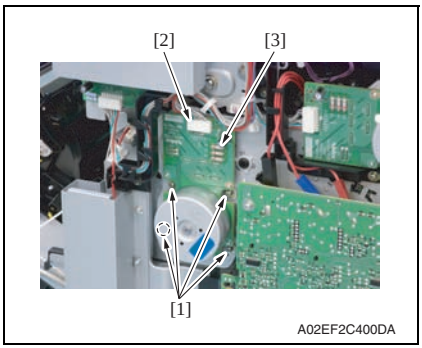
5. Disconnect the connector [1].
6. Unhook two tabs [2] and remove the paper feed tray 3 paper FD size detect board assy [3].



7. Remove the lever [1], and remove the paper feed tray 3 paper FD size detect board [2].

6.3.39 Transport motor (M1)

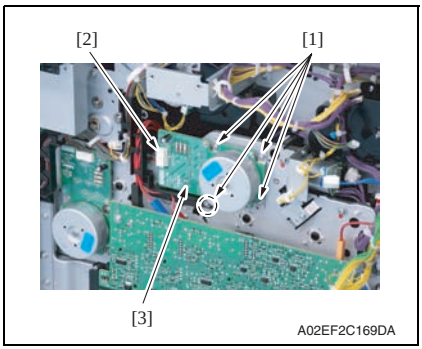
1. Remove the PWB box.
See P.103



2. Remove four screws [1], disconnect the connector [2], and remove the transport motor [3].

6.3.40 Color PC motor (M2)

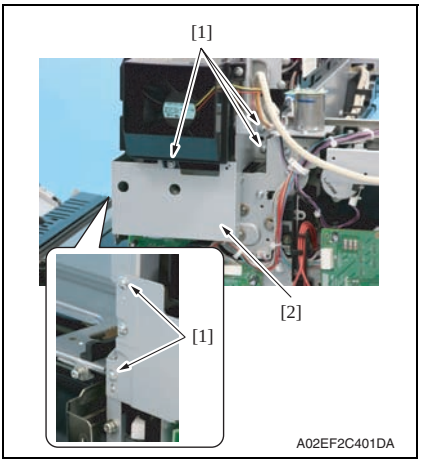
1. Remove the PWB box.
See P.103



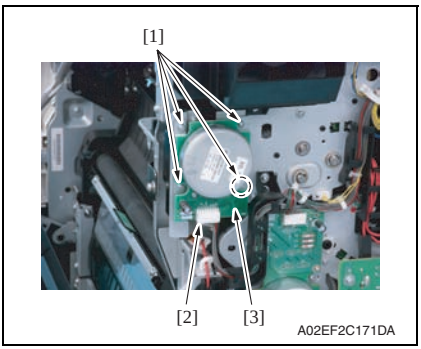
2. Remove four screws [1], disconnect the connector [2], and remove the color PC motor [3].

6.3.41 Fusing motor (M5)

1. Remove the PWB box.
See P.103



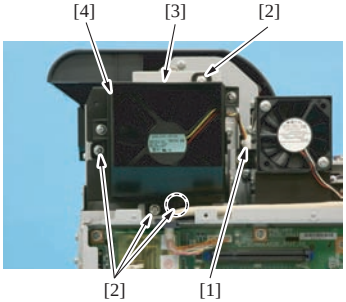
2. Remove five screws [1], and remove the bracket [2].



3. Remove four screws [1], disconnect the connector [2], and remove the fusing motor [3].

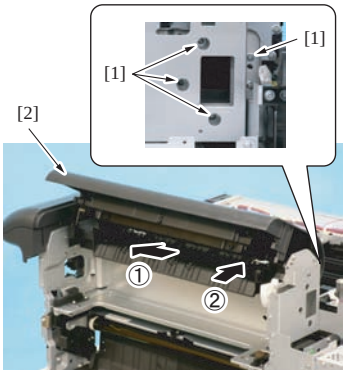
6.3.42 Switchback motor (M6)

1. Remove the upper rear cover.
See P.72
2. Remove the rear right cover/1.
See P.71
3. Remove the fusing drive unit.
See P.89



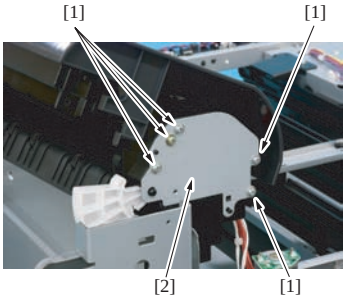
A02EF2C403DA

4. Disconnect the connector [1].
5. Remove four screws [2], unhook the tab [3], and remove the paper cooling fan motor assy [4].



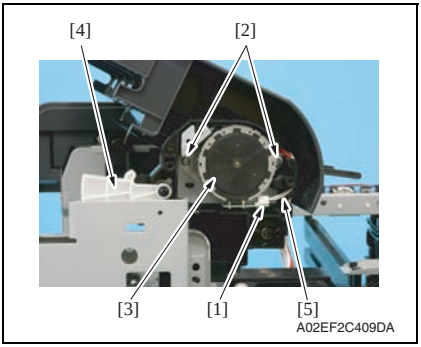
A02EF2C405DA

6. Remove four screws [1] and slide the paper exit section assy [2] in the direction of the arrow.



A02EF2C407DA

7. Remove five screws [1], and remove the metal plate [2].

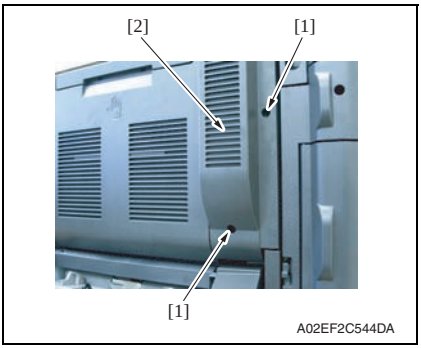


8. Disconnect the connector [1].
9. Remove two screws [2], and remove the switchback motor [3].

NOTE

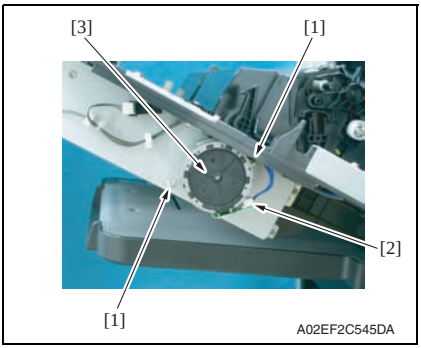
- **Care should be taken to avoid letting the lever [4] hit the housing and be damaged.**
- **Care should be taken to prevent the harness wires [5] from being pulled loose or pulled out of the connector.**

6.3.43 Duplex transport motor (M7)



1. Remove two screws [1] and the duplex cover [2].

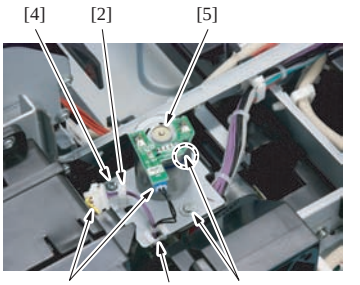
2. Open the right door.



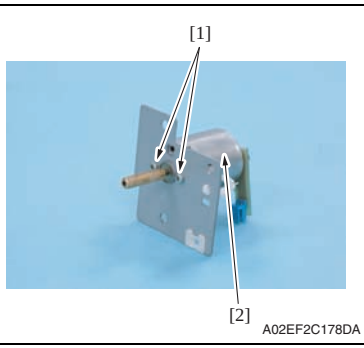
3. Remove two screws [1], disconnect the connector [2], and remove the duplex transport motor [3].

6.3.44 Fusing retraction motor (M12)

1. Remove the upper rear cover.
See P.72
2. Remove the protective shield/1 and the protective shield/2.
See the steps 1 to 5 of printer control board removing procedure.
See P.99



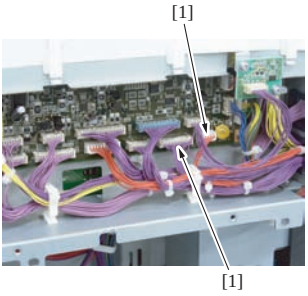
3. Disconnect two connectors [1].
4. Remove the harness from the wire saddle [2] and the edge cover [3].
5. Remove three screws [4] and remove the fusing retraction motor assy [5].



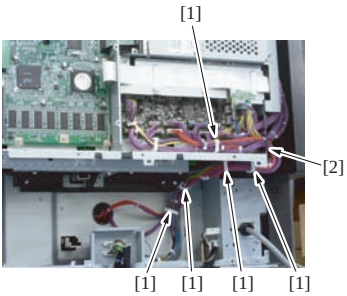
6. Remove two screws [1], and remove the fusing retraction motor [2].

6.3.45 Paper feed tray 2 lift-up motor (M8)

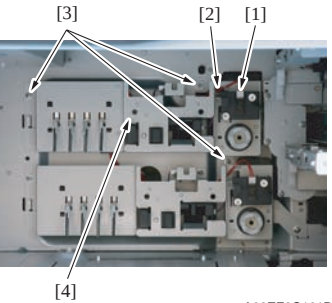
1. Remove the paper feed tray 2.
See P.75
2. Remove the paper feed tray 3.
See P.75
3. Remove the right front cover/2.
See P.67
4. Remove the lower rear cover/1 and the lower rear cover/2.
See P.73
5. Remove the protective shield/1 and the protective shield/2.
See the steps 1 to 5 of printer control board removing procedure.
See P.99



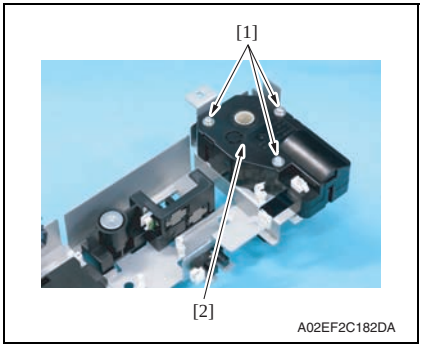
6. Disconnect two connectors (CN10, CN11) [1] on the printer control board.



7. Remove the harness from five wire saddles [1] and the edge cover [2].



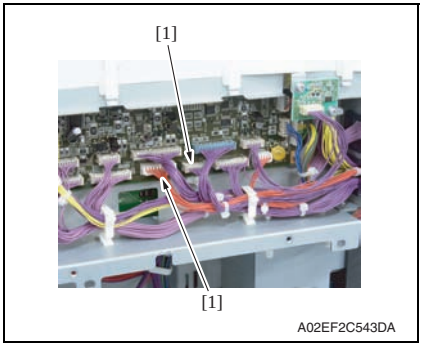
8. Disconnect the connector [1], and remove the harness from the edge cover [2].
9. Remove three screws [3], take out the paper feed tray 2 lift-up motor assy [4].



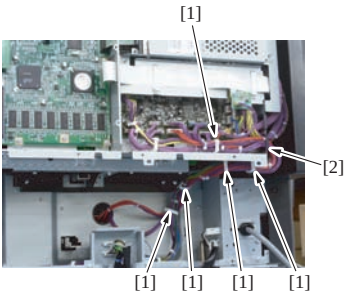
10. Remove three screws [1], and remove the paper feed tray 2 lift-up motor [2].

6.3.46 Paper feed tray 3 lift-up motor (M9)

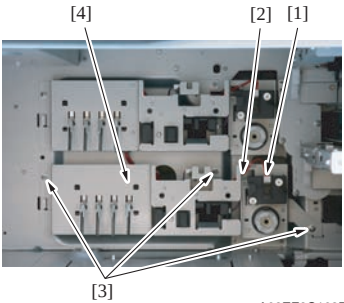
1. Remove the paper feed tray 2.
See P.75
2. Remove the paper feed tray 3.
See P.75
3. Remove the right front cover/2.
See P.67
4. Remove the lower rear cover/1 and the lower rear cover/2.
See P.73
5. Remove the protective shield/1 and the protective shield/2.
See the steps 1 to 5 of printer control board removing procedure.
See P.99



6. Disconnect two connectors (CN7, CN8) [1] on the printer control board

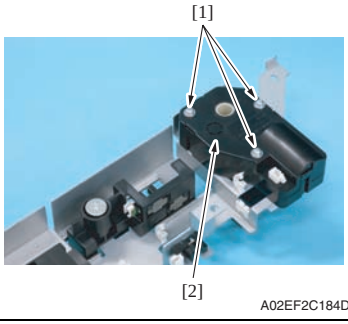


7. Remove the harness from five wire saddles [1] and the edge cover [2].



8. Disconnect the connector [1], and remove the harness from the edge cover [2].

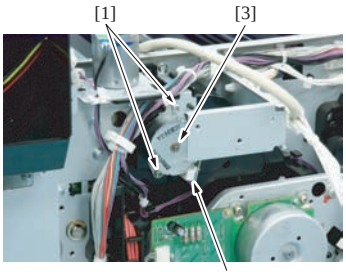
9. Remove three screws [3], take out the paper feed tray 3 lift-up motor assy [4].



10. Remove three screws [1], and remove the paper feed tray 3 lift-up motor [2].

6.3.47 Toner supply motor/CK (M3)

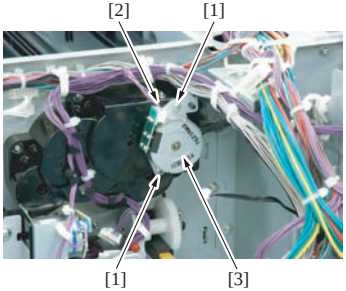
1. Remove the PWB box.
See P.103



2. Disconnect the connector [2], remove two screws [1], and remove the toner supply motor/CK [3].

6.3.48 Toner supply motor/YM (M4)

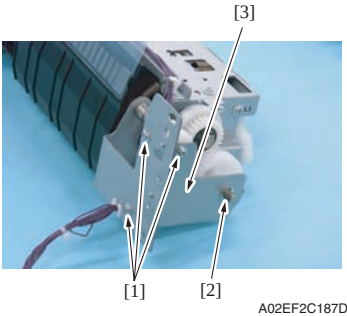
1. Remove the PWB box.
See P.103



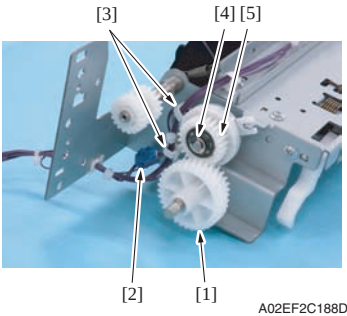
2. Disconnect the connector [2], remove two screws [1], and remove the toner supply motor/YM [3].

6.3.49 Paper feed tray 1 paper feed clutch (CL1)

1. Remove the paper feed tray 2 paper feed assy.
See the steps 1 to 4 of paper feed tray 2 feed roller/paper feed tray 2 pick-up roller removing procedure.
See P.18



2. Remove three screws [1] and the E-ring [2], and remove the metal plate [3].



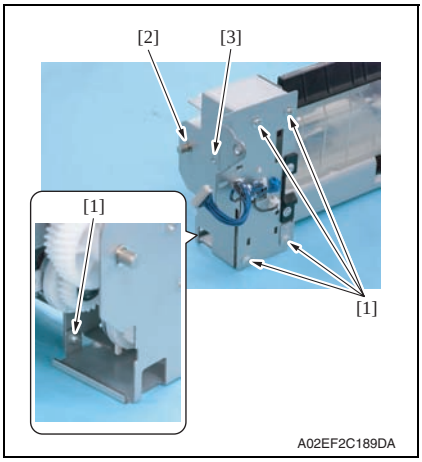
3. Remove the gear [1].
4. Disconnect the connector [2], and remove the harness from the wire saddles [3].
5. Remove the E-ring [4], and remove the paper feed tray 2 paper feed clutch [5].

NOTE

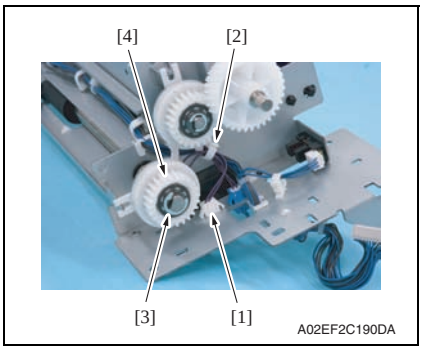
- **When mounting the paper feed tray 2 paper feed clutch [5], set the convex part of the stopper into the concave part of the paper feed tray 2 paper feed clutch.**

6.3.50 Paper feed tray 3 vertical transport clutch (CL3)

1. Remove the paper feed tray 3 paper feed assy.
See the steps 1 to 5 of paper feed tray 3 feed roller/paper feed tray 3 pick-up roller removing procedure.
See P.22



2. Remove five screws [1] and the E-ring [2], and remove the metal plate [3].



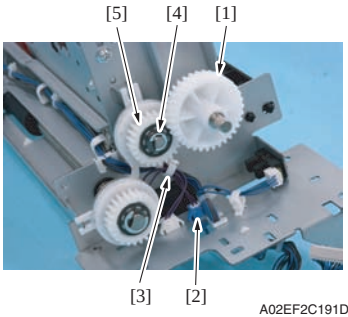
3. Disconnect the connector [1], and remove the harness from the wire saddle [2].
4. Remove the E-ring [3], and remove the paper feed tray 3 vertical transport clutch [4].

NOTE

- **When mounting the paper feed tray 3 vertical transport clutch [4], set the convex part of the stopper into the concave part of the paper feed tray 3 vertical transport clutch.**

6.3.51 Paper feed tray 3 paper feed clutch (CL2)

1. Remove the tray 3 paper feed assy.
See the steps 1 to 5 of paper feed tray 3 feed roller/paper feed tray 3 pick-up roller removing procedure.
See P.22



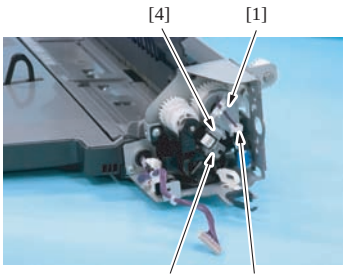
2. Remove the gear [1].
3. Disconnect the connector [2], and remove the harness from the wire saddle [3].
4. Remove the E-ring [4], and remove the paper feed tray 3 paper feed clutch [5].

NOTE

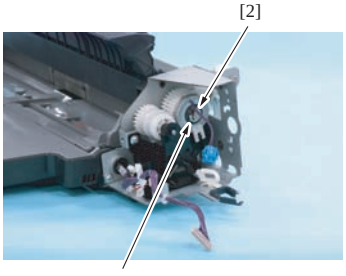
- **When mounting the paper feed tray 3 paper feed clutch [5], set the convex part of the stopper into the concave part of the paper feed tray 3 paper feed clutch.**

6.3.52 Paper feed tray 1 feed clutch (CL4)

1. Remove the paper feed tray 1 unit.
See P.83



2. Remove the harness from the edge cover [1] and the wire saddle [2], and remove the screw [3].
3. Remove the metal plate [4].



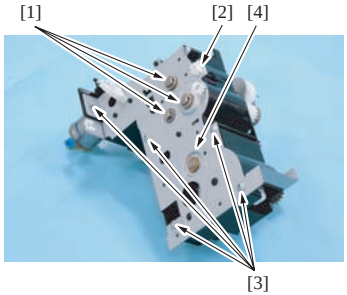
4. Remove the E-ring [1], and remove the paper feed tray 1 feed clutch [2].

NOTE

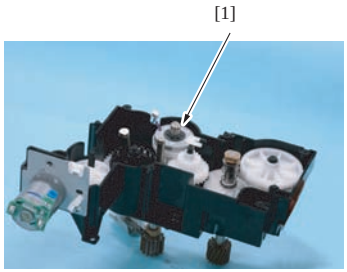
- **When mounting the paper feed tray 1 feed clutch [2], set the convex part of the stopper into the concave part of the paper feed tray 1 feed clutch.**

6.3.53 Transfer belt retraction clutch (CL7)

1. Remove the fusing drive unit.
See P.89



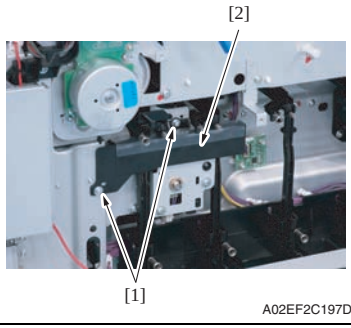
2. Disconnect the connector [2], remove three E-rings [1] and five screws [3], and remove the metal plate [4].



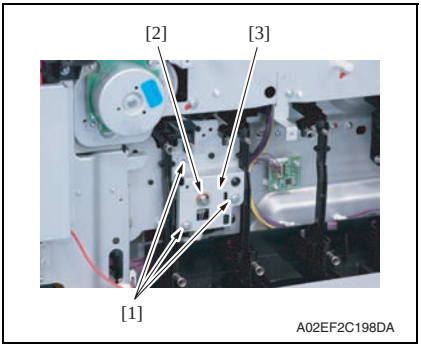
3. Remove the transfer belt retraction clutch [1].

6.3.54 Developing clutch/K (CL5)

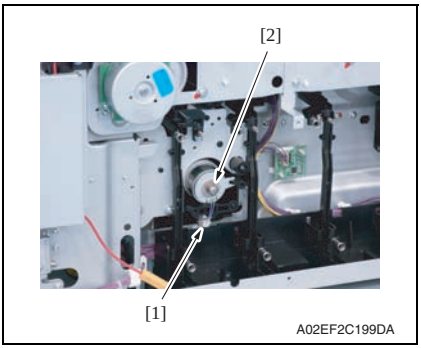
1. Remove the high voltage unit.
See P.105



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



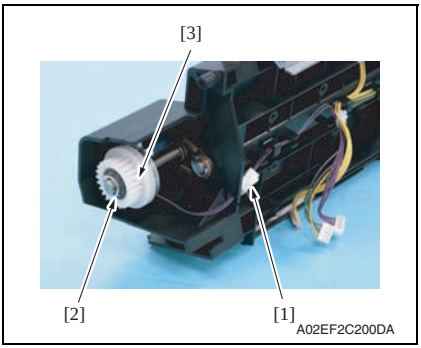
3. Remove three screws [1] and the E-ring [2], and remove the developing clutch/K cover [3].



4. Disconnect the connector [1], and remove the developing clutch/K [2].

6.3.55 Tim. roller clutch (CL6)

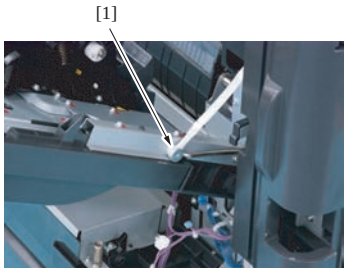
1. Remove the vertical transport unit.
See the steps 1 to 7 of IDC registration sensor removing procedure.
See P.125



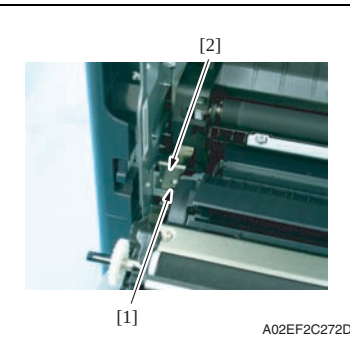
2. Disconnect the connector [1], remove the E-ring [2], and remove the tim. roller clutch [3].

6.3.56 IDC registration sensor/MK (IDCS/MK), IDC registration sensor/YC (IDCS/YC)

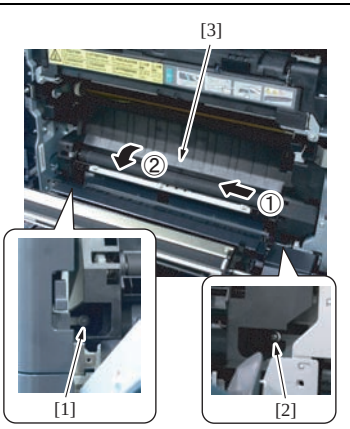
1. Remove the transfer belt unit.
See P.37
2. Remove the paper feed tray 1 unit.
See P.83



3. Remove the shoulder screw [1].



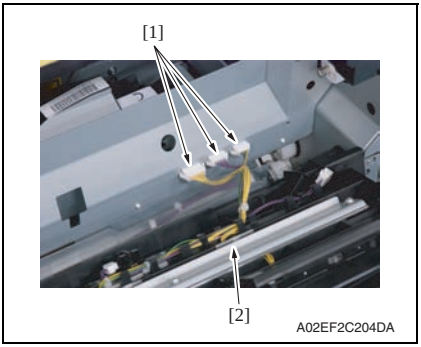
4. Remove the screw [1], and remove the plate spring [2].



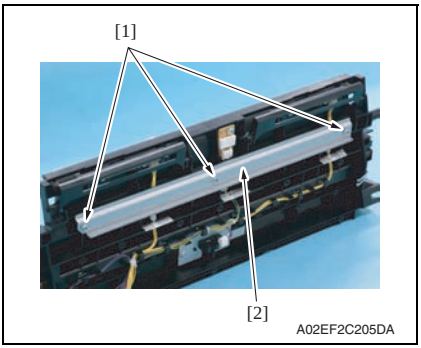
5. Remove the shoulder screw [1] and the screw [2].
6. Remove the vertical transport unit [3] as shown in the left illustration.

NOTE

- **Since multiple connectors are connected to the backside of the vertical transport assy, do not pull it by force.**



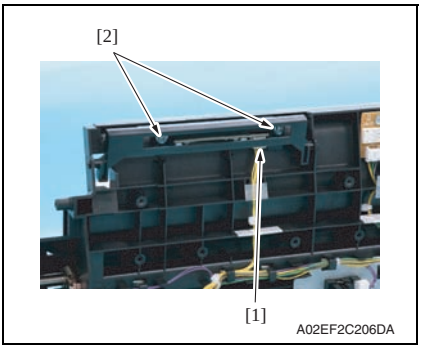
7. Disconnect three connectors [1], and remove the vertical transport unit [2].



8. Remove three screws [1], and remove the metal plate [2].

NOTE

- **Both end screws has a spacer. Remove the screws, being careful not to drop the spacers.**



9. Disconnect the connector [1], remove two screws [2], and remove the IDC registration sensor/MK.

10. Repeat steps 8 to 9 to remove IDC registration sensor/YC.

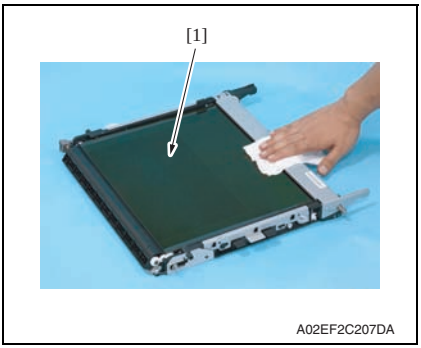
6.4 Cleaning procedure

NOTE

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

6.4.1 Transfer belt unit

1. Remove the transfer belt unit.
See P.37



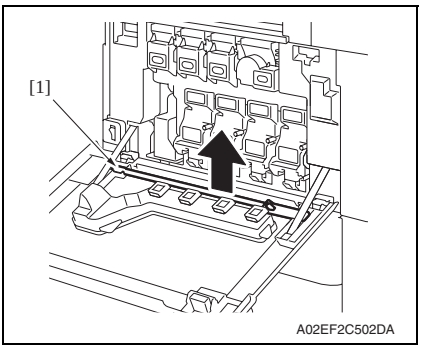
2. Using a cleaning pad, wipe the transfer belt [1].

NOTE

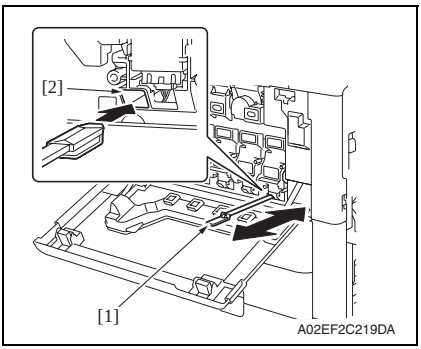
- **Do not wipe out with water.**
- **Do not wipe out with any solvents.**

6.4.2 PH window Y,M,C,K

1. Open the front door.



2. Remove the PH window cleaning jig [1] from the front door.



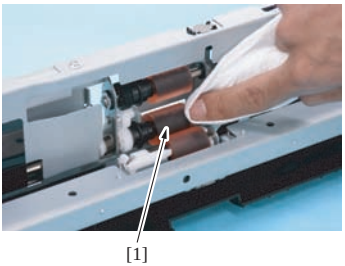
3. Insert the PH window cleaning jig [1] to the cleaning port [2] and clean it by putting the jig back and forth a couple times.

NOTE

- **Clean every PH window of Y,M,C,K.**

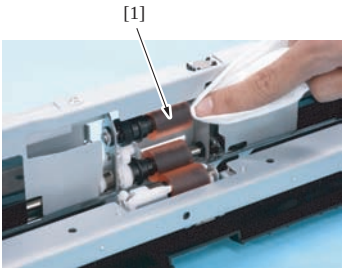
6.4.3 Paper feed tray 2 feed roller, paper feed tray 2 pick-up roller, paper feed tray 1 separation roller

1. Remove the paper feed tray 2paper feed assy.
See the steps 1 to 4 of paper feed tray 2 feed roller/paper feed tray 2 pick-up roller removing procedure.
See P.18



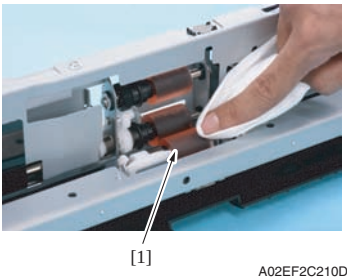
A02EF2C208DA

2. Using a cleaning pad dampened with alcohol, wipe the paper feed tray 2 feed roller [1] clean of dirt.



A02EF2C209DA

3. Using a cleaning pad dampened with alcohol, wipe the paper feed tray 2 pick-up roller [1] clean of dirt.

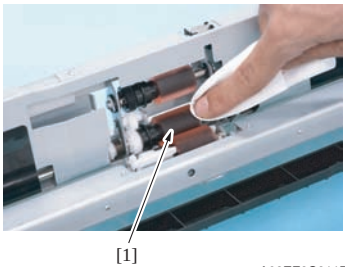


A02EF2C210DA

4. Using a cleaning pad dampened with alcohol, wipe the paper feed tray 2 separation roller [1] clean of dirt.

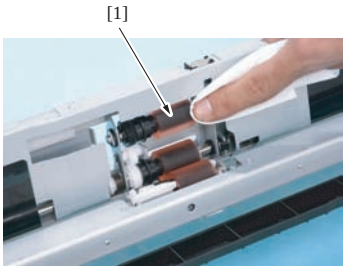
6.4.4 Paper feed tray 3 feed roller, paper feed tray 3 pick-up roller, paper feed tray 3 separation roller

1. Remove the paper feed tray 3 paper feed assy.
See the steps 1 to 5 of paper feed tray 3 feed roller/tray 2 pick-up roller removing procedure.
See P.22



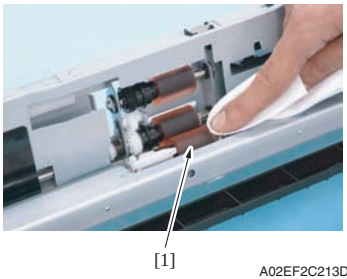
A02EF2C211DA

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



A02EF2C212DA

3. Using a cleaning pad dampened with alcohol, wipe the paper feed tray 3 pick-up roller [1] clean of dirt.

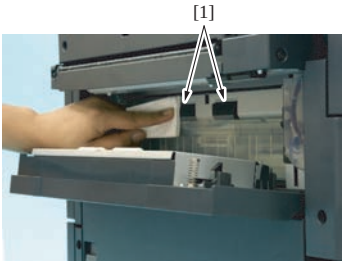


A02EF2C213DA

4. Using a cleaning pad dampened with alcohol, wipe the paper feed tray 3 separation roller [1] clean of dirt.

6.4.5 Paper feed tray 3 transport roller

1. Open the vertical transport door.

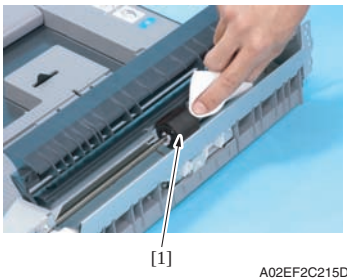


A02EF2C414DA

2. Using a cleaning pad dampened with alcohol, wipe the paper feed tray 3 transport roller [1] clean of dirt.

6.4.6 Paper feed tray 1 feed roller

1. Remove the paper feed tray 1 unit.
See P.83

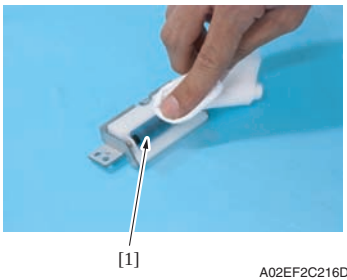


A02EF2C215DA

2. Using a cleaning pad dampened with alcohol, wipe the paper feed tray 1 feed roller [1] clean of dirt.

6.4.7 Paper feed tray 1 separation roller

1. Remove the paper feed tray 1 separation roller assy.
See P.28



A02EF2C216DA

2. Using a cleaning pad dampened with alcohol, wipe the paper feed tray 1 separation roller [1] clean of dirt.

Adjustment/Setting

7. How to use the adjustment section

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

Advance checks

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

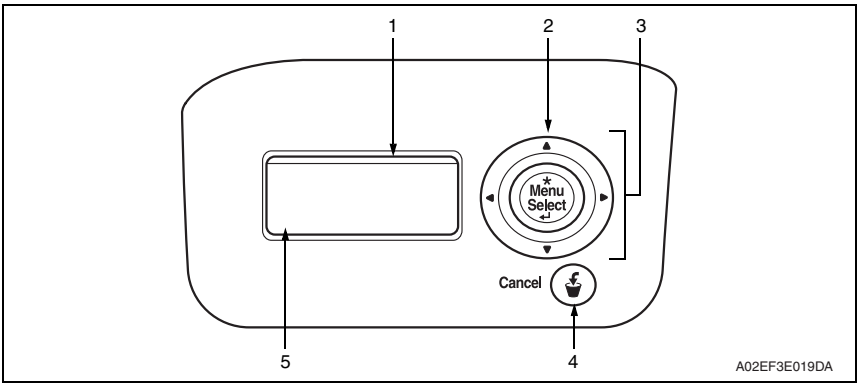
- The power supply voltage meets the specifications.
- The power supply is properly grounded.
- The machine shares the power supply with any other machine that draws large current intermittently (e.g., elevator and air conditioner that generate electric noise).
- The installation site is environmentally appropriate: high temperature, high humidity, direct sunlight, ventilation, etc.; levelness of the installation site.
- The defective image attributes to the data itself which is sent from the PC to the printer.
- The density is properly selected.
- 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

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

8. Utility Mode

8.1 Control Panel



No.	Name	Description
1	LED line	The machine's current status is indicated by the color and lighting/flashing of the indicator. Flashing in blue: Printing normally Lit in blue: Operable, printable Flashing in red: Warning Lit in red: Inoperable (Stopping operating)
2	Menu/Select key	• Pressing this key will display the function menu. • The currently selected option will be decided to proceed to the next menu.
3	Cursor keys (Hereinafter shown as ◀ ▲ ▶ ▼)	◀ • Pressing this key while entering the letters will delete the letters left side of the cursor.
		▲ • Pressing this key while the menu is being displayed will return it to the previous option or the previous setting item. • Pressing this key while entering letters will display the previous letter.
		▶ • Pressing this key will display each setting menu. • It will move the cursor to the right side for the next input position.
		▼ • Pressing this key while displaying the menu will display the next option or the next setting item. • Pressing this key while entering the letters will display the next letter.
4	Cancel key	• Pressing this key will finish changing the settings and return to the "Ready to Print" screen. • Pressing this key while printing will stop printing or job precessing.
5	Display panel	• Displays information about the current status. • It turns OFF when the printer controller is OFF or running.

8.2 Utility Mode function tree

* The function tree is shown to comply with the format displayed on the screen.

NOTE

- **Keys displayed on screens are different depending on the setting.**
- **The keys with * marks need to be entered only when using the user authentication or account track, or both.**
- **For displaying the keys with ** marks, see "Admin.Sec.Levels."**
  See P.179

Utility Mode						Ref. page
Main Menu						
Meter Count						
Job Operation	User Name *	User Password *	Account Name *	Account Password *	Public User Box	P.141
					Personal User Box	P.141
					Account User Box	P.141
					Secure Print Box	P.141
					Annotation UserBox	P.142
					Encrypted PDFBox	P.142
					Touch&Print Box	P.142
					Proof Print	P.142
Paper Settings	Tray 1					P.143
	Tray 2					P.143
	Tray 3					P.143
	Tray 4					P.143
	Tray 5					P.144
User Settings	Print Reports					P.145
	Consumables					P.148
	System Settings	Language Setting				P.148
		PowerSave Setting **	Low Power Setting **			P.148
			SleepMode Setting **			P.149
			EnteringSleepMode			P.149
			EnteringPowerSave			P.149
		PaperTray Setting	AutoTraySelection			P.149
			Tray Priority			P.149
			Auto Tray Switch			P.150
			No Matching Paper			P.150
		Output Settings	Print/Fax Output **			P.150
			Blank Page Print **			P.150
			Output Tray **			P.150
			Shift Each Job			P.151

Utility Mode					Ref. page
User Settings	System Settings	Output Settings	Bin Assignment **	Tray 1 to Bin 5	P.151
				Tray 2 to Bin 6	
	Printer Settings	Basic Settings	PDL Setting		P.151
			Number of Copies		P.151
			OriginalDirection		P.151
			Spool Setting		P.152
			Paper Size Switch		P.152
			Banner Sheet		P.152
			BindingPos.Adjust		P.152
		Paper Settings	Paper Tray		P.153
			Paper Size		P.153
			2-Sided Print		P.153
			Binding Position		P.153
			Staple		P.153
			Punch		P.154
			Banner Paper Tray		P.154
		PCL Settings	Font Setting		P.154
			Symbol Set		P.154
			Font Size	Scalable Font	P.154
				Bitmap Font	
			pitch		P.155
			CR/LF Mapping		P.155
		PS Settings	Print PS Errors		P.155
			Set ICC Profile		P.155
		XPS Setting	Verify XPS Sign.		P.156
System Settings	System Settings	Date/Time Settings	Date Setting		P.157
			Time Setting		
			Time Zone Setting		
			Time Adjustment		
		Daylight Saving	DST Setting		P.157
			Saving Time		
		LCD Brightness			P.157
		Manage-ment List	Job Settings List		P.157
			Counter List		P.158
		System Auto Reset	SysAutoReset Set		P.158
			SysAutoReset Time		
	Network Settings	TCP/IP	TCP/IP Setting		P.158
			IP Setting	ApplicationMethod	P.159
				Manual Input	
				Auto Setting	

Utility Mode						Ref. page
System Settings	Network Settings	TCP/IP	IPv6	IPv6 Setting		P.159
				Auto IPv6 Setting		
				Global Address		
				Prefix Length		
				Gateway Address		
				LinkLocal Address		
			DNS Server	ServerAutoObtain		P.160
				PriorityDNSServer		
				Secondary DNS 1		
				Secondary DNS 2		
			IP Filtering	IP Filter(Permit)		P.160
				IP Filter(Deny)		
			IPsec	IPsec Setting		P.160
				IKE Setting		
				SA Setting		
				peer		
			RAW Port Number			P.163
			Host Name			P.163
			DNS Domain			P.164
			DynamicDNSSetting			P.164
		NetWare	IPX	IPX Setting		P.164
				EthernetFrameType		
			NetWare Print	NetWarePrint Mode		P.165
				Pserver	Print Server Name	P.165
					Print Server PW	
					Polling Interval	P.165
					Bindery/NDS Set	P.165
					File Server Name	P.165
					NDS Context Name	P.165
					NDS Tree Name	P.166
				Nprinter/ Rprinter	Print Server Name	P.166
					Auto Setting	P.166
					Printer Number	P.166
			UserAuth.Set NDS			P.166
		HTTP Server	HTTPServerSetting			P.166
			PSWC Setting			P.166
			IPP Setting			P.167

Utility Mode						Ref. page
System Settings	Network Settings	HTTP Server	IPP Auth. Setting	Auth. Method		P.167
				User Name		P.167
				Password		P.167
				realm		P.167
			Accept IPP jobs			P.167
			Support Info.	Print Job		P.167
				Valid Job		
				Cancel Job		
				OpenJobAttributes		
				Open Job		
				PrinterAttributes		
			Printer Info.			P.168
		SMB	Print Setting	Print Setting		P.168
				NetBIOS Name		P.168
				PrintService Name		P.168
				Workgroup		P.168
			WINS	WINS Setting		P.168
				AutoRetrieval Set		P.169
				WINS Server Add1		P.169
				WINS Server Add2		
				Node Type Setting		P.169
			Direct Hosting			P.169
		Web Service	WebService Setting	Friendly Name		P.169
				SSL Setting		P.169
			Printer Settings	Print Function		P.170
				Printer Name		P.170
				Printer Location		P.170
				Printer Info.		P.170
		SNMP	SNMP Setting			P.171
			SNMP v1/v2c(IP)			
			SNMP v3(IP)			
			SNMP v1(IPX)			
			UDP Port Number			P.171
			SNMPv1/ v2cSetting	Read Community		P.171
				Write Setting		
				Write Community		
			SNMP v3 Setting	Context Name		P.171
				Discovery User		P.172
				DiscoveryUserName		P.172
				ReadUser Settings	Read User Name	P.172
					Security Level	P.172

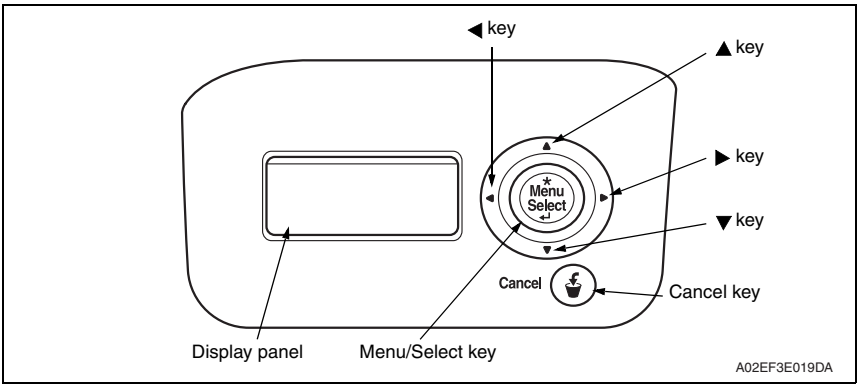
Utility Mode						Ref. page
System Settings	Network Settings	SNMP	SNMP v3 Setting	ReadUser Settings	Auth-password	P.172
					Priv-password	
				WriteUser Settings	Write User Name	P.173
					Security Level	P.173
					Auth-password	P.173
					Priv-password	
				Encrypt Algorithm		P.173
				Auth. Method		P.173
			TRAP Settings	TRAP Settings		P.174
				TRAPwhenAuthFails		P.174
		AppleTalk	AppleTalk Setting			P.174
			Printer Name			P.174
			Zone Name			P.174
		Bonjour	Bonjour Setting			P.174
			Bonjour Name			P.175
		TCP Socket	TCP Socket	Port Setting		P.175
				SSL/TLS Setting		
				PortNumberSetting		
			TCP Socket ASCII	Port Setting		P.175
				Port Number		
		Detail Settings	Network Speed			P.176
			Time Adjustment Set	NTP Setting		P.176
				NTP ServerAddress		P.176
				Port Number		P.176
			When InvalidCert.			P.176
			PING Confirmation	PING TX Address		P.177
				Check Connection		
	Printer Settings	USB Timeout				P.177
		Network Timeout				P.177
		Print XPS Errors				P.177
	System Connection	OpenAPI Settings	Access Setting			P.177
			Enable SSL			P.178
			Authentication	Auth. Settings		P.178
				Auth. Login Name		
				Auth. Password		
			PortNumber Setting	Port Number		P.178
				Port Number (SSL)		
		CallRemoteCenter				P.178
Admin. Settings	Security Settings	Admin. Password				P.179
		Admin.Sec.Levels				P.179
		Security Details	Password Rules			P.179

Utility Mode					Ref. page
Admin. Settings	Security Settings	Security Details	Prohibit Functions	Mode Setting	P.180
				#of Auth Attempts	
				Release	
				Release Time	
			SecurePrintAccess		P.181
			PrintDataCapture		P.181
			DeleteJobHistory		P.181
			Audit Log	Audit Log Setting	P.182
				OverwriteAuditLog	
				Delete Audit Log	
		EnhancedSecurity			P.182
		HDD Settings	Format HDD		P.184
			CheckHDDCapacity		P.184
			OverwriteAllArea		P.184
			Overwrite HDDdata		P.185
			OverwritePriority		P.185
			RegisterHDDLockPW		P.186
			HDD EncryptionSet		P.186
		Driver Encryption	EncryptionSetting		P.187
			EncryptPassphrase		
	User Box Settings	Delete User Box			P.187
		DeleteSecurePrint			P.187
		Delete Time	Secure PrintBox		P.187
			EncryptedPDFBox		P.188
			Touch&PrintBox		P.188
		Doc.Hold Setting			P.188
	AuthDevice Setting	CardAuth. Settings	IC Card Type		P.188
			Operating Setting		
		BioAuth. Settings	Beep Sound		P.188
			Operating Setting		
		Touch&Print	Touch&PrintUserBox		P.189
			Print		
	Expert Adjustment	Printer Adjustment	Leading Edge Adj.		P.189
			Centering		P.190
			Leading(Duplex)		P.191
			Centering(Duplex)		P.192
			Vertical Adj.		P.193
			EraseLeadingEdge		P.193
		Finisher Adjust	Center Staple Pos		P.194
			Half-Fold Pos.		

Utility Mode				Ref. page
Admin. Settings	Expert Adjustment	Density Adjustment	Thick/Yellow	P.194
			Thick/Magenta	
			Thick/Cyan	
			Thick/Black	
			BlackImageDensity	P.194
		Stabilization	Initialize+Stabi.	P.194
			StabilizationOnly	P.195
		ColorRegistration		P.196
		Test Pattern	Gradation Pattern	P.197
			Halftone Pattern	P.197
	Option Settings	HDD Installation		P.197
		Punch OptionSet	Punch Kit Type	P.197
			# of Punch Holes	
		AuthDevice Setting	Auth. Mode	P.198
			Reading Timeout	
	Firmware Update			P.198
Banner Printing				P.198

8.3 Utility Mode function setting procedure

8.3.1 Procedure



A. Job Operation

1. Make sure that the default screen (Ready to Print) is being displayed, and press the Menu/Select key on the control panel.
2. Press ▶ key to open the user name screen.
3. Enter the user name using ▲, ▼, ▶, and ◀ keys.
4. Press the Menu/Select key and set the user name.
5. Enter the user password using ▲, ▼, ▶, and ◀ keys.
6. Press the Menu/Select key and set the user password.
7. Press ▶ key to open the account name screen.
8. Enter the account name using ▲, ▼, ▶, and ◀ keys.
9. Press the Menu/Select key and set the account name.
10. Enter the account password using ▲, ▼, ▶, and ◀ keys.
11. Press the Menu/Select key and set the account password.
12. Display the item to be changed using ▲, and ▼ keys.
13. Press the Menu/Select key to set the item to be changed.

B. Paper Settings

1. Make sure that the default screen (Ready to Print) is being displayed, and press the Menu/Select key on the control panel.
2. Display the paper tray using ▲, and ▼ keys.
3. Press ▶ key to shift to the next digit.
4. Display the item to be changed using ▲, ▼, and ▶ keys.
5. Press the Menu/Select key to set the item to be changed.

8.3.2 Cancelling the settings

- Press the Cancel key.

8.3.3 Changing the settings on the setting menu

1. Enter the target value using ▲, ▼keys.
2. Press ▶ key to shift to the next digit.
3. Enter the target value using ▲, ▼ key.
4. Repeat the steps 2 and 3 to enter all the necessary items.
5. Press the Menu/Select key to enter the setting.

8.4 Meter Count

- The function is not available if No. 60 is “Disabled”, or “Enabled” but the serial number is yet to be entered, as accessed through [Service Mode] → [System Settings] → [SoftwareSWSetting].

Functions User	• To produce an output of the Meter Count list.
Setting/ Procedure	*1.* Select [Meter Count]. *2.* Select 1-Sided Print or 2-Sided Print and press the Menu/Select key to produce an output of the list.

8.5 Settings in job operation

- When user authentication or account track is being performed, the user name, user password, account name and account password need to be entered.
- The user authentication and account track cannot be set on the control panel. User the PageScope Web Connection.

A. Public User Box

Function/User	• To print or delete the document saved in the Public User Box.
Setting/ Procedure	*1.* Select the box to be used. *2.* Enter the “password” of the box to be used. *3.* Select the specific document to be used. *4.* Select “Print” or “Delete” and press the Menu/Select key.

B. Personal User Box

Function/User	• To print or delete the document saved in the Personal User Box.
Setting/ Procedure	*1.* Select the box to be used. *2.* Enter the “password” of the box to be used. *3.* Select the specific document to be used. *4.* Select “Print” or “Delete” and press the Menu/Select key.

C. Account User Box

Function/User	• To print or delete the document saved in the Account User Box.
Setting/ Procedure	*1.* Select the box to be used. *2.* Enter the “password” of the box to be used. *3.* Select the specific document to be used. *4.* Select “Print” or “Delete” and press the Menu/Select key.

D. Secure Print Box

Function/User	• To print or delete the document saved in the Secure Print Box.
Setting/ Procedure	*1.* Enter the “ID” of the secure document. *2.* Enter the “password” of the secure document to be used. *3.* Select the specific secure document to be used. *4.* Select “Print” or “Delete” and press the Menu/Select key.

E. Annotation User Box

Function/User	• To print or delete the document saved in the Annotation User Box.
Setting/ Procedure	*1.* Select the box to be used. *2.* Enter the “password” of the box to be used. *3.* Select the specific document to be used. *4.* Select “Print” or “Delete” and press the Menu/Select key.

F. Encrypted PDF Box

Function/User	• To print or delete the document saved in the Encrypted PDF Box.
Setting/ Procedure	*1.* Select the specific document to be used. *2.* Select “Print” or “Delete” and press the Menu/Select key.

G. Touch & Print Box

Function/User	• To print or delete the document saved in the Touch & Print Box.
Setting/ Procedure	*1.* Select the specific document to be used. *2.* Select “Print” or “Delete” and press the Menu/Select key.

H. Proof Print

Function/User	• To print or delete the document saved in the Proof Print.
Setting/ Procedure	*1.* Select the specific document to be used. *2.* Select “Print” or “Delete” and press the Menu/Select key.

8.6 Settings in Paper Tray

- It sets the paper type of for each tray.

A. Tray 1

Functions Use	• To set the paper size and paper type for the paper loaded in the tray 1.
Setting/ Procedure	<Paper Size> • The default setting is Auto Detect. <Paper Type> • The default setting is Plain Paper.

B. Tray 2

Functions Use	• To set the paper type of the paper loaded in tray 2. • Set wide paper size only when wide paper is to be used.
Setting/ Procedure	<Wide Paper Size> • The default setting is OFF. <Paper Type> • The default setting is Plain Paper.

C. Tray 3

Functions Use	• To set the paper type of the paper loaded in tray 3. • Set wide paper size only when wide paper is to be used. • [Paper Size] is displayed if the paper size detected is 12 x 18.
Setting/ Procedure	<Paper Size> • The default setting is Auto Detect. <Wide Paper Size> • The default setting is OFF. <Paper Type> • The default setting is Plain Paper.

D. Tray 4

Functions Use	• To set the paper type of the paper loaded in tray 4. • Set wide paper size only when wide paper is to be used.
Setting/ Procedure	<Wide Paper Size> • The default setting is OFF. <Paper Type> • The default setting is Plain Paper.

E. Tray 5

Functions Use	• To set the paper type of the paper loaded in tray 5. • The function is not available when the LCT is mounted. • Set wide paper size only when wide paper is to be used.
Setting/ Procedure	<Wide Paper Size> • The default setting is OFF. <Paper Type> • The default setting is Plain Paper.

8.7 User setting function setting procedure

8.7.1 Print Reports

Functions	• To output the report or Demo Page concerning the print setting.
Use	• To check the setting concerning the printer. • The types of report available for output are as follows. Configuration : The list of printer setting will be output. GDI Demo Page : The test page will be output. Statistics Page : The list of printer use status will be output. Consumable Info, Periodic Replacement Parts, Counter Information, Paper Information, Coverage Information PS Font List : PS font list will be output. PCL Font List : PCL font list will be output. Meter Count : The total counter of various types will be output. Consumables : The life counter of consumables will be output.
Setting/ Procedure	*1.* Select [User Settings] → [Print Reports]. *2.* Select the report to be output. *3.* Select 1-Sided Print or 2-Sided Print and press the Menu/Select key to produce an output of the list.

A. Statistics Page

(1) Consumable Info

- Display the estimated percent of life remaining in the toner cartridge and print unit.
- Display the status of the waste toner bottle and the staple unit.

NOTE

- **The percent of life remaining in the toner cartridge or print unit can be used as a guide, but may not exactly reflect the amount that has been used in the toner cartridge or print unit.**

(2) Periodic Replacement Parts

- Display the estimated percent of life remaining in periodic replacement parts and units such as the transfer belt and fusing unit.

(3) Counter Information/Paper Information

- The total number of pages that have been printed is counted and displayed based on the description shown in the following table.

<Counter information list>

Types of count		Contents	Count timing
Total Count	Full color	• The total number of color pages ejected from the printer. Increment by one per simplex and by two per duplex	When a sheet of media is ejected properly
	Monochrome	• The total number of monochrome pages ejected from the printer. Increment by one per simplex and by two per duplex	
	2 Color	• The total number of 2 color pages ejected from the printer. Increment by one per simplex and by two per duplex	
	Total	• The cumulative number of printed pages fed out. Increment by one per simplex and by two per duplex	
Total Count (duplex)	Total	• The cumulative number of 2-sided printed pages fed out. Increment by one per duplex (and by zero per simplex)	
Sheets Printed by Paper Size		• The number of sheets used for each media size. Increment by one for both simplex and duplex	When a sheet of media is fed
Sheets Printed by Paper Type		• The number of pages used per each media type. Increment by one for both simplex and duplex	

NOTE

- **The total counters and the print counters count at a different timing, when a sheet of media is properly ejected and when a sheet of media is fed, respectively. Therefore, the sum of each total counter value may not be same with the sum of each print counter value if a sheet of media cannot be ejected due to media jam inside the machine or other possible problems.**

(4) Coverage Information

- Each coverage information is calculated and displayed based on the description shown in the following table.

<Coverage information list>

Coverage information	Contents
Current Coverage <Current Toner Cartridge>	• Individual average dot coverage of four colors (YMCK) in the current toner cartridges is calculated on an A4 basis. (The average of the ratios of dot space on each page when the printable area is defined as 100% and shown in 0.1 percent increments)
Total Coverage <Total>	• Individual average dot coverage of four colors (YMCK) is calculated on an A4 basis for all prints performed after the printer was installed. (The average of the ratios of dot space on each page when the printable area is defined as 100% and shown in 0.1 percent increments)
CMYK Coverage	• Average dot coverage is calculated on an A4 basis for full color printing performed after the printer was installed. (The average of the ratios of dot space on each page when the printable area is defined as 100% and shown in 0.1 percent increments)
Monochrome Coverage	• Average dot coverage is calculated on an A4 basis for monochrome printing performed after the printer was installed. (The average of the ratios of dot space on each page when the printable area is defined as 100% and shown in 0.1 percent increments)

NOTE

- **Coverage information can be used as a guide and may not completely reflect the actual amount of toner used.**

(5) How to read consumable/periodic replacement parts (units) counter information.

- The lower left part of the statistics page shows numerical values that represent consumable/periodic replacement parts (units) counter information.
  The table below explains counter information that is provided by each numerical data.

<Display on the statistics page>

00/00/00/00	07J12

<Meaning of counter value> (From the left of the numerical values)

No.	Contents	
1	Number of times a Standard-capacity toner cartridge (K) or print unit (K) has been replaced	
2	Number of times a Standard-capacity toner cartridge (C) or print unit (C) has been replaced	
3	Number of times a Standard-capacity toner cartridge (M) or print unit (M) has been replaced	
4	Number of times a Standard-capacity toner cartridge (Y) or print unit (Y) has been replaced	
1	Start date of use *1	Year (e.g. The year 2007 is displayed as 07.)
2		Month (e.g. January is displayed as A. February is B. March is C. And December is L.)
3		Day (e.g. The day 12 is displayed as 12.)

*1: Start date of use begins when 100 prints are complete after the first new toner cartridge was detected following the main body installation.

8.7.2 Consumables

Functions	• To show the consumed level of the consumables.
Use	

8.7.3 System Settings

A. Language Setting

Functions	• To select the language on the LCD display.
Use	• To change the language on the control panel to another language.
Setting/ Procedure	• The language options depend on the marketing area selected in [System Settings] under Service Mode.

B. Power Save Setting

(1) Low Power Setting

Functions	• To set the time until low power starts operating after the last key operation has been completed. • Low power: Lower the power consumption. The LED on the control panel flashes on and off in the low power mode.
Use	• To change the time until low power starts.
Setting/ Procedure	• The default setting is 015 Minute(s). "015 Minute(s)" (002 to 240)

(2) Sleep Mode Setting

Functions	• To select whether or not to allow entry into the sleep mode. • "Restrict" will only be displayed when [Don't go to Sleep] in Service Mode is set.
Use	• The LED on the control panel flashes on and off in the sleep mode.
Setting/ Procedure	• The default setting is ON. "ON" OFF

(3) Entering Sleep Mode

Functions	• To set the time until sleep mode starts operating after the last key operation has been completed. • Turn all lines OFF except 5 V line for control.
Use	• To change the time until the sleep mode starts. • The function is available only if [SleepMode Setting] is set to "ON," as accessed through [User Settings] → [System Settings] → [PowerSave Setting] → [SleepMode Setting].
Setting/ Procedure	• The default setting is 020 Minute(s). "020 Minute(s)" (002 to 240)

(4) Entering Power Save

Functions	• To set whether to immediately switch to the power save mode after printing.
Use	• To immediately switch to the power save mode after printing. Normal : Switches to the power save mode according to the normal power save mode after the printing. Immediately : Switches to the power save mode immediately after the printing.
Setting/ Procedure	• The default setting is Immediately. Normal "Immediately"

C. Paper Tray Setting

(1) Auto Tray Selection

Functions	• To set the tray for automatic selection when APS is being set.
Use	• To specify the tray to be used when APS is being set.
Setting/ Procedure	• Select the tray on the [AutoTraySelection] screen.

(2) Tray Priority

Functions	• To establish the priority for switching the tray when ATS is being set.
Use	• To establish the priority of the tray when ATS is being set.
Setting/ Procedure	• Set the priority on the [Tray Priority] screen.

(3) Auto Tray Switch

Functions	• To set whether to automatically switch to another tray with same size paper when the paper feed tray runs out of paper during printing.
Use	• To switch the paper feed tray automatically.
Setting/ Procedure	• The default setting is OFF. ON "OFF"

(4) No Matching Paper

Functions Use	• To set whether to switch to another tray automatically when the specified tray runs out of paper during printing. Stop Printing : It stops printing when the specified tray runs out of paper. Switch Trays : To switch to another tray with the specified paper and print when the tray is out of paper.
Setting/ Procedure	• The default setting is Stop Printing. "Stop Printing" Switch Trays

D. Output Settings

(1) Print/Fax Output

Functions	• To set the timing for printing for the PC print job received.
Use	Page Print : Starts printing every time data for each page are received Batch Print : Starts printing when all data are received
Setting/ Procedure	• The default setting is Page Print. "Page Print" Batch Print

(2) Blank Page Print

Functions	• Select wether or not to print the stamp/composition on blank pages.
Use	• To print a stamp/composition on blank pages.
Setting/ Procedure	• The default setting is Do Not Print. Print "Do Not Print"

(3) Output Tray

• It will be displayed only when the optional finisher FS-519 is mounted.

Functions	• To set the priority output tray.
Use	• To change the prior output tray according to the application.
Setting/ Procedure	• The default settings is Finisher Tray 1. "Finisher Tray 1" Finisher Tray 2 Finisher Tray 3

(4) Shift Each Job

⚠ • It will be displayed only when the optional finisher FS-519 or FS-609 is mounted.

Functions	• To set whether to offset each job when paper is printed using the finisher or job separator.
Use	• Some paper type may fail to be discharged or get deteriorated loading when large volume prints are printed using the finisher or job separator. This function is used to print large volume prints when finisher or job separator is mounted. (When this function is set to “OFF”, the paper is discharged without offsetting the paper to the center of the tray.)
Setting/ Procedure	• The default setting is ON. “ON” OFF

(5) Bin Assignment

• It will be displayed only when the optional mailbin kit MT-502 is mounted.

Functions	• Assign the tray 1 of the finisher to the mailbin 5, and the tray 2 to the mailbin 6. • The tray 2 can be assigned when the optional exit tray OT-602 is mounted.
Use	• Use when assigning the tray 1 and the tray 2 of the finisher to the mailbins.
Setting/ Procedure	• The default setting is Don’t Set. Set “Don’t Set”

8.7.4 Printer Settings

A. Basic Settings

(1) PDL Setting

Functions	• To set the PDL (Page Description Language) for PC printing.
Use	• To fix the PDL as necessary. It usually switches automatically.
Setting/ Procedure	• The default setting is Auto. “Auto” PCL PS

(2) Number of Copies

Functions	• To set the number to be copied when not specified by the printer driver during PC printing.
Use	• To use when the number cannot be specified by the printer driver during printing from Windows DOS, etc.
Setting/ Procedure	• The default setting is 001 copies. “001 copies” (001 to 999)

(3) Original Direction

Functions	• To set the default setting for the direction of the original during PC printing.
Use	
Setting/ Procedure	• The default setting is Portrait. “Portrait” Landscape

(4) Spool Setting

Functions	• To set whether to store the print data to HDD when receiving the next job during RIP process of the current job.
Use	
Setting/ Procedure	• The default setting is ON. "ON" OFF

(5) Paper Size Switch

Functions	• To set whether to switch between A4 and Letter (8 $^1/_2$ x 11) size paper, and A3 and Ledger (11 x 17) size paper in reading.
Use	• To output Letter (8 $^1/_2$ x 11) size document to A4 size, and Ledger (11 x 17) size document to A3 size. • To output A4 size document to Letter (8 $^1/_2$ x 11) size, and A3 size document to Ledger (11 x 17) size. **NOTE** **• When switching the size, the image will be printed in the same magnification.** **• The image will not be reduced when there is image deficiency.**
Setting/ Procedure	• The default setting is OFF. ON "OFF"

(6) Banner Sheet

Functions	• To set whether or not to print on the banner (front cover) page.
Use	• To use when the banner (front cover) page is to be printed.
Setting/ Procedure	• The default setting is OFF. ON "OFF"

(7) Binding Pos. Adjust

Functions	• Specifies the alignment between the sides of paper (binding position adjustment) in duplex printing.
Use	• To achieve faster printing performance, select Productivity. To address misalignment problems between sides of prints in the horizontal and vertical directions, select Finishing. Finishing : Able to optimize sides aligning operation as the process is performed after the machine receives all of the print data. Productivity : Able to accelerate print speed as sides alignment proceeds together with data reception and print operation. ControlAdjustment : Comply with the command from the printer driver and does not take the side alignment step.
Setting/ Procedure	• The default setting is Finishing. "Finishing" Productivity ControlAdjustment

B. Paper Settings

(1) Paper Tray

Functions	• To set the paper feed tray when not specified by the printer driver during PC printing.
Use	• To use when paper feed tray cannot be specified by the printer driver when printing from Windows DOS, etc.
Setting/ Procedure	• The default setting is Auto.

(2) Paper Size

Functions	• To set the paper size when not specified by the printer diver during printing.
Use	• To use when the paper size cannot be specified by the printer driver during printing from Windows DOS, etc.

(3) 2-Sided Print

Functions	• To set whether to carry out duplex print during PC printing when not specified by the printer driver.
Use	• To use when 2-sided printing cannot be specified by the printer driver while printing by Windows DOS, etc.
Setting/ Procedure	• The default setting is OFF. ON “OFF”

(4) Binding Position

Functions	• To set the binding direction during duplex printing when not specified by the printer driver during PC printing.
Use	• To use when binding direction cannot be specified by the printer driver during printing by Windows DOS, etc.
Setting/ Procedure	• The default setting is Left Bind. Top Bind “Left Bind” Right Bind

(5) Staple

⚠1 • The menu is available only when the optional finisher FS-519 or FS-609 is mounted.

Functions	• To set whether to staple or not when not specified by the printer driver during PC printing.
Use	• To use hen staple is not specified by the printer driver during printing by the Windows DOS, etc.
Setting/ Procedure	• The default setting is OFF. 1 Position 2 Positions “OFF”

(6) Punch

⚠1 • The menu is available only when the optional finisher FS-519/FS-609 and punch kit PK-515/PK-501 is mounted.

Functions	• To select whether to make punch-holes or not when not specified by the printer driver during PC printing.
Use	• To use when the printer driver cannot specify punching during printing from Windows DOS, etc.
Setting/ Procedure	• The default setting is OFF. 2-Hole/3-Hole/4-Hole "OFF" * The number of punch holes being set is available from [Service Mode] → [Finisher Adjust] → [Punch Option].

(7) Banner Paper Tray

Functions	• To set the feed tray for printing on the banner (front cover) page.
Use	• To set the feed tray for printing on the banner (front cover) page.
Setting/ Procedure	• The default setting is Auto.

C. PCL Settings

(1) Font Setting

Functions	• To set the font when not specified by the printer driver during PC printing.
Use	• To use when the printer driver cannot specify the font during printing from Windows DOS, etc. • It can be selected from the Resident font or the download font.
Setting/ Procedure	• The default setting is 000.

(2) Symbol Set

Functions	• To set the font symbol set when not specified by the printer driver during PC printing.
Use	• To use when the font symbol set cannot be specified by the printer driver during printing from Windows DOS, etc.
Setting/ Procedure	• The default setting is Roman-8.

(3) Font Size

Functions	• To set the font size when not specified by the printer driver during PC printing.
Use	• To set the font size when it cannot be specified by the printer driver during printing from Windows DOS, etc. • To set scalable font (: Point) and bitmap font (: Pitch) respectively.
Setting/ Procedure	• The default setting is Scalable Font : 012.00 points Bitmap Font : 10.00 pitch

(4) Pitch

Functions	• To set the number of lines per page for printing the text data.
Use	• To change the number of lines per page for printing the text data.
Setting/ Procedure	• Default setting value differs depending on the values by the following two different settings. [User Settings] → [Printer Settings] → [Basic Settings] → [OriginalDirection] [User Settings] → [Printer Settings] → [Paper Settings] → [Paper Size] "060 lines" (005 to 128)

(5) CR/LF Mapping

Functions	• To set the mode for replacing data when printing the text data.
Use	• To change the mode for replacing data when printing the text data.
Setting/ Procedure	• The default setting is CR=CR LF=LF. "CR=CR LF=LF" CR=CRLF LF=LF CR=CR LF=CRLF CR=CRLF LF=CRLF

D. PS Settings

(1) Print PS Errors

Functions	• To set whether to print or not the error information when an error occurred during PS rasterizing.
Use	• To print the information concerning the postscript error.
Setting/ Procedure	• The default setting is OFF. ON "OFF"

(2) Set ICC Profile

Functions	• To select a profile to be used for print jobs from a computer when a profile is not specified by printer driver.
Use	• Possible to set a profile separately for each of the following items. Photo-RGB Color Photo-Output Text-RGB Color Text-Output FTG-RGB Color FTG-Output SimulationProfile
Setting/ Procedure	• The default settings are shown below. Photo-RGB Color : Device Color Photo-Output : Auto Text-RGB Color : Device Color Text-Output : Auto FTG-RGB Color : Device Color FTG-Output : Auto SimulationProfile : None

E. XPS Setting

(1) Verify XPS Sign.

Functions Use	• Selects whether to verify digital signatures attached to XPS (XML Paper Specification) files when printing the files. • When digital signature verification is selected, files with invalid digital signatures are not printed.
Setting/ Procedure	• The default setting is OFF. ON "OFF"

8.8 System settings function setting procedure

8.8.1 System Settings

A. Date/Time Settings

Functions	• To set the date/time and the time zone to start the clock.
Use	• To change settings concerning the date/time.
Setting/ Procedure	• For time zone, set the time difference with the world standard time. • Setting range for the time zone: -12:00 to +12:00 (by 30 minutes) • When the following setting is set to “ON”, [Time Adjustment] will be displayed. Press the Menu/Select key and modify the time. [System Settings] → [Network Settings] → [Detail Settings] → [TimeAdjustmentSet]

B. Daylight Saving

Functions	• To set whether to set the daylight saving time. • To set the time difference in setting the daylight saving time.
Use	• To set the daylight saving time.
Setting/ Procedure	<DST Setting> • The default setting is OFF. ON “OFF” <Saving Time> • When setting to ON, set the time difference to move up. “060 Minute(S)” (001 to 150)

C. LCD Brightness

Functions	• To adjust LCD Brightness of the control panel.
Use	
Setting/ Procedure	• The default setting is 0. “0” (-3 to +3)

D. Management List

(1) Job Settings List

Functions	• To output the value set by the setting menu.
Use	
Setting/ Procedure	*1.* Select [System Settings] → [System Settings] → [Management List] → [Job Settings List]. *2.* Select 1-Sided Print or 2-Sided Print and press the Menu/Select key to produce an output of the list.

(2) Counter List

- This function is not available if user authentication or account track is not to be implemented.

Functions	• To print the user counter and account track counter.
Use	• To output and check the user counter and account track counter.
Setting/ Procedure	*1.* Select [System Settings] → [System Settings] → [Management List] → [Counter List]. *2.* Select 1-Sided Print or 2-Sided Print and press the Menu/Select key to produce an output of the list.

E. System Auto Reset

Functions	• To set the period of time until system auto reset starts functioning.
Use	• To change the period of time until system auto reset starts functioning.
Setting/ Procedure	<SysAutoReset Set> • The default setting is ON. "ON" OFF <SysAutoReset Time> • The default setting is 1 Minute(s). "1 Minute(s)" (1 to 9)

8.8.2 Network Settings

A. TCP/IP

(1) TCP/IP Setting

Functions	• To set whether to enable or disable TCP/IP setting.
Use	
Setting/ Procedure	• The default setting is ON. "ON" OFF **NOTE** **• When the setting is changed, turn off the power switch and turn it on again more than 10 seconds after.**

(2) IP Setting

Functions	• To set whether to enter the IP address directly or to obtain it automatically.
Use	• To change the method for setting the IP address.
Setting/ Procedure	• The default setting is Auto Setting. Manual Input "Auto Setting" • When it is set to [Auto Setting], select the method to obtain it automatically. DHCP Setting : ON OFF BOOTP Setting : ON OFF ARP/PING Setting : ON OFF AUTO IP Setting : ON OFF **NOTE** • **[ARP/PING Setting] and [Auto IP Setting] cannot be set to "OFF" simultaneously.** • **They will all be set to "ON" when [Manual Input] is changed to [Auto Setting].** • When it is set to [Manual Input], set the IP address, subnet mask and default gate way.

(3) IPv6

Functions	• To set whether to use IPv6 in IP network communication. • To set whether to use the IPv6 address automatic acquisition setting. • To set IPv6 addresses.
Use	• To use IPv6 in IP network communication.
Setting/ Procedure	<IPv6 Setting> • The default setting is ON. "ON" OFF <Auto IPv6 Setting> • The default setting is ON. "ON" OFF **NOTE** • **When the setting is changed, turn off the power switch and turn it on again more than 10 seconds after.** <IPv6 address> • When [Auto IPv6 Setting] is set to OFF, make the settings of global address and gateway address. *1.* Select [Global Address] or [Gateway Address]. *2.* Enter the address using ▲ and ▼ keys. *3.* To change the prefix length of global address, select [Prefix Length] and specify the number of bits within the range of 1 to 128. **NOTE** • **[LinkLocal Address] key appears, but its settings are not allowed to be changed.**

(4) DNS Server

Functions	• To set whether or not to enable the auto obtaining of the DNS server address. • To set the priority/secondary DNS server.
Use	• To enter priority/secondary DNS server.
Setting/ Procedure	<Server Auto Obtain> • The default setting is ON. "ON" OFF **NOTE** • **"ON" cannot be set when [IP Setting] is set to "Auto Setting."** <Priority/SecondaryDNS server> • Select the corresponding key, and input the server address by IPv4 or the IPv6 format.

(5) IP Filtering

Functions	• To set the IP filter (Permit). • To set the IP filter (Deny).
Use	• To set whether to allow only IP addresses that are within a specified range. • When [ON] is set, select one from Set 1 to Set 5 and specify the range of IP addresses to be allowed.
Setting/ Procedure	<IP Filter(Permit)> *1.* Select ON or "OFF". *2.* When [ON] is set, select one from Permit Set 1 to Permit Set 5 and specify the range of IP addresses to be allowed using ▲ and ▼ keys. *3.* Press the Menu/Select key. <IP Filter(Deny)> *1.* Select ON or "OFF". *2.* When [ON] is set, select one from Deny Set 1 to Deny Set 5 and enter the range of IP addresses to be denied using ▲ and ▼ keys. *3.* Press the Menu/Select key.

(6) IPsec

<IPsec Setting>

Functions	• To set whether to use IPsec protocol for IP network communication.
Use	• When IPsec protocol is used to perform encrypted communication.
Setting/ Procedure	• The default setting is OFF. ON "OFF"

<IKE Setting>

Functions Use	• To make the settings that relate to IKE (Internet Key Exchange) protocol which is used for IPsec communication. • Settings can be made independently for four different sets (Group 1 to 4).
Setting/ Procedure	<Group> • Among four groups (Group 1 to 4), select a group where settings are made. <Encryption Algorithm> • Set a encryption algorithm used for IPsec communication. • The default setting is OFF. DES_CBC 3DES_CBC “OFF” <Auth. Algorithm> • Set an authentication algorithm used for IPsec communication. • The default setting is MD5. “MD5” SHA-1 <Key Validity Period> • Set a key validity period. • The default setting is 028800 sec. “028800 sec” (000080 to 604800) <Diffie-Hellman> • Set Diffie-Hellman group. • The default setting is Group 2. Group 1 “Group 2”

<SA Setting>

Functions Use	• To make the settings that relate to IPsec SA (Security Association) which is used for IPsec communication. • Settings can be made independently for eight different sets (Group 1 to 8).
Setting/ Procedure	<Group Set Number> • Among Group 1 to 8, select a group where settings are made. • Select the key of the Group, make the following settings. (If the combination of each selection is not allowed among different settings, the key operation of the corresponding option is locked.) <Security Protocol> • Set a security protocol. • The default setting is OFF. AH ESP ESP_AH “OFF” <ESP Encryption> • Set an encryption algorithm used for ESP protocol. • The default setting is DES_CBC. “DES_CBC” 3DES_CBC AES_CBC AES_CTR NULL <ESP Auth> • Set authentication algorithm used for ESP protocol. • The default setting is OFF. MD5 SHA-1 “OFF” <AH Auth. Algorithm> • Set authentication algorithm used for AH protocol. • The default setting is MD5. “MD5” SHA-1 <Time after Setup> • Set the period of time starting from when SA connection is established and ending when the SA connection is cut. • The default setting is 003600 sec. “003600 sec” (000120 to 604800)

<Peer>

Functions	• To register destinations used for IPsec communication.
Use	• Settings can be made independently for different ten sets (Group 1 to 10).
Setting/ Procedure	<Peer> • Among Group 1 to 10, select a group where settings are made. • Select the key of the Group, make the following setting. <Encapsulation Mode> • Set a encapsulation mode used for IPsec. • The default setting is OFF. Tunnel Mode Transport Mode "OFF" <PFS Setting> • When the transport mode is selected, set whether to use Perfect forward secrecy. • The default setting is OFF. ON "OFF" <Peer Address> • When the encapsulation mode is set, specify the IP address of destinations. • Enter the IP address with IPv4 or IPv6 format. <Pre-Shared Key> • When the encapsulation mode is set, specify a Pre-shared key (Key data). • Enter the Pre-shared key.

(7) RAW Port Number

Functions	• To set the RAW port number.
Use	• To set the RAW port number for the printer. • Several data can be accepted at the same time by selecting several ports.
Setting/ Procedure	*1.* Select the necessary port number. *2.* When using the selected port, enter the RAW port number using ▲ and ▼ keys. *3.* Press the Menu/Select key.

(8) Host Name

Functions	• To set the DNS host name.
Use	• To enter the DNS host name.
Setting/ Procedure	• Enter the DNS host name using ▲ and ▼ keys, and press the Menu/Select key.

(9) DNS Domain

Functions	• To set whether or not to enable the auto obtaining for the DNS domain name. • To set the DNS default domain name. • To set the DNS search domain name.
Use	• To enter the DNS default domain name. • To enter the DNS search domain name.
Setting/ Procedure	<NameAutoRetrieval> • The default setting is ON. "ON" OFF **NOTE** • **"ON" cannot be set when [IP Setting] is set to "Auto Input."** <Domain Name> *1.* Select [DefaultDomainName] or [SearchDomainName 1 to 3]. *2.* Enter the domain name using ▲ and ▼ keys and press the Menu/Select key.

(10) Dynamic DNS Setting

Functions	• To set whether or not to enable the dynamic DNS setting.
Use	• To set the dynamic DNS.
Setting/ Procedure	• The default setting is OFF. ON "OFF"

B. NetWare

(1) IPX

Functions	• To enable or disable the NetWare (IPX) setting. • To set the ethernet frame type.
Use	• To use NetWare (IPX) setting. • To specify the frame type for transmission.
Setting/ Procedure	<IPX Setting> • The default setting is ON. "ON" OFF <EthernetFrameType> • The default setting is Auto Detect. "Auto Detect" 802.2 802.3 Ethernet II 802.2SNAP **NOTE** • **When the setting is changed, turn off the power switch and turn it on again more than 10 seconds after.**

(2) NetWare Print

NOTE

- **When the setting is changed, turn off the power switch and turn it on again more than 10 seconds after.**

Functions	• To set whether to use the NetWare print mode. • To set the NetWare print mode. • To display NetWare status.
Use	• To change the NetWare print mode. • To check NetWare status.
Setting/ Procedure	• The default setting is OFF. Pserver Nprinter/Rprinter "OFF"

<Pserver: Print Server Name/Print Server PW>

Functions	• To set the print server name and print server password.
Use	• To enter the print server name or the print server password.
Setting/ Procedure	*1.* Select [Print Server Name] or [Print Server PW]. *2.* Enter the print server name or the print server password (up to 63 characters) using ▲ and ▼ keys, and press the Menu/Select key.

<Pserver: Polling Interval>

Functions	• To set the polling interval.
Use	• To set the interval to search the print queue.
Setting/ Procedure	• Enter the polling interval between 1 and 65535 using ▲ and ▼ keys.

<Pserver: Bindery/NDS Set>

Functions	• To set whether to enable or disable the bindery setting when using NetWare4.x model and after.
Use	• To enable the bindery service.
Setting/ Procedure	• The default setting is NDS. "NDS" NDS/Bindery

<Pserver: File Server Name>

Functions	• To set the file server name.
Use	• To set the full server name for the print server to logon.
Setting/ Procedure	• Enter the File server name (up to 47 characters) using ▲ and ▼ keys, and press the Menu/Select key.

<Pserver: NDS Context Name>

Functions	• To set the NDS context name (context name to register NDS print server).
Use	• To set the NDS context name.
Setting/ Procedure	• Enter the NDS context name (up to 191 characters) using ▲ and ▼ keys, and press the Menu/Select key.

<Pserver: NDS Tree Name>

Functions	• To set the NDS tree name (name to login).
Use	• To set the NDS tree name.
Setting/ Procedure	• Enter the NDS tree name (up to 63 characters) using ▲ and ▼ keys, and press the Menu/Select key.

<Nprinter/Rprinter: Print Server Name>

Functions	• To set the print server name.
Use	• To set the print server name.
Setting/ Procedure	• Enter the printer name (up to 63 characters) using ▲ and ▼ keys, and press the Menu/Select key.

<Nprinter/Rprinter: Auto Setting>

Functions	• To set whether to use the printer number automatic acquisition setting.
Use	• To use when automatic setting the printer number.
Setting/ Procedure	• The default setting is ON. "ON" OFF

<Nprinter/Rprinter: Printer Number>

Functions	• To set the printer number.
Use	• To set the printer number.
Setting/ Procedure	• Enter the number between 0 and 254 using ▲ and ▼ keys.

(3) User Auth. Set NDS

Functions	• To set whether or not to use the user authentication setting.
Use	• To conduct user authentication in netware environment.
Setting/ Procedure	• The default setting is ON. "ON" OFF

C. HTTP Server

(1) HTTP Server Setting

Functions Use	• To set whether or not to use the http server setting.
Setting/ Procedure	• The default setting is ON. "ON" OFF

(2) PSWC Setting

Functions Use	• To set whether to use the PageScope Web Connection.
Setting/ Procedure	• The default setting is ON. "ON" OFF

(3) IPP Setting

Functions	• To set whether to enable or disable IPP (Internet Printing Protocol) setting.
Use	
Setting/ Procedure	• The default setting is ON. "ON" OFF

(4) IPP Auth. Setting

<Auth. Method>

Functions	• To set the authentication method for IPP authentication.
Use	• To change the authentication method when conducting IPP authentication.
Setting/ Procedure	• The default setting is req-user-name. "req-user-name" basic digest OFF

<User Name>

Functions	• To set the User name for IPP authentication.
Use	
Setting/ Procedure	• Enter the user name using ▲ and ▼ keys, and press the Menu/Select key.

<Password>

Functions	• To set the password for IPP authentication.
Use	
Setting/ Procedure	• Enter the password using ▲ and ▼ keys, and press the Menu/Select key.

<realm>

Functions	• To set the realm for identifying the authentication setting for IPP authentication.
Use	
Setting/ Procedure	• Enter the realm using ▲ and ▼ keys, and press the Menu/Select key.

(5) Accept IPP jobs

Functions	• To set whether to allow or restrict the IPP job.
Use	
Setting/ Procedure	• The default setting is ON. "ON" OFF

(6) Support Info.

Functions	• To set the operation support information.
Use	• For the response setting to see if IPP transmission supports each function.
Setting/ Procedure	• Set "ON" or OFF for each item.

(7) Printer Info.

Functions	• To set the printer information.
Use	• To set the printer information.
Setting/ Procedure	• Enter the printer name, printer location, and printer information using ▲ and ▼ keys.

D. SMB

(1) Print Setting

Functions	• To set whether to use SMB port or not in printer mode.
Use	
Setting/ Procedure	• The default setting is ON. "ON" OFF

<NetBIOS Name>

Functions	• To set NetBIOS name.
Use	• To set NetBIOS name.
Setting/ Procedure	• Enter the NetBIOS name (up to 15 characters) using ▲ and ▼ keys, and press the Menu/Select key.

<Print Service Name>

Functions	• To set the print service name.
Use	• To set the print service name.
Setting/ Procedure	• Enter the print service name (up to 13 characters) using ▲ and ▼ keys, and press the Menu/Select key.

<Workgroup>

Functions	• To set the workgroup.
Use	• To set the workgroup.
Setting/ Procedure	• Enter the workgroup (up to 15 characters) using ▲ and ▼ keys, and press the Menu/Select key.

(2) WINS

<WINS Setting>

Functions	• To set whether or not to enable the WINS setting.
Use	• To use the WINS (Windows Internet Name Service) setting is necessary. • By using the WINS, the traffic by broadcast can be reduced, and the communication becomes available with the network where broadcast does not reach.
Setting/ Procedure	• The default setting is ON. "ON" OFF

<Auto Retrieval Set>

Functions	• To set whether or not to enable the auto obtaining of the WINS server address.
Use	• To acquire the WINS server address automatically. • To obtain the WINS server address from DHCP server. If there are more than on address settings, up to two can be acquired.
Setting/ Procedure	• The default setting is ON. "ON" OFF

<WINS Server Add 1, 2>

Functions	• To set the WINS server address.
Use	• To use when manually entering the WINS server address. • The primary address and the secondary address can be set. (The primary address has the priority during operation.)
Setting/ Procedure	*1.* Select [WINS Server Add1] or [WINS Server Add2]. *2.* Enter the WINS server address.

<Node Type Setting>

Functions	• To set a node type.
Use	• To change the current node type.
Setting/ Procedure	• The default setting is H Node. B Node P Node M Node "H Node"

(3) Direct Hosting

Functions	• To set whether or not to enable the direct hosting setting.
Use	• To use the direct hosting setting is necessary.
Setting/ Procedure	• The default setting is ON. "ON" OFF

E. Web Service

(1) Web Service Setting

<Friendly Name>

Functions Use	• To define a friendly name that is used when printing a job with Web Service function.
Setting/ Procedure	*1.* Select [Friendly Name]. *2.* Enter the friendly name (up to 62 characters) using ▲ and ▼ keys, and press the Menu/Select key.

<SSL Setting>

• It will be displayed when certificate is issued from PageScope Web Connection.

Functions Use	• To set whether to use SSL when using Web Service function.
Setting/ Procedure	• The default setting is OFF. ON "OFF"

(2) Printer Settings

<Printer Function>

Functions Use	• To set whether to use this printer as a WS printer.
Setting/ Procedure	• The default setting is OFF. ON "OFF"

<Printer Name>

Functions Use	• To set the WS printer name.
Setting/ Procedure	• Enter the friendly name (up to 63 characters) using ▲ and ▼ keys, and press the Menu/Select key. **NOTE** • **When the setting is changed, turn off the power switch and turn it on again more than 10 seconds after.**

<Printer Location>

Functions Use	• To set the WS printer location.
Setting/ Procedure	• Enter the friendly name (up to 63 characters) using ▲ and ▼ keys, and press the Menu/Select key. **NOTE** • **When the setting is changed, turn off the power switch and turn it on again more than 10 seconds after.**

<Printer Info.>

Functions Use	• To set the WS printer information.
Setting/ Procedure	• Enter the friendly name (up to 63 characters) using ▲ and ▼ keys, and press the Menu/Select key. **NOTE** • **When the setting is changed, turn off the power switch and turn it on again more than 10 seconds after.**

F. SNMP

(1) SNMP Setting

Functions	• To set whether to use SNMP (Simple Network Management Protocol) or not. • To set the SNMP version to be used.
Use	• Not to use SNMP. • To readout management information base and to enter community name for writing.
Setting/ Procedure	• The default setting is ON. "ON" OFF • To individually set whether or not to use SNMP v1/v2c (IP), SNMP v3 (IP), and SNMP v1 (IPX). • The default setting is ON. "ON" OFF

(2) UDP Port Number

Functions	• To set the UDP standby port number which is used for SNMP (IP).
Use	
Setting/ Procedure	• Enter the port number between 1 and 65535 using ▲ and ▼ keys.

(3) SNMP v1/v2c Setting

Functions	• To conduct setting when using SNMP v1/v2c.
Use	• To use when changing write setting. • To use when entering the community name for reading the Management Information Base (MIB) and writing to it.
Setting/ Procedure	<Read Community> • Enter a Read community name. <Write Setting> • The default setting is ON. "ON" OFF **NOTE** • **[ON] cannot be selected when the following setting is set to "ON." [Admin. Settings] → [Security Settings] → [EnhancedSecurity]** <Write Community> • Enter a Write community name.

(4) SNMP v3 Settings

<Context Name>

Functions	• Set the context name which is used for SNMP v3.
Use	
Setting/ Procedure	• Enter the context name (up to 64 characters) using ▲ and ▼ keys, and press the Menu/Select key.

<Discovery User>

Functions Use	• To set whether or not to enable the discovery authority user which is used for SNMP v3.
Setting/ Procedure	• The default setting is ON. "ON" OFF

<Discovery User Name>

Functions Use	• To set the name of the discovery authority Users which is used for SNMP v3.
Setting/ Procedure	• Enter the discovery user name (up to 32 characters) using ▲ and ▼ keys, and press the Menu/Select key. **NOTE** • **The user name same with the read user name or the write user name cannot be set.**

<Read User Settings: Read User Name>

Functions Use	• To set the read-only user name used for SNMP v3.
Setting/ Procedure	• Enter the read user name (up to 32 characters) using ▲ and ▼ keys, and press the Menu/Select key. **NOTE** • **The user Name same with the discovery user name cannot be used.**

<Read User Settings: Security Level>

Functions	• To set the security level of the read-only user used for SNMP v3.
Use	• To use when changing the security level of the read-only user. OFF : No authentication will be conducted when the read-only user accesses. Auth-password : Conducts authentication only for the authentication password when the read-only user accesses. Auth/Priv-password : Conducts authentication by authentication password and privacy password when read-only User accesses.
Setting/ Procedure	• The default setting is Auth/Priv-password. OFF Auth-password "Auth/Priv-password"

<Read User Settings: Password>

Functions Use	• To set the Authentication password for the read-only User which is used for SNMP v3.
Setting/ Procedure	*1.* Select a type of password. *2.* Enter the password (up to 32 characters) using ▲ and ▼ keys, and press the Menu/Select key.

<Write User Settings: Write User Name>

Functions Use	• To set the name of the reading/writing authority user which is used for SNMP v3.
Setting/ Procedure	• Enter the write user name (up to 32 characters) using ▲ and ▼ keys, and press the Menu/Select key. **NOTE** • **The user name same with the discovery use name cannot be used.**

<Write User Settings: Security Level>

Functions	• To set the security level for the reading/writing authority user which is used for SNMP v3.
Use	• To use for changing the security level of the reading/writing authority user. OFF : Authentication will not be conducted when reading/writing authority user accesses. Auth-password : Conducts authentication only with authentication password when reading/writing authority user accesses. Auth/Priv-password : Conducts authentication by authentication password and privacy password when reading/writing authority user accesses.
Setting/ Procedure	• The default setting is Auth/Priv-password. OFF Auth-password “Auth/Priv-password” **NOTE** • **[OFF] cannot be selected when the following setting is set to “ON.” [Admin. Settings] → [Security Settings] → [EnhancedSecurity]**

<Write User Settings: Password>

Functions Use	• To set the Authentication password for the write-only User which is used for SNMP v3.
Setting/ Procedure	*1.* Select a type of password. *2.* Enter the password (up to 32 characters) using ▲ and ▼ keys, and press the Menu/Select key.

<Encrypt Algorithm>

Functions Use	• To set the Encrypt Algorithm to be used for SNMP v3.
Setting/ Procedure	• The default setting is DES. “DES” AES_128

<Auth. Method>

Functions Use	• To set the Auth. Method to be used for SNMP v3.
Setting/ Procedure	• The default setting is MD5. “MD5” SHA-1

(5) TRAP Settings

<TRAP Settings>

Functions Use	• To select whether to allow or restrict TRAP Settings of SNMP.
Setting/ Procedure	• The default setting is Allow. "Allow" Restrict

<TRAP when Auth. Fails>

Functions Use	• To select whether or not to use TRAP when Auth. Fails.
Setting/ Procedure	• The default setting is OFF. ON "OFF"

G. AppleTalk

NOTE

- **When the setting is changed, turn off the power switch and turn it on again more than 10 seconds after.**

(1) AppleTalk Setting

Functions	• To set whether to enable or disable the AppleTalk setting.
Use	• To use AppleTalk setting.
Setting/ Procedure	• The default setting is OFF. ON "OFF"

(2) Printer Name

Functions	• To set the printer name displayed on the AppleTalk network.
Use	• To set the printer name displayed on the AppleTalk network.
Setting/ Procedure	• Enter the printer name (up to 31 characters) using ▲ and ▼ keys, and press the Menu/Select key.

(3) Zone Name

Functions	• To set the zone name connected with AppleTalk network.
Use	• To set the zone name connected with AppleTalk network.
Setting/ Procedure	• Enter the zone name (up to 31 characters) using ▲ and ▼ keys, and press the Menu/Select key.

H. Bonjour

(1) Bonjour Setting

Functions	• To set whether or not to use the Bonjour setting.
Use	• To use when operating under the Bonjour service environment.
Setting/ Procedure	• The default setting is ON. "ON" OFF

(2) Bonjour Name

Functions	• To set the bonjour name.
Use	• To set the name for identifying over the bonjour network.
Setting/ Procedure	• Enter the Bonjour name (up to 64 characters) using ▲ and ▼ keys, and press the Menu/Select key.

I. TCP Socket

(1) TCP Socket

Functions	• To set whether or not to set the TCP socket. • To set the port number for TCP socket transmission.
Use	• To use when using the application, etc. for TCP socket transmission. • To be used when entering the port number used for TCP socket transmission.
Setting/ Procedure	<Port Setting> • The default setting is ON. "ON" OFF <SSL/TLS Setting> • It will be displayed when certificate is issued from PageScope Web Connection. • The default setting is ON. "ON" OFF <Port Number Setting> • Enter the port number between 1 and 65535 using ▲ and ▼ keys. **NOTE** • **When Network speed setting is changed, turn off the power switch and turn it on again more than 10 seconds after.**

(2) TCP Socket ASCII

Functions	• To set whether or not to set the TCP socket for ASCII mode. • To set the port number which is used for TCP socket transmission by ASCII mode.
Use	• To use when using the application, etc. for TCP socket transmission by ASCII mode. • To use when entering the port number for TCP socket transmission by ASCII mode.
Setting/ Procedure	<Port Setting> • The default setting is ON. "ON" OFF <Port Number> • Enter the port number between 1 and 65535 using ▲ and ▼ keys. **NOTE** • **When Network speed setting is changed, turn off the power switch and turn it on again more than 10 seconds after.**

J. Detail Settings

(1) Network Speed

Functions	• To set the network speed.
Use	• To set the specific network speed.
Setting/ Procedure	• The default setting is Auto Setting. "Auto Setting" 10Mbps HalfDuplex 10Mbps FullDuplex 100MbpsHalfDuplex 100MbpsFullDuplex 1000MbpFullDuplex **NOTE** • **When Network speed setting is changed, turn off the power switch and turn it on again more than 10 seconds after.**

(2) Time Adjustment Setting

<NTP Setting>

Functions	• To set whether to enable or disable the NTP setting.
Use	• To synchronize the time between the server and the client.
Setting/ Procedure	• The default setting is OFF. ON "OFF"

<NTP Server Address>

Functions	• To set the NTP server address.
Use	• To enter the NTP server address.
Setting/ Procedure	<Input Host Name> • Enter the host name. <Address Input> • Select [Enter IPv4Address] or [Enter IPv6Address] and enter a host address.

<Port Number>

Functions	• To set the NTP server address.
Use	• To enter the NTP server address.
Setting/ Procedure	• Enter the port number between 1 and 65535 using ▲ and ▼ keys.

(3) When Invalid Cert.

Functions	• To set how to process the job when SSL certificate becomes invalid.
Use	
Setting/ Procedure	• The default setting is Continue. Delete the Job "Continue"

(4) PING Confirmation

Functions	• To set the TCP/IP network diagnosis by PING.
Use	• To check the condition of TCP/IP network.
Setting/ Procedure	<Input Host Name> • Enter a host name. <Address Input> • Select [Enter IPv4Address] or [Enter IPv6Address] and enter a host address. <Check Connection> • Select [Check Connection] key and press the Menu/Select key to check the connection.

8.8.3 Printer Settings

A. USB Timeout

Functions	• To set a period of time that elapses before input and output timeouts of communication are activated.
Use	• To set a period of time that elapses before input and output timeouts of communication are activated.
Setting/ Procedure	• The default setting is 0060 sec for input and output timeouts. "0060 sec" (0010 to 1000 sec)

B. Network Timeout

Functions	• To set a period of time that elapses before input and output timeouts of communication are activated.
Use	• To set a longer time period when timeout happens under some network statuses.
Setting/ Procedure	• The default setting is 0060 sec for input and output timeouts. "0060 sec" (0010 to 1000 sec)

C. Print XPS Errors

Functions	• To set whether to print error information when an error occurs while printing a XPS file.
Use	
Setting/ Procedure	• The default setting is ON. "ON" OFF

8.8.4 System Connection

A. OpenAPI Settings

(1) Access Setting

Functions	• To allow or restrict the access from other systems with OpenAPI when using Page Scope Data Administrator.
Use	• To restrict access from other systems with OpenAPI.
Setting/ Procedure	• The default setting is Allow. "Allow" Restrict

(2) Enable SSL

- It will be displayed when certificate is issued from PageScope Web Connection.

Functions	• To set whether to encrypt access from other systems by SSL when using Page Scope Data Administrator.
Use	• To encrypt access by SSL from other systems using OpenAPI.
Setting/ Procedure	• The default setting is OFF. ON “OFF”

(3) Authentication

Functions	• To set whether to authenticate access of other systems which uses OpenAPI when using PageScope Data Administrator.
Use	• To set authentication of the access from other systems using OpenAPI.
Setting/ Procedure	• The default setting is OFF. ON “OFF” • When setting to [ON], enter the auth. login name and the auth. password to be set.

(4) Port Number Setting

Functions	• To set the access port for other systems with OpenAPI when using PageScope Data Administrator.
Use	• To change the access port number for other systems with OpenAPI.
Setting/ Procedure	*1.* Select Port Number or Port Number (SSL), and press the Menu/Select key. *2.* Enter the port number between 1 and 65535 using ▲ and ▼ keys.

B. Call Remote Center

- It will be displayed when the setup at the CS Remote Care center is complete.

Functions Use	• To call the CS Remote Care center from the administrator, when the CS Remote Care setup is complete.
Setting/ Procedure	For details, see “CS Remote Care.” See P.247

8.9 Admin. Settings

8.9.1 Security Settings

A. Admin. Password

Functions	• To set/change the administrator password.
Use	• To change the administrator password.
Setting/ Procedure	• Enter the administrator password on the on-screen keyboard. Current Password : Enter the current administrator password New Password : Enter the new administrator password to be used RetypeNewPassword : Retype the new administrator password **NOTE** • **When [Admin. Settings] → [Security Settings] → [Security Details] leads to [Password Rules] being ON, the password with the same letters, the password which is same as the previous one and the password of less than eight digits cannot be changed.**

B. Admin. Sec. Levels

Functions	• To set the level for administrator settings item open to the user.
Use	• To make part of the administrator settings items open to the user.
Setting/ Procedure	• The default setting is OFF. ON Minimum "OFF"

C. Security Details

(1) Password Rules

Functions	• To set whether to apply the password rules.
Use	• To apply the password rule to enhance security. • Passwords to be covered: CE (service) password, administrator password, user box password, user password, account track password, passwords for confidential documents. • Details of the password rules: Password except user password, user box password shall be 8 digits of one-bite alphanumeric characters. (Case-sensitive) User password shall be 8 digits of one-bite alphanumeric characters. (Case-sensitive) User box password shall be 8 digits of one-bite alphanumeric characters. Password with only the same letter is prohibited. Password same with the one prior to change is prohibited. When the password rule is set to [ON], the password cannot be changed or registered unless it follows the above conditions.
Setting/ Procedure	• The default setting is OFF. ON "OFF" **NOTE** • **[OFF] cannot be selected when the following setting is set to "ON."** **[Admin. Settings] → [Security Settings] → [EnhancesSecurity]**

(2) Prohibit Functions

<table>
<tr><td>Functions</td><td>• To set the function for prohibiting authentication operation in order to prevent the unauthorized access.</td></tr>
<tr><td>Use</td><td>• To use when setting the system to prohibit authentication failure when conducting authentication by password, etc.
• Authentications which are subjected to this function: CE authentication, administrator authentication, user+ accounts authentication, SNMP authentication, secure print authentication, user box authentication.

Mode 1 : When failed to authenticate, authentication operation (entering the password) will be prohibited for a certain period of time.
Mode 2 : When failed to authenticate, authentication operation (entering the password) will be prohibited for a certain period of time.
The number of times failure occurred will be counted, and when the number reaches to the specified time, authentication will be prohibited and the access will be locked.
When the access is locked, select [Release] on the main body, or turn power switch OFF/ON to cancel it.
For CE authentication and administrator authentication, only turning power switch OFF/ON will cancel it.
When the machine goes into an access lock condition, release the lock in the following procedure.

<table>
<tr><td>user+ account
SNMP
secure print
user box</td><td>• Select keys in the following order. [Admin. Settings] → [Security Settings] → [Security Details] → [ProhibitFunctions].
Then select [Release] and press the Menu/Select key.</td></tr>
<tr><td rowspan="2">Administrator authentication</td><td>• After the power switch is turned OFF and ON, the access lock is released automatically after the lapse of a predetermined period of time.</td></tr>
<tr><td>• [Service Mode] → [Security Settings] → [Admin.AuthLockREL]</td></tr>
<tr><td>CE authentication</td><td>• Turn power ON with the Menu/Select key held down; then, on the Trouble Reset screen, press ▲ → ▶ → ▼ → ◀ → ▼ → ▶ → ▲. This starts the access lock release timer (set by the Release Time function).The access lock state is thereafter released when the period of time set in this function elapses.

NOTE
• If the access lock state is released through the above procedure, do not turn power OFF until the time elapses as set through [Service Mode] → [Security Settings] → [Release Time]. If the power is turned OFF before the timer set for release time expires, the lock release operation becomes invalid.</td></tr>
</table>
</td></tr>
</table>

Setting/ Procedure	• The default setting is Mode 1. "Mode 1" Mode 2 **NOTE** • **[Mode 1] cannot be selected when the following setting is set to "ON."** **[Admin. Settings] → [Security Settings] → [EnhancedSecurity]** **Only the number of times for trials up to the access lock can be changed.** • When [Mode 2] is selected, set the number of times where checks are made before access is locked. • Select [Release Time] and set a period of time that elapses before access lock is released.

(3) Security Print Access

Functions	• To display the status of the authentication system on the control panel for the confidential document access.
Use	• It cannot be changed at the operator's option since it will automatically be set according to the [ProhibitFunctions] setting. • It will be set to [Mode 1] when [ProhibitFunctions] is set to [Mode 1]. It will be set to [Mode 2] when [ProhibitFunctions] is set to [Mode 2]. Mode 1 : This mode is for authentication by confidential document ID and password. It displays the list of the corresponding confidential document to print them. Mode 2 : This mode is for authentication by confidential document ID. It displays the list of the corresponding confidential document, and print them with authentication by password. **NOTE** • **[Mode 1] cannot be selected when the following setting is set to "ON."** **[Admin. Settings] → [Security Settings] → [EnhancedSecurity]**
Setting/ Procedure	• The default setting is Mode 1. "Mode 1" Mode 2

(4) Print Data Capture

Functions	• To set whether to allow or restrict capturing the print job data.
Use	• To be used when carrying out [Service Mode] → [System Settings] → [Data capture].
Setting/ Procedure	• The default setting is Allow. "Allow" Restrict **NOTE** • **[Allow] cannot be selected when the following setting is set to "ON."** **[Admin. Settings] → [Security Settings] → [EnhancedSecurity]**

(5) Delete Job History

Functions	• Clear the all job logs.
Use	
Setting/ Procedure	• Select [Start] on the confirmation screen and press the Menu/Select key.

(6) Audit Log

- It will be displayed when the following setting shows that switch No.42 is set to [01] at Hex assignment.
  [Service Mode] → [System Settings] → [SoftwareSWSettings]

Functions	• Selects whether to keep logs of operations and access made by users and service engineers. • To set whether to overwrite existing logs.
Use	• To ensure security, this settings is used to keep logs of operations and access including security settings changes, authentication, and job executions by users and service engineers. • Audit logs are saved in HDD and NVRAM.
Setting/ Procedure	<Audit Log Setting> • The default setting is OFF. ON "OFF" **NOTE** • **After selecting "ON", the power switch must be turned OFF and ON so that the new setting takes effect.** • **When ON is selected in [Admin. Settings] → [Security Settings] → [Enhanced-Security], this setting is automatically set to "ON."** <OverwriteAuditLog> • Set whether to allow or restrict overwriting existing logs when saving audit logs. • The default setting is Restrict. Allow "Restrict" <Delete Audit Log> • To erase audit logs, Select [Delete Audit Log] → [Yes].

D. Enhanced Security

Use	• To set whether or not to enhance security.
Setting/ Procedure	• To use when enhancing the security function at user's option. • The following settings are necessary for setting the security enhancement "ON". Admin. Password : Change it with the one which meets password rules. HDD Lock Password or Encryption word : Set the HDD lock password or encryption word with 20 characters. (It can be set only when HDD is mounted. Encryption word can be set only when SC-503 is mounted.) SSL Certificate : Register self-certificate for SSL communication from the PSWC. CE (Service) Password : Change it with the one which meets password rules. CS Remote Care : Conduct RAM clear, and cancel the setting. Auth. Device Setting : Set to "Not Installed."
Use	• The default setting is OFF. ON "OFF"

NOTE

- **Setting the EnhancedSecurity "ON" will change the setting values for the following functions.**

Name of the function	Default setting	When Enhanced Security Mode is ON
ProhibitFunctions	Mode 1	Mode 2 (Cannot be changed) set to three times *Can change times (from once to three times)
Password Rules	OFF	ON (Cannot be changed)
# of Auth Attempts	3	3
Release Time	5 min.	The lower limit of settable range is 5 minutes. (Cannot be set to less than 5 minutes)
PrintDataCapture	Allowed	Prohibited (Cannot be changed)
Overwrite HDDdata	OFF	Setting cannot be changed to OFF
SNMPv1/v2c Write Setting	ON	OFF
SNMPv3 Write User Security Level	Auth/Priv-password	Setting cannot be changed to OFF
TCP Socket (SSL)	ON	OFF
OpenAPI SSL Setting	OFF	ON
Firmware Update	-	Not displayed
Audit Log	OFF	ON
Release Time (Service Mode)	5 min.	The lower limit of settable range is 5 minutes. (Cannot be set to less than 5 minutes)
Internet ISW (Service Mode)	Disabled	Disabled (Cannot be changed)

E. HDD Settings

• It will be displayed only when the optional hard disk (HD-508) is mounted.

(1) Format HDD

Functions	• To conduct logical formatting of HDD.
Use	• To initialize HDD. **NOTE** **• It is subject to logical formatting here, therefore if starting with physical formatting, follow as [Service Mode] → [Machine Status] → [HDD Format].**
Setting/ Procedure	*1.* Select [Format HDD] → [Start]. *2.* Press the Menu/Select key. *3.* Turn off the power switch and turn it on again more than 10 seconds after.

(2) Check HDD Capacity

Functions	• To display the used space capacity, total space capacity, and the remaining capacity of the hard disk.
Use	• To check the capacity and the status of use of the hard disk.

(3) Overwrite All Area

Functions	• To delete the whole data in the hard disk by overwriting. • To initialize the area of use for the user stored in NVRAM.
Use	• To use when disposing of the hard disk. • Select the overwriting method from Mode 1 through 8. Mode 1 : It overwrites 0x00 once. Mode 2 : Overwrites with random numbers → overwrites with random numbers → overwrites with 0x00 Mode 3 : Overwrites with 0x00 → overwrites with 0xff → overwrites with random numbers → verifies Mode 4 : Overwrites with random numbers → overwrites with 0x00 → overwrites with 0xff Mode 5 : Overwrites with 0x00 → overwrites with 0xff → overwrites with 0x00 → overwrites with 0xff Mode 6 : Overwrites with 0x00 → overwrites with 0xff → overwrites with 0x00 → overwrites with 0xff → overwrites with 0x00 → overwrites with 0xff → overwrites with random numbers Mode 7 : Overwrites with 0x00 → overwrites with 0xff → overwrites with 0x00 → overwrites with 0xff → overwrites with 0x00 → overwrites with 0xff → overwrites with 0xaa Mode 8 : Overwrites with 0x00 → overwrites with 0xff → overwrites with 0x00 → overwrites with 0xff → overwrites with 0x00 → overwrites with 0xff → overwrites with 0xaa → verifies
Setting/ Procedure	*1.* Select [OverwriteAllArea] → [Mode X] → [Start]. *2.* Press the Menu/Select key. *3.* Turn off the power switch and turn it on again more than 10 seconds after.

(4) Overwrite HDD data

- When the image becomes unnecessary, temporary data overwrite function will write meaningless data over all area where images are stored, and destroy the image data itself.
  The structure of image data will be destroyed so that in case HDD is stolen, the remaining data included in the image data will not leak. Using the HDD lock password function or optional security kit (SC-503) along with this function will provide a high level of security which prevents images of great importance from leaking. It is recommended to use HDD lock password function or security kit (SC-503) along with this function for those who require high level of security.

Functions	• To set whether or not to use overwrite temporary data.
Use	• To use when making temporary data overwrite function valid. • All data are temporarily written into HDD or memory during PC print. When the operation is complete, perform overwriting to the area data were once written in HDD or memory in order to enhance security. • To change overwriting method to use temporary data overwrite function. Mode 1: To overwrite 0x00 one time. Mode 2: Overwrite 0x00 → overwrite 0xff → overwrite 0x61 →validation
Setting/ Procedure	• The default setting is OFF. Mode 1 Mode 2 “OFF” **NOTE** • **[OFF] cannot be selected when the following setting is set to “ON.” [Admin. Settings] → [Security Settings] → [EnhancedSecurity]**

(5) Overwrite Priority

Functions	• To set overwriting method to use temporary data overwrite function.
Use	• “Encryption Priority/Overwrite Priority” can be selected when the optional security kit SC-503 is mounted. Encryption Priority : When the encryption word is set, the security level of the data will be enhanced before writing to HDD. When erasing data, they will all be converted into encryption data before overwritten. Therefore, overwriting will be executed with the value besides the value specified by the selected mode. Overwrite Priority : Standard encryption method will be applied to data written to HDD even when the encryption word is set, so overwriting and erasing will be performed without fail using the specified value in the selected mode. It is used for performing the overwriting and erasing according to the HDD data erase standard. **NOTE** • **It is necessary to make HDD format when encryption priority/overwrite priority setting is changed.**
Setting/ Procedure	• The default setting is Encryption Priority. (Only when the optional security kit SC-503 is mounted.) “Encryption Priority” Overwrite Priority

(6) Register HDD Lock PW

Functions	• To set the lock password for the hard disk.
Use	• To enter, change or delete the lock password for the hard disk.
Setting/ Procedure	*1.* Enter the password (20 characters) using ▲ and ▼ keys and press the Menu/ Select key. **NOTE** **• Password using only a single letter is not acceptable.** **• Don't forget the password. When the password is forgotten, the replacement of hard disk is needed.** *2.* Re-enter the password to confirm. *3.* Turn OFF the power switch and turn it ON again more than 10 seconds after.

(7) HDD Encryption Set

• It can be set only when the optional security kit (SC-503) is mounted.

Functions	• To set encryption key necessary to mount the optional security kit SC-503.
Use	• To setup security kit SC-503. • To re-set encrypting word due to exchange of NVRAM board or etc. **NOTE** **• This setting is available only when the optional security kit SC-503 is mounted.** **• HDD formatting is required after this setting. Therefore it is necessary to retrieve certain data from HDD in advance.** **The following data will be lost after HDD formatting.** **① Authentication data : Authentication mode, user authentication setting, account track setting** **② Box setting data : Box and text in the box, setting information of each box** **③ Job history**
Setting/ Procedure	*1.* Select [HDD EncryptionSet]. *2.* Enter encryption key (20 characters) using ▲ and ▼ keys and press the Menu/ Select key. **NOTE** **• Double-byte and identical characters are not acceptable.** *3.* Turn off the power switch and turn it on again more than 10 seconds after. *4.* Open [Admin. Settings] and conduct HDD formatting according to the instruction appeared on the panel. *5.* Turn off the power switch and turn it on again more than 10 seconds after.

F. Driver Encryption

Functions Use	• To set whether to use the factory default encryption word or user-defined one as a common key that encrypts a password used for a print job. User-Defined : Sets an encryption word. Enter an encryption word of 20 letters. Factory Default : Uses the factory default encryption word (Undisclosed predefined encryption key). **NOTE** • **When selecting [User-Defined], set an encryption key being consisted of the same letters in the printer driver. If the encryption word set in the main body differs from the encryption key set in the printer driver, different encrypted passwords are created and printing cannot be made.** • **The use of OpenAPI allows an encryption key to be obtained from the main body.**
Setting/ Procedure	<Encryption Setting> • The default setting is Factory Default. "Factory Default" User-Defined <EncryptPassphrase> *1.* Select [EncryptPassphrase]. *2.* Enter the password (20 characters) using ▲ and ▼ keys and press the Menu/Select key. *3.* Re-enter the password to confirm.

8.9.2 User Box Settings

A. Delete User Box

Functions Use	• To delete the unnecessary box without data.
Setting/ Procedure	*1.* Select the box to be deleted. *2.* Select [Start] and press the Menu/Select key.

B. Delete Secure Print

Functions Use	• To delete the whole classified documents in the box.
Setting/ Procedure	• Select [Start] and press the Menu/Select key.

C. Delete Time

(1) Secure Print Box

Functions Use	• To set whether or not to delete the confidential documents in the box after a certain period of time. It also sets the period of time to store data.
Setting/ Procedure	• The default setting is 1 Day. Do not delete. 12 Hours "1 Day" 2 Days 3 Days 7 Days 30 Days

(2) Encrypted PDF Box

Functions Use	• Specifies whether to delete encrypted PDF data stored in the box after a lapse of a predetermined period of time. Sets the time period for which encrypted PDF data can be stored.
Setting/ Procedure	• The default setting is 1 Day. Do not delete. 12 Hours "1 Day" 2 Days 3 Days 7 Days 30 Days

(3) Touch & Print Box

Functions Use	• Specifies whether to delete touch & print data stored in the box after a lapse of a predetermined period of time. Sets the time period for which touch & print data can be stored
Setting/ Procedure	• The default setting is 1 Day. Do not delete. 12 Hours "1 Day" 2 Days 3 Days 7 Days 30 Days

D. Doc. Hold Setting

Functions Use	• Selects whether to store the document again in the box after it was retrieved from the box. • If the function is set to No, the document is automatically deleted after it was retrieved.
Setting/ Procedure	• The default setting is ON. "ON" OFF

8.9.3 Auth Device Setting

• It will be displayed only when the optional authentication device is mounted.

A. Card Auth. Settings

Functions Use	• To select, and make the operation setting for, the IC Card Type.
Setting/ Procedure	<IC Card Type> • The default setting is Type A. "Type A" FeliCa <Operating Setting> • The default setting is Card. "Card" Card + Password

B. Bio Auth. Settings

Functions Use	• To set the beep sound and make the operation setting for it.
Setting/ Procedure	<Beep Sound> • The default setting is ON. "ON" OFF <Operating Setting> • The default setting is 1-to-many Auth. "1-to-many Auth." 1-to-1 Auth.

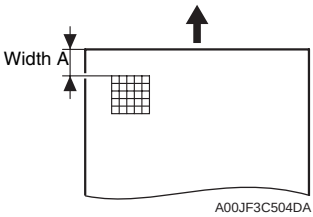
C. Touch & Print

Functions Use	• Specifies whether to store jobs in the touch & print box when bio authentication is used.
Setting/ Procedure	<Touch&PrintUserBox> • The default setting is Yes. "Yes" No <Print> • The default setting is Print All Jobs. "Print All Jobs." Print Each Job.

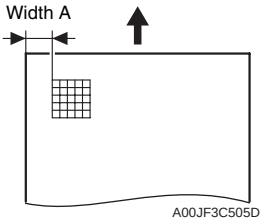
8.9.4 Expert Adjustment

A. Printer Adjustment

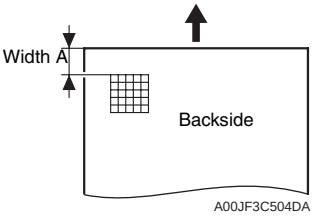
(1) Leading Edge Adjust.

Functions	• To vary the print start position in the sub scan direction for each of different paper types in the tray 1.
Use	• The PH unit has been replaced. • The paper type has been changed. • The printed image deviates in the sub scan direction. • A faint image occurs on the leading edge of the image. • Able to make an individual adjustment for each paper type of plain paper, thick 1, thick 2, thick 3, thick 4, transparency, and envelope.
Adjustment Specification	 A00JF3C504DA Width A on the test pattern produced should fall within the following range. Specifications: 4.2 ± 0.5 mm Setting range: -3.0 mm to +3.0 mm (in 0.2 mm increments)
Adjustment Instructions	If width A is longer than the specifications, make the setting value smaller than the current one. If width A is shorter than the specifications, make the setting value greater than the current one.
Setting/ Procedure	*1.* Place A3 paper on the tray 1. *2.* Call the Admin. Settings to the screen. *3.* Select [Expert Adjustment] → [PrinterAdjustment] → [Leading Edge Adj.]. *4.* Select the [Plain paper]. *5.* Select [Print] and press the Menu/Select key to let the machine produce a test pattern. *6.* Check the dimension of width A on the test pattern. *7.* If width A falls outside the specified range, change the setting using ▲ and ▼ keys. *8.* Press the Menu/Select key to let the machine produce a test pattern. *9.* Check the dimension of width A on the test pattern. *10.*If width A is outside the specified range, change the setting again and make a check again. *11.*If width A falls within the specified range, press the Menu/Select key. *12.*Following the same procedure, adjust for thick 1 to 4, transparency, and envelope.

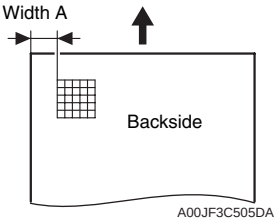
(2) Centering

Functions	• To vary the print start position in the main scan direction for each paper source.
Use	• The PH unit has been replaced. • A paper feed unit has been added. • The printed image deviates in the main scan direction.
Adjustment Specification	 A00JF3C505DA Width A on the test pattern produced should fall within the following range. Specifications: 3.0 ± 0.5 mm Setting range: -3.0 mm to +3.0 mm (in 0.2 mm increments)
Adjustment Instructions	If width A is longer than the specifications, make the setting value smaller than the current one. If width A is shorter than the specifications, make the setting value greater than the current one.
Setting/ Procedure	*1.* Call the Admin. Settings to the screen. *2.* Select [Expert Adjustment] → [PrinterAdjustment] → [Centering]. *3.* Select the paper source to be adjusted. *4.* Select [Print] and press the Menu/Select key to let the machine produce a test pattern. *5.* Check the dimension of width A on the test pattern. *6.* If width A falls outside the specified range, change the setting using ▲ and ▼ keys. *7.* Press the Menu/Select key to let the machine produce a test pattern. *8.* Check the dimension of width A on the test pattern. *9.* If width A is outside the specified range, change the setting again and make a check again. *10.*If width A falls within the specified range, press the Menu/Select key. *11.*Following the same procedure, adjust for all other paper sources. (Use A4 or 8 $^{1}/_{2}$ × 11 plain paper for the tray 1.)

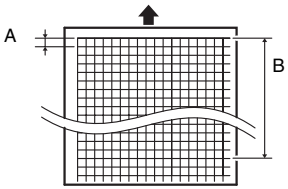
(3) Leading (Duplex)

Functions	• Makes an adjustment by changing the image write start position in the sub scan direction on the 2nd side of duplex printing for individual types of paper.
Use	• When the 2nd side image on paper fed from the tray is shifted in the sub scan direction. • Able to make an individual adjustment for each paper type of plain paper, thick 1, thick 2 and thick 3.
Adjustment Specification	 Width A on the test pattern produced should fall within the following range. Specifications: 4.2 ± 0.5 mm Setting range: -3.0 mm to +3.0 mm (in 0.2 mm increments)
Adjustment Instructions	If width A is longer than the specifications, make the setting value smaller than the current one. If width A is shorter than the specifications, make the setting value greater than the current one.
Setting/ Procedure	*1.* Call the Admin. Settings to the screen. *2.* Select [Expert Adjustment] → [PrinterAdjustment] → [Leading(Duplex)]. *3.* Select the [Plain paper]. *4.* Select [Print] and press the Menu/Select key to let the machine produce a test pattern. *5.* Check the dimension of width A on the test pattern. *6.* If width A falls outside the specified range, change the setting using ▲ and ▼ keys. *7.* Press the Menu/Select key to let the machine produce a test pattern. *8.* Check the dimension of width A on the test pattern. *9.* If width A is outside the specified range, change the setting again and make a check again. *10.*If width A falls within the specified range, press the Menu/Select key. *11.*Following the same procedure, adjust for thick 1 to 3.

(4) Centering (Duplex)

Functions	• To vary the print start position in the main scan direction for each paper source in the 2-sided mode.
Use	• To use when the optional automatic duplex unit AD-503 is set up. • The image on the backside of the 2-sided print deviates in the main scan direction.
Adjustment Specification	 •Width A on the test pattern produced should fall within the following range. •For measurement, use the image produced on the backside of the test pattern. Specifications: 3.0 ± 0.5 mm Setting range: -3.0 mm to +3.0 mm (in 0.2 mm increments)
Adjustment Instructions	• If width A is longer than the specifications, make the setting value smaller than the current one. • If width A is shorter than the specifications, make the setting value greater than the current one.
Setting/ Procedure	*1.* Call the Admin. Settings to the screen. *2.* Select [Expert Adjustment] → [PrinterAdjustment] → [Centering(Duplex)]. *3.* Select the paper source to be adjusted. *4.* Select [Print] and press the Menu/Select key to let the machine produce a test pattern. *5.* Check the dimension of width A on the test pattern. *6.* If width A falls outside the specified range, change the setting using ▲ and ▼ keys. *7.* Press the Menu/Select key to let the machine produce a test pattern. *8.* Check the dimension of width A on the test pattern on the backside of the printed image. *9.* If width A is outside the specified range, change the setting again and make a check again. *10.*If width A falls within the specified range, press the Menu/Select key. *11.*Following the same procedure, adjust for all other paper sources. (Use A4 or 8 $^{1}/_{2}$ × 11 plain paper for the manual tray 1.)

(5) Vertical Adjustment

Functions	• To synchronize the paper transport speed with the image writing speed.
Use	• The l adjustment becomes necessary. • The printed image distorts (stretched, shrunk). • When the printed image is stretched in the sub scan direction. • Able to make an individual adjustment for each paper type of plain paper, thick 1, thick 2, thick 3 and thick 4.
Adjustment Specification	 A00JF3C506DA Width A and width B on the test pattern produced should fall within the following ranges. Width A: equivalent to one grid Width B: equivalent to 48 grids Specifications A: 7.9 to 8.3 B: 389.1 to 392.1 Setting Range A, B: -7 to +7
Adjustment Instructions	If width A or B is longer than the specifications, make the setting value smaller than the current one. If width A or B is shorter than the specifications, make the setting value greater than the current one.
Adjustment Procedure	*1.* Load tray 1 with A3 or 11 × 17 plain paper. *2.* Call the Admin. Settings to the screen. *3.* Select these keys in this order: [Expert Adjustment] → [PrinterAdjustment] → [Vertical Adj.]. *4.* Select [Print] and press the Menu/Select key to let the machine produce a test pattern. *5.* Check width A (equivalent to one grid) and width B (equivalent to 48 grids) on the test pattern. *6.* If width of A or B falls outside the specified range, change the setting using ▲ and ▼ keys. *7.* Press the Menu/Select key to let the machine produce a test pattern again. *8.* Check width A and width B on the test pattern. *9.* If width A or B falls outside the specified range, change the setting value and make a check again. *10.*If width A or B falls within the specified range, press the Menu/Select key. *11.*Following the same procedure, adjust for [Thick 1 to 4].

(6) Erase Leading Edge

Functions	• To set the leading edge erase amount of the paper.
Use	• To change the width of the area not printed along the leading edge of the paper.
Setting/ Procedure	• The default setting is “4 mm”. “4 mm” 5 mm 7 mm **NOTE** • **When “4 mm” is selected, 4.2 mm is the actual amount to be erased in print based on the control system of the machine.**

B. Finisher Adjustment

(1) Center Staple Pos

See P.28 of the SD-505 service manual.

See P.34 of the FS-609/PK-501 service manual.

(2) Half-Fold Pos.

See P.26 of the SD-505 service manual.

See P.35 of the FS-609/PK-501 service manual.

C. Density Adjustment

(1) Thick Paper Image Density-Yellow, Magenta, Cyan, Black

Functions	• To fine-adjust density of printed images of each color for thick paper and OHP transparencies. (Only black color adjustable for OHP transparencies)
Use	• To change the density of the printed image for each color with thick paper and OHP transparencies
Adjustment Range	Lighter (5 steps), “Std”, Darker (5 steps)
Adjustment Instructions	Light color: Press the ▲ key. Dark color: Press the ▼ key.
Adjustment Procedure	*1.* Call the Admin. Settings to the screen. *2.* Select [Expert Adjustment] → [DensityAdjustment]. *3.* Select a type of thick paper and a color that need to be adjusted. *4.* Press the ▼ or ▲ key to correct the image density.

(2) Black Image Density

Functions	• To fine-adjust the density of the printed image for a black print.
Use	• To vary the density of the printed image of a black print.
Adjustment Range	Lighter (2 steps), “Std”, Darker (2 steps)
Adjustment Instructions	If the black is light, press the ▲ key. If the black is dark, press the ▼ key.
Setting/ Procedure	*1.* Call the Admin. Settings to the screen. *2.* Select [Expert Adjustment] → [Density Adjustment] → [BlackImageDensity]. *3.* Press the ▼ or ▲ key as necessary to correct the image density.

D. Stabilization

(1) Initialize+Stabi.

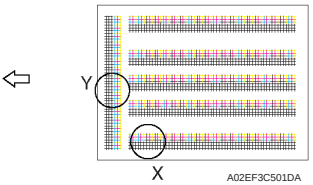
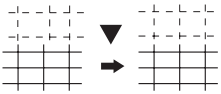
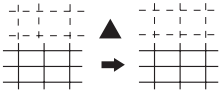
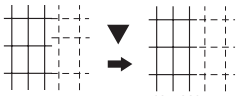
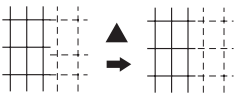
Functions	• To carry out an image stabilization sequence after the historical data of image stabilization control has been initialized.
Use	• Use if tone reproduction and maximum density are faulty even after image stabilization has been executed.
Setting/ Procedure	*1.* Call the Admin. Settings to the screen. *2.* Select [Expert Adjustment] → [Stabilization] → [Initialize+Stabi.]. *3.* Press the Menu/Select key to start Stabilizer. The LED line turns off during the Stabilizer sequence. *4.* Stabilizer is completed when the LED line turns blue.

(2) Stabilization Only

Functions	• The image stabilization sequence is carried out without clearing the historical data of image stabilization control.
Use	• When [Dmax Density] and [Background Margin] of Service Mode are changed.
Setting/ Procedure	*1.* Call the Admin. Settings to the screen. *2.* Select [Expert Adjustment] → [Image Stabilization] → [StabilizationOnly]. *3.* Press the Menu/Select key to start Stabilizer. The LED line turns off during the Stabilizer sequence. *4.* Stabilizer is completed when the LED line turns blue.

E. Color Registration

(1) Color Registration Adjust (Yellow, Magenta, Cyan)

Functions	• To adjust color shift if there is any when comparing the original with printed image of the plain or thick paper.
Use	• To correct any color shift. • Able to make an individual adjustment for each paper type of plain paper, thick 1, thick 2, thick 3 and thick 4.
Adjustment Range	"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.* Call the Admin. Settings to the screen. *2.* Select [Expert Adjustment] → [ColorRegistration]. *3.* Load tray 2 with A3/11x17 or A4/8 $^{1}/_{2}$ x11 normal paper. *4.* Select the paper type and press the Menu/Select key. *5.* Select [Print] and press the Menu/Select key. *6.* On the test pattern produced, check for deviation between the black line and the line of each color at positions X and Y. *7.* Select the color to be adjusted. *8.* Using the ▲ / ▼ key, change the setting value as necessary. (At this time, only the line of the selected color moves.) *9.* Produce another test pattern and make sure that there is no deviation. Check Procedure Check point X, Y  A02EF3C501DA Adjustment for X direction: Check point X If the cross deviates in the direction of A, increase the setting. If the cross deviates in the direction of B, decrease the setting. Direction of A  A02EF3C009DA Direction of B  A02EF3C010DA Adjustment for Y direction: Check point Y If the cross deviates in the direction of A, increase the setting. If the cross deviates in the direction of B, decrease the setting. Direction of A  A02EF3C011DA Direction of B  A02EF3C012DA

F. Test Pattern

(1) Gradation Pattern

Functions	• To produce a gradation pattern.
Use	• Used for checking gradation reproducibility.
Setting/ Procedure	• Select the color mode. "Cyan", Magenta, Yellow, Black

(2) Halftone Pattern

Functions	• To produce a solid halftone pattern.
Use	• Used for checking uneven density and pitch noise.
Setting/ Procedure	• Select the color mode. "Cyan", Magenta, Yellow, Black

8.9.5 Option Settings

A. HDD Installation

Functions	• To set when the hard disk is mounted.
Use	• Use when setting up the hard disk is mounted.
Setting/ Procedure	• The default settings are "Not Installed." Installed "Not Installed" **NOTE** **• When the setting has been changed, turn off the power switch and turn it on again more than 10 seconds after.** **• If "Installed" is selected, select [User Settings] → [System Settings] → [Power-Save Setting] → [SleepMode Setting] and set [SleepMode Setting] to "ON."** **• If "Not Installed" is selected, select [User Settings] → [System Settings] → [PowerSave Setting] → [SleepMode Setting] and set [SleepMode Setting] to "OFF."**

B. Punch Option Set

⚠1 • It will be displayed only when the optional finisher FS-519 or FS-609 is mounted.

Functions	• To set when the punch kit is mounted.
Use	• Use when setting up the punch kit is mounted.
Setting/ Procedure	<Punch Kit Type> • The default settings are "Not Installed." "Not Installed" PK-515 <# of Punch Holes> 2-Hole SWE 4-Hole EU 4-Hole 2-Hole/3-Hole

C. Auth Device Setting

- It will not be displayed when [HDD Installation] is set to “Not Installed”.
- It will be displayed only when the following setting shows that [General Settings] is set to “ON (MFP)”.
  PageScope Web Connection → [Administrator mode] → [Security] → [Authentication] → [User Auth/Account Track]

Functions	• To set whether or not the authentication device is installed.
Use	• Set when the authentication unit (biometric type or card type) is mounted. Biometric : Uses biometrics (finger vein) authentication system Card : Uses IC card authentication system • When selecting biometrics, set a film timeout interval.
Setting/ Procedure	<Auth. Mode> • The default setting is Not Installed. “Not Installed” Card Biometric <Reading Timeout> • The default setting is “10 sec”. 10 sec (5 to 60)

8.9.6 Firmware Update

Functions	• To use when upgrading the firmware.
Use	• Use when the administrator of the machine upgrades firmware.
Setting/ Procedure	See P.51

8.10 Banner Printing

- Make the setting for banner printing.

NOTE

- **Normal job cannot be accepted during banner printing mode.**

Purpose/Use	• To use when printing on the long paper.
Setting/ Procedure	• The default setting is OFF. ON “OFF”

Blank Page

9. Adjustment item list

Adjustment/setting items				No	Replace paper feed roller	Replace separation roller assy	Install LCT	Replace PH unit	Replace printer control board	Replace MFP board	Replace IDC/registration sensor/F,R
Replacement part/Service job											
Service Mode	Machine Adjustment	Printer Area	Leading Edge Adj.	1				(3)			
			Centering	2			❍	(4)			
		LD Adjust	LD Light balance	3				(2)			
	Machine Status	HDD Format		4							
	List Output	Management List	Table No.	5							
			Firmware Version	6							
	System Settings	Re-entry of setting values		7							
		Enter Serial No.		8							
	Clear Counter	Yield Counter	Counter Clear	9	❍	❍					
	Security Settings		Data Backup	10						(3)	
Re-entry of Utility settings				11							
Re-entry of Enhanced Security settings				12							
PH skew adjustment				13				(1)			
F/W upgrading				14					❍	(2)	
Remounting of NVRAM (MFP board)				15						(1)	
Replace transfer belt unit				16							❍

- 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 in the parentheses.

No	Replace hard disk	Execute initialize	Execute add. option	Execute F/W update
1				
2				
3				
4	❍			
5		(2)		
6			❍	❍
7		(4)		
8		(3)		
9				
10				
11		(1)		
12		(5)		
13				
14				
15				
16				

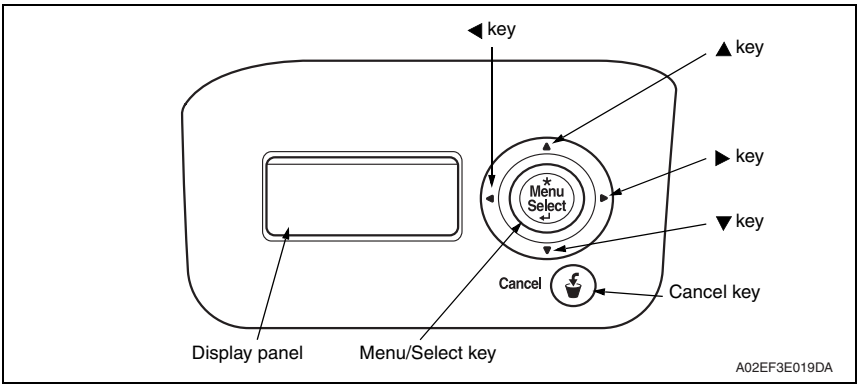
10. Service Mode

10.1 Service Mode function setting procedure

NOTE

- **Ensure appropriate security for Service Mode function setting procedures. They should NEVER be shown to any unauthorized person not involved with service jobs.**

10.1.1 Procedure



1. Make sure that the default screen (Ready to Print) is being displayed, and press the Menu/Select key on the control panel.
2. Display the Service Mode using ▲, ▼ keys.
3. Press ▶ key to open the password screen.
4. Enter the password using ▲, ▼, ▶, and ◀ keys.
5. Press the Menu/Select key to set the password.

NOTE

- **The initial setting for CE (Service) password is "92729272."**
- **When the following setting is set to "ON", CE (Service) password authentication is necessary.**
  [Admin. Settings] → [Security Settings] → [EnhancedSecurity]
- **If a wrong CE (Service) password is entered, re-enter the right password. The machine will not enter Service Mode unless the CE (Service) password is entered correctly.**
  When the following setting is set to "Mode 2", operation will be prohibited since it indicates authentication failure by failing to enter the correct CE (Service) password within the specified number of times.
  [Admin. Settings] → [Security Settings] → [Security Details] → [Release Time]
  See P.246
- **The service code entered is displayed as "∗."**

6. Display the Service Mode item to be changed using ▲, ▼, ▶, and ◀ keys.
7. Press the Menu/Select key to set the item to be changed.

NOTE

- **Be sure to change the CE (Service) password from its default value.**

10.1.2 Exiting

- Press the Cancel key.

10.1.3 Changing the setting value in Service Mode functions

- Enter the target value using ▲, ▼ keys.
- Press ► key to shift to the next digit.
- Enter the target value using ▲, ▼ keys.
- Repeat the steps 2 and 3 to enter all the necessary items.
- Press the Menu/Select key to enter the setting.

10.2 Service Mode function tree

*1: It will be displayed only when the [Internet ISW Set] is set to “ON.”
*2: Unavailable when Data Capture is prohibited on the utility mode
*3: It will be displayed only when the optional finisher is mounted.

Service Mode			Ref. Page
System Settings	Destination		P.209
	Enter Serial No.		P.209
	Initialize	Data Clear	P.210
		SystemError Clear	P.210
	Foolscap Size		P.210
	Don’t go to Sleep		P.210
	Image Controller	Select Controller	P.211
		Controller Mode	P.211
	Unit Replacement	Toner Cartridge	P.211
		Waste Toner Box	
		Imaging Unit	
		Punch Scrap Box	
	LCT Size Setting		P.212
	Data Capture *2		P.212
	SoftwareSWSetting		P.214
	Enter Setup Date		P.215
	Comm. System	CommSystemSetting	P.215
		CommSystemStatus	
	Option Setting	HDD Installation	P.215
	Maintenance Ctr	Max Allowance	P.216
		Clear Counter	
		Count Start Date	
	IU Yield Setting		P.216
	Change WarmupTime		P.217
	StatusLED Setting	Paper Remaining	P.217
	TonerNearEmpty		P.218
	AuthDeviceSetting	Auth. Mode	P.218
		Shooting Timeout	
	Inferior Cut	Tray 1	P.218
		Tray 2	
		Tray 3	
		Tray 4	
		Tray 5	
		LCT	
		CenterStaple Fold	
		Staple	

Service Mode			Ref. Page
Clear Counter	Yield Counter	All	P.219
		Tray 1	
		Tray 2	
		Tray 3	
		Tray 4	
		Tray 5	
		LCT	
		Finisher	
	JAM		P.219
	CounterSer.called		P.219
	Warning		P.219
	Counter for Mode		P.219
	TimeSeriesSerCall		P.220
	Time series JAM		P.220
List Output	Management List		P.221
	Adjustment List		P.221
Machine Status	HDD Format	Logical Format	P.222
		Physical Format	
	Memory Check		P.222
Test Mode	Running Mode		P.223
	Gradation		P.223
	Halftone Pattern		P.224
MachineAdjust-ment	Fusing Temperature	Heated Side	P.225
		Pressurized Side	
	Fusing Speed		P.226
	Printer Area	Leading Edge Adj.	P.227
		Centering	P.228
		Leading(Duplex)	P.229
		Centering(Duplex)	P.230
		Vertical Adj.	P.231
		EraseLeadingEdge	P.231
	Print Regist Loop	Tray 1	P.232
		Tray 2	
		Tray 3/4/5 LCT	
		Duplex	
	Color Reg.	Yellow	P.233
		Magenta	
		Cyan	
	LD Adjust	LD Rad delay Adj	P.234
		LD Light balance	P.234
	1st Tray Adjust		P.235
	Exhaust Fan Delay		P.235

Service Mode				Ref. Page
ProcessAdjust-ment	Dmax Density			P.236
	TCR Level Setting			P.236
	Background Margin			P.237
	TransferOutputAdj	1st Transfer		P.237
		2nd Transfer		P.238
	Stabilization	Initialize+Stabi.		P.238
		StabilizationOnly		P.238
	DensityAdjustment	Thick/Yellow		P.239
		Thick/Magenta		
		Thick/Cyan		
		Thick/Black		
		BlackImageDensity		P.239
	Replenish Toner			P.239
	Bias Choice			P.239
Finisher Adjust *3	CB-FN Adjust	Center Staple Pos		P.240
		Half-Fold Pos.		
		Punch Reg. Loop		
		PunchStopPosition		
⚠1	FN-X3 Adjust	Center Staple Pos		
		Half-Fold Pos.		
	Punch Option	Punch Kit Type		
		# of Punch-Holes		
Internet ISW	Internet ISW Set			P.241
	HTTP Settings *1	DataRetrievalSet		P.241
		Proxy Connection		P.241
		Proxy Server	Server Address	P.241
			Port Number	
		Proxy Auth.	Auth. Settings	P.242
			Auth. Login Name	
			Auth. Password	
		ConnectionTimeout		P.242
	FTP Settings *1	DataRetrievalSet		P.242
		Proxy Connection		P.242
		Proxy Server		P.242
		ConnectionSetting		P.243
	Forward AccessSet *1	User ID		P.243
		Password		P.243
		URL		P.243
		File Name		P.244
	Download *1			P.244
Security Settings	Admin. Password			P.245
	Service Password			P.245

Service Mode					Ref. Page
Security Settings	Data Backup				P.245
	Admin.AuthLockREL				P.246
	Release Time				P.246
CS Remote Care	System Settings				P.256
	ID Code				P.256
	Detail Settings	Basic Settings	Center ID		P.257
			Device CD		
			E-mail		
			Encryption		
			Schedule	Schedule 1	
				Schedule 2	
				Schedule 3	
			Notinfication Item	Not Set	
			Center Tel Number		
			Device Tel Number		
			Initial TX		
		Date/Time Settings	Date Setting		P.258
			Time Setting		
			Time Zone Setting		
		RAM Clear			P.258
		Print Comm.Log			P.258
		SoftwareSW Setting	Set by Bit		P.258
			Set by Hex		
		Response Timeout			P.258
		AT command			P.259
	Comm. Status				P.256
	Server Settings	RX Sever	POP3 Server	Enter IP address	P.259
				Enter FQDN	
			POP3 Login Name		P.259
			POP3 Password		P.259
			POP3 Port Number		P.259
		RX Settings	E-mail Setting		P.260
			AutoArrival Check	Check Setting.	P.260
				Check Interval.	
			ConnectionTimeout		P.260
			APOP Auth.		P.260

Service Mode					Ref. Page
CS Remote Care	Server Settings	TX Settings	SMTP Sever	Enter IP address	P.260
				Enter FQDN	
			SMTP Port Number		P.261
			ConnectionTimeout		P.261
			Auth. Settings	Auth. Method	P.261
				POP before SMTP	
				SMTP Auth.	
		CommunicationTest			P.261
		Data Initialized			P.261

* The function tree is shown to comply with the format displayed on the screen.

10.3 System Settings

10.3.1 Destination

<table>
<tr><td>Functions</td><td>• To make the various settings (language, paper size, fixed zoom ratios, etc.) according to the applicable marketing area.</td></tr>
<tr><td>Use</td><td>• To change the applicable marketing area.</td></tr>
<tr><td>Setting/
Procedure</td><td>• Select the applicable marketing area and press the Menu/Select key to set the marketing area.

Japan US Europe
Other 1 Other 2 Other 3 Other 4

✻ These are the languages that can be selected on the Utility screen according to different marketing area settings:

<table>
<tr><td>Japan</td><td rowspan="8">English, French, German, Italian, Spanish,
Dutch, Portuguese, Czech, Japanese</td></tr>
<tr><td>US</td></tr>
<tr><td>Europe</td></tr>
<tr><td>Others 1</td></tr>
<tr><td>Others 2</td></tr>
<tr><td>Others 3</td></tr>
<tr><td>Others 4</td></tr>
</table>
</td></tr>
</table>

10.3.2 Enter Serial No.

<table>
<tr><td>Functions</td><td>• The numbers will be printed on the list output.
• To use the serial number as Machine ID during CS Remote Care communication.</td></tr>
<tr><td>Use</td><td>• Re-enter the serial number.

NOTE
• When power switch was turned ON while the serial No. was not entered, the message to require entering the serial No. will be displayed.
• Do not change the serial number registered in the machine. If memory data is lost and entering the serial number is required, enter the original correct serial number.
Be careful to enter the correct serial number since characters other than alphanumeric can be also entered. CSRC communication is not available if a wrong serial number is entered.</td></tr>
<tr><td>Setting/
Procedure</td><td>• Type the serial number.</td></tr>
</table>

10.3.3 Initialize

A. Data Clear

Functions	• To initialize the setting data.
Use	• To clears the setting data. For details on items to be cleared, see “Contents to be cleared by reset function.” See P.267 **NOTE** • **When removing or installing the hard disk after registering the data below, be sure to clear the data.** **Referring data: One-touch registration, user authentication/account track.**
Setting/ Procedure	*1.* Select the key as follows. [Service Mode] → [System Settings] → [Initialize] → [Data Clear] → [Start]. *2.* Press the Menu/Select key. *3.* When [Completed. Please turn power OFF and ON.] is displayed, turn off the power switch and turn it on again more than 10 seconds after.

B. System Error Clear

Functions	• To reset the trouble data.
Use	• Use to clear the [Jam], [Trouble], [Error] displays, and other improper displays. For details on items to be cleared, see “Contents to be cleared by reset function.” See P.267
Setting/ Procedure	*1.* Call the Service Mode to the screen. *2.* Select the key as follows. [Service Mode] → [System Settings] → [Initialize] → [SystemError Clear] → [Start]. *3.* Press the Menu/Select key. *4.* When [Completed. Please turn power OFF and ON.] is displayed, turn off the power switch and turn it on again more than 10 seconds after.

10.3.4 Foolscap Size

Functions	• To set the size for foolscap paper.
Use	• To change the size for foolscap paper.
Setting/ Procedure	• Select the size from among the following five. 220x330mm 8 1/2x13 8 1/4x13 8 1/8x13 1/4 8x13

10.3.5 Don’t go to Sleep

Functions	• To display the option of “OFF” for the sleep mode setting screen available from user settings.
Use	• To display the option of “OFF” for the sleep mode setting. **NOTE** • **The sleep mode will begin in 48 hours even if it sets it to “OFF.”**
Setting/ Procedure	• The default setting is “Restrict.” Allow “Restrict”

10.3.6 Image Controller

A. Select Controller

Functions	• To set the type of the controller.
Use	• Use when changing the type of the controller.
Setting/ Procedure	• Select the controller to be used. "Controller 0" : The standard controller is used. Controller 1 : undefined. Controller 2 : undefined. Controller 3 : undefined. Others : undefined. **NOTE** **• When the following setting is "ON", this setting should be set to "Controller 0".** **[Admin. Settings] → [Security Settings] → [EnhancedSecurity] When [EnhancedSecurity] is set to "ON", this setting cannot be changed.** **• After changing setting, make sure to turn off the power switch and turn it on again more than 10 seconds after.**

B. Controller Mode

Functions	• [Controller Mode] appears when [Others] is selected.
Use	• Use when changing the type of the controller.
Setting/ Procedure	* This setting is available when the Select controller setting is set to "Others." Mode 1: undefined. Mode 2: undefined. Mode 3: undefined.

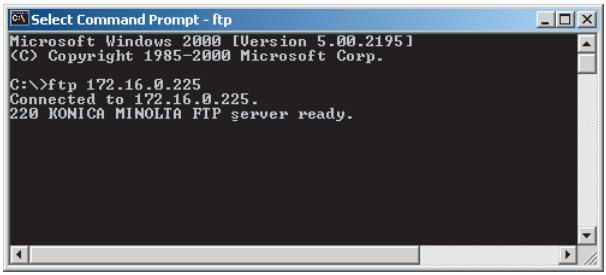
10.3.7 Unit Replacement

Functions	• To select who is to replace a unit. • When the unit life arrives, the warning display is intended for the specific person who is going to replace the unit. When "User" is selected : Printing is inhibited. When "Service" is selected: Life warning.
Use	• Use when changing the specific person who is going to replace the unit.
Setting/ Procedure	• The following are the default settings: US, Japan, Others 4 Europe, Others1/2/3 Toner Cartridge : "User" Service "User" Service Waste Toner Box : "User" Service "User" Service Imaging Unit : "User" Service "User" Service Punch Scrap Box : "User" Service "User" Service **NOTE** **• If the destination is changed in [Destination], set all of this function to "User."**

10.3.8 LCT Size Setting

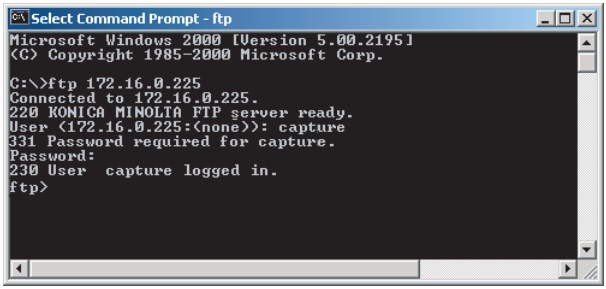
Functions	• To set the paper size for the LCT.
Use	• Use to change the paper size for the LCT (PC-406).
Setting/ Procedure	• The default setting depends on the setting made for the applicable marketing area. A4 Letter

10.3.9 Data Capture

Functions	• When an error occurs, it acquires the print job data in order to analyze the cause of the error.
Use	• When an error occurs, this will be used to analyze the cause of the error according to the print job data.
Setting/ Procedure	• The default setting is "OFF." ON "OFF" **NOTE** • **The following conditions are necessary for this function. When selecting [Security Settings] → [Security Details] → [PrintDataCapture] in Admin. Settings, [Allow] must be set. The hard disk must be mounted to the machine.** *1.* Select [Service Mode] → [System Settings] → [Data Capture]. Select [ON]. (While the Data Capture setting is [ON], the print job data from the PC will be stored in the hard disk.) **NOTE** • **The original offset value can be disabled to address image failure and other problems caused by individual CCD performance difference.** *2.* Check the IP address of the machine. *3.* Connect the PC (Windows) and the machine with ethernet cable. *4.* Start the DOS command prompt of the PC, and specify the IP address of the machine to start FTP.  4037F3E538DA

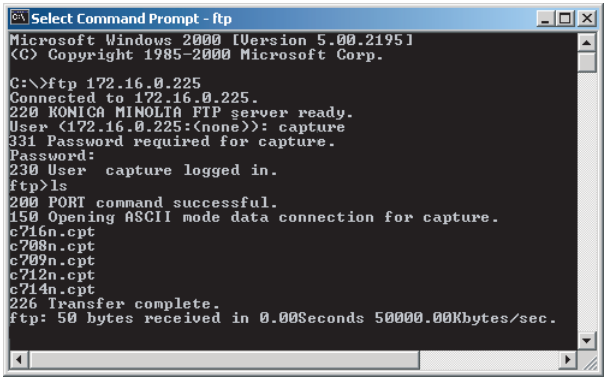
Setting/ Procedure	

5. Input the user name and the password.
User name: capture
Password: sysadm



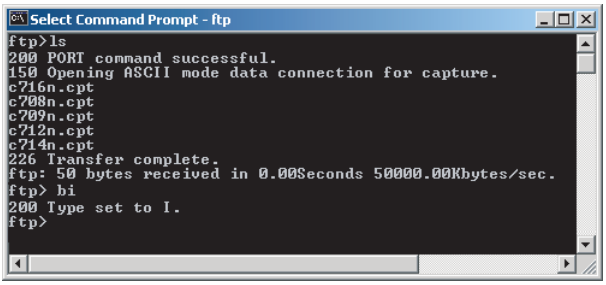
4037F3E539DA

6. Using the “ls” command, display the list of the file available for capture.



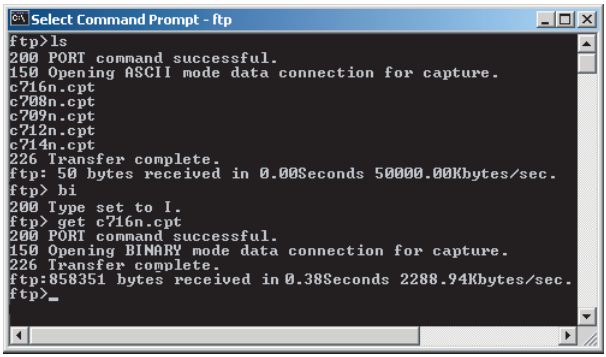
4037F3E540DA

7. Using the “binary” command, set the File transfer mode to the binary transfer.



4037F3E541DA

Setting/ Procedure	*8.* Using the “get” command, transfer the data for capture to PC.



4037F3E542DA

9. Finish the command prompt.

NOTE

- **After receiving capture data, select [Admin. Settings] → [Security Settings] → [Security Details], and select [Restrict] for PrintDataCapture in order to delete the job data stored in the hard disk.**
  When HDD Format or Overwrite HDD data is performed, job data is deleted.

10.3.10 Software SW Setting

Functions	• To set the operating characteristic of each function from software switch depending on what types of printing are normally made.
Use	
Setting/ Procedure	*1.* Select [SoftwareSWSetting]. *2.* Enter the intended switch number using ▲ and ▼ keys and press the Menu/Select key. *3.* Select [Set by Bit]. *4.* Use ◀ or ▶ to select a bit. To set the bit, enter 0 or 1 using ▲ and ▼ keys. *5.* To set the bit in hex, select [Set by Hex] and use ▲ and ▼ keys to enter numbers and characters. *6.* Press the Menu/Select key.

A. Setting items in the software switch setting

(1) ACS mode control change

Functions	• To change the 1st image transfer roller pressure/retraction operation control in ACS mode.
Use	• When a user makes mainly monochrome prints, selecting 01 may allow avoiding the PC drum wear-out caused by unnecessary rotation of color imaging units. Set by Hex 00 : The color print (pressed) position is set as the default position of the 1st image transfer roller. (Default setting) Set by Hex 01 : The monochrome print (retracted) position is set as the default position of the 1st image transfer roller.
Setting/ Procedure	*1.* Select [SoftwareSWSetting]. *2.* Enter "50" using ▲ and ▼ keys. *3.* Select [Set by Hex] and enter "00" or "01" using ▲ and ▼ keys. *4.* Press the Menu/Select key.

10.3.11 Enter Setup Date

Functions	• To check the date the main body was installed.
Use	• Use when check the date the main body was installed.

10.3.12 Comm. System

Functions	• Not used.
Use	
Setting/ Procedure	

10.3.13 Option Setting

A. HDD Installation

Functions	• To set when the hard disk is mounted.
Use	• Use when setting up the hard disk which is mounted.
Setting/ Procedure	• The default settings are "Unset." Set "Unset" **NOTE** **• When the setting has been changed, turn off the power switch and turn it on again more than 10 seconds after.** **• If "Installed" is selected, select [User Settings] → [System Settings] → [PowerSave Setting] → [SleepMode Setting] and set [SleepMode Setting] to "ON."** **• If "Not Installed" is selected, select [User Settings] → [System Settings] → [PowerSave Setting] → [SleepMode Setting] and set [SleepMode Setting] to "OFF."**

10.3.14 Maintenance Ctr

Functions	• To set a count value for maintenance of any given part.
Use	• When any given part is replaced.
Setting/ Procedure	<Max Allowance> • Enter the maintenance counter value using ▲ and ▼ keys. <Clear Counter> • Counts up when a sheet of paper is fed through the machine. • Select [Start] and press the Menu/Select key will clear the count. <Count Start Date> • Shows the date when the maintenance counter is started.

10.3.15 IU Yield Setting

Functions	• To set the life threshold for imaging units.
Use	• Use this setting when a gap appears between the actual life value of imaging unit and the life specification value due to the way * a machine is used. • Comparing the PC drum rotation time with the PC drum rotation time calculated based on the number of printed pages, the machine detects the end of unit life using the one that reaches the life specification value earlier. This setting aims to extend the life threshold for the PC drum rotation time and achieve a longer imaging unit life. Normal : detects the end of life when the life specification value is reached. Long : detects the end of life when a value greater (longer) than the life specification value is reached. *The product specification value is determined based on what types of printing are made on the machine. If the types of printing made on the machine are different from the specified printing conditions, the life value of the imaging unit tends to be different from the life specification value. See conditions for life specification values in the service manual titled maintenance for more information on printing conditions. See P.15 **NOTE** **• When "Long" is selected, images printed after the life specification value is out of guarantee.** **The life counter value of the imaging unit can be checked with the life counter on a list produced through selecting [Service Mode] → [List Output] → [Management List].** **• Before making this setting, be sure to check that the machine does not display any message that warns each of imaging units, fusing unit, or image transfer belt unit reaches their life value.**
Setting/ Procedure	• The default setting is Normal. "Normal" Long

10.3.16 Change Warmup Time

Functions	• To change the warm up time.
Use	• With the warm-up time set to mode 1, if monochrome printing is made immediately after a warm-up cycle and a paper curl problem occurs, change the setting to mode2. • With the use of recycled or low quality paper, if a paper curl problem or other paper curl related failures occur immediately after a normal warm-up cycle, set the setting to mode 3 or mode 4. Other paper curl related failures include jam, paper ejection failure, and punch/staple/fold position failure. The following table shows the warm-up time (normal warm-up) in each mode. Mode 1, Mode 2, Mode 3: Monochrome: 75 sec./Color: 75 sec. Mode 4: Monochrome: 130 sec./Color: 130 sec.
Setting/ Procedure	• The default setting is Mode 1. "Mode 1" Mode 2 Mode 3 Mode 4

10.3.17 Status LED Setting

A. Paper Remaining

Functions	• To set how to display main body statuses on the machine state LED (state display lamp, paper empty lamp).
Use	• Each of Type1 and Type2 has the following LED display forms.

Machine State LED Setting		Type1	Type2
Amount of paper remaining (Tray 2 and 3)	100 % to 66 % of paper remaining	Unlit	Unlit
	Near empty	Blinking	Unlit
	Empty	Lit	Lit
	Being lifted up Door opened or closed	Unlit	Unlit
Amount of paper remaining (Tray 4 and 5, LCT)	100 % to 33 % paper remaining	Unlit	Unlit
	33 % to near empty	Blinking	Unlit
	Near empty	Blinking	Unlit
	Empty	Lit	Lit
	Being lifted up Door opened or closed	Unlit	Unlit

Setting/ Procedure	• Each default setting is Type 1. "Type 1" Type 2 **NOTE** • **[Type 2] is the default setting, if the firmware of function enhanced version 1 or later is mounted.**

10.3.18 Toner Near Empty

Functions	• To set whether or not the toner near empty is display.
Use	• Use when changing the toner near empty display.
Setting/ Procedure	• The default setting is ON. "ON" OFF

10.3.19 Auth. Device Setting

- It will not be displayed when [HDD Installation] is set to "Not Installed".
- It will be displayed only when the following setting shows that [General Settings] is set to "ON (MFP)".
  PageScope Web Connection → [Administrator mode] → [Security] → [Authentication] → [User Auth/Account Track]

Functions	• To set whether or not the authentication device is installed.
Use	• Set when the authentication unit (biometric type or card type) is mounted. Biometric : Uses biometrics (finger vein) authentication system Card : Uses IC card authentication system • When selecting biometrics, set a film timeout interval.
Setting/ Procedure	<Auth. Mode> • The default setting is Not Installed. Card Biometric "Not Installed" <Shooting Timeout> • The default setting is 10 sec. 10 sec (5 to 60 sec)

10.3.20 Inferior Cut

Functions	• Individual units and options have a set or unset setting for the trouble isolation function.
Use	• When a problem occurs, this function enables the continuous use of the units that are not affected by separately controlling them and isolating other units that have a problem. • The machine isolates only units that have a "ON" setting. **NOTE** • **The malfunction detection mechanism is not applied to units and options that are being isolated.** • This function can be selected for the following units and options. Tray 1, Tray 2, Tray 3, Tray 4, LCT, Half-Fold/Tri-Fold Center Stapling and Staple.
Setting/ Procedure	• The default setting is OFF for individual units and options. ON OFF • After changing the setting and turn the power switch OFF and ON to make the new setting effective.

10.4 Clear Counter

10.4.1 Yield Counter

Functions	• To clear the count of each counter.
Use	• When each of the maintenance parts is replaced.
Setting/ Procedure	• To clear the count of a counter, select the specific part and then select [Start] and press the Menu/Select key. • Tray 1 : Number of sheets of paper fed from tray 1 • Tray 2 : Number of sheets of paper fed from tray 2 • Tray 3 : Number of sheets of paper fed from tray 3 • Tray 4 : Number of sheets of paper fed from tray 4 • Tray 5 : Number of sheets of paper fed from tray 5 • LCT : Number of sheets of paper fed from the LCT • Finisher : Number of sheets of paper fed out of the finisher

10.4.2 JAM

Functions	• To clear the count of each counter.
Use	• To clear the number of paper misfeeds that have occurred.
Setting/ Procedure	• Select [Start] and press the Menu/Select key.

10.4.3 Counter Service Called

Functions	• To clear the count of each counter.
Use	• To clear the number of malfunctions that have occurred.
Setting/ Procedure	• Select [Start] and press the Menu/Select key.

10.4.4 Warning

Functions	• To clear the count of each counter.
Use	• To clear the number of warning conditions that have been detected.
Setting/ Procedure	• Select [Start] and press the Menu/Select key.

10.4.5 Counter for Mode

Functions	• To display the printed pages in the following specified modes; printer. It also displays the count value of using the specified mode.
Use	• Use to clear the printed pages in the following specified modes; printer, as well as No. of times each mode was used, in order to know the using condition.
Setting/ Procedure	• Select [Start] and press the Menu/Select key.

10.4.6 Time Series Ser Call

Functions	• To display the trouble history in chronological order.
Use	• Use to clear the trouble history in chronological order.
Setting/ Procedure	• Select [Start] and press the Menu/Select key.

10.4.7 Time series JAM

Functions	• To display the jam history in chronological order.
Use	• Use to clear the jam history in chronological order. **NOTE** • **[Code] displayed on the screen of JAM history indicates JAM code. For details of JAM code, see "Trouble shooting."** See P.273
Setting/ Procedure	• Select [Start] and press the Menu/Select key.

10.5 List Output

10.5.1 Management List

Functions	• To produce an output of a list of setting values, adjustment values, total counter values, and others.
Use	• When a malfunction occurs.
Setting/ Procedure	*1.* Load the A4S plain paper to a paper source. *2.* Select 1-Sided Print or 2-Sided Print. *3.* Press the Menu/Select key, which will let the machine produce the list. • The time-of-day and date will also be printed.

10.5.2 Adjustment List

Functions	• To output the adjustments list for machine adjustment, process adjustment, etc. in Service Mode.
Use	• When a malfunction occurs.
Setting/ Procedure	*1.* Load the A4S plain paper to a paper source. *2.* Select 1-Sided Print or 2-Sided Print. *3.* Press the Menu/Select key, which will let the machine produce the list. • The time-of-day and date will also be printed.

10.6 Machine Status

A. HDD Format

Functions	• To format the hard disk. • The function proceeds in the order of physical format to logical format. • If the hard disk is yet to be formatted, the malfunction code “C-D010” will appear. Ignore this code and continue with the formatting procedure.
Use	• When the hard disk is mounted. • When the hard disk is to be initialized. (Physical format to logical format)
Adjustment Procedure	*1.* Select [Service Mode] → [Machine Status] → [HDD Format]. **(1) Physical Format** *1.* Select [Physical Format] → [Start]. *2.* Press the Menu/Select key to start the formatting sequence. *3.* The sequence will be automatically terminated as it is completed. *4.* Turn off the power switch and turn it on again more than 10 seconds after. **(2) Logical Format (only when initial is set up)** *1.* Select [Logical Format] → [Start]. *2.* Press the Menu/Select key to start the formatting sequence. *3.* The sequence will be automatically terminated as it is completed. *4.* Turn off the power switch and turn it on again more than 10 seconds after. ✻ Formatting the hard disk will erase all data contained in it.

B. Memory Check

Functions	• To check correspondence of data written to and that read from memory through write/read check. Simple Check • A check is made to see if the image data reading and writing are correctly made in a very limited area. • The progress of the check sequence is displayed in percentage. Detail Check • A check is made to see if the image data reading and writing are correctly made at the addresses and buses in all areas. • The progress of the check sequence is displayed in percentage.
Use	• If the printed image is faulty.
Adjustment Procedure	*1.* Select [Service Mode] → [Machine Status] → [Memory Check]. *2.* Select the desired type of check, either [Simple Check] or [Detail Check]. *3.* Press the Menu/Select key to start the check procedure. *4.* When the check procedure is completed, the results are shown on the screen. If the check results are NG, check the memory for connection or replace the memory with a new one. ✻ Press the Stop key to interrupt the check sequence.

10.7 Test Mode

- To check the image on the printer side by letting the machine produce various types of test pattern. It also tests the printing operation in running mode, as well as the halftone pattern function.
- The machine searches through the paper sources in the order of tray 3, tray 4, tray 5, and tray 2 for paper of the maximum size for printing.

10.7.1 Procedure for test pattern output

1. Select [Test Mode] to display the test mode menu.
2. Select the desired test pattern key.
3. Set up the desired functions and press the Menu/Select key.

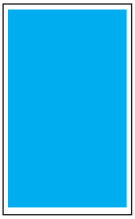
10.7.2 Running Mode

Functions	• To test the printing operation in running mode.
Use	• Use to check the printing operation in running mode from each paper source.
Setting/ Procedure	• Select the paper size (Tray 1, Tray 2 only). • Check to make sure [Cancel] of the day is highlighted, and press the Menu/Select key will stop operation.

10.7.3 Gradation Pattern

Functions	• To produce a gradation pattern.
Use	• Used for checking gradation reproducibility.
Pattern	 Cyan A02EF3C510DA
Setting/ Procedure	• Select the color mode. “Cyan”, Magenta, Yellow, Black

10.7.4 Halftone Pattern

Functions	• To produce a solid halftone pattern.
Use	• Used for checking uneven density and pitch noise.
Pattern	 Cyan Density: 255 A02EF3C519DA
Setting/ Procedure	• Select the color mode. "Cyan", Magenta, Yellow, Black • Select the density level. 64, 128, 255

10.8 Machine Adjustment

10.8.1 Fusing Temperature

<table>
<tr><td>Functions</td><td>• To adjust individually the temperature of the heating roller and the fusing pressure roller for each type of paper, thereby printing with varying fusing performance under changing environmental conditions.</td></tr>
<tr><td>Use</td><td>• When fusing performance is poor, or wax streak or offset occurs when the type of paper is changed or environmental conditions change.
• Use when the curling of the paper due to the paper type or environmental change occurred, or when the paper jam, as well as stapling or folding position error occurred due to the curling of the paper.
• By setting the temperature higher (+), gloss of print can be improved.
• By setting the temperature lower (-), exit roller mark can be reduced.</td></tr>
<tr><td>Adjustment Range</td><td>
<table>
<tr><th rowspan="2">Paper type</th><th colspan="2">Setting range</th><th rowspan="2">step</th></tr>
<tr><th>Heated Side</th><th>Pressurized Side</th></tr>
<tr><td>Plain Paper</td><td>-10 °C to +5 °C</td><td>-5 °C to +5 °C</td><td>5 °C</td></tr>
<tr><td>Thick 1</td><td>-20 °C to +5 °C</td><td>-5 °C to +5 °C</td><td>5 °C</td></tr>
<tr><td>Thick 2</td><td>-20 °C to +5 °C</td><td>-5 °C to +5 °C</td><td>5 °C</td></tr>
<tr><td>Thick 3</td><td>-20 °C to +5 °C</td><td>-5 °C to +5 °C</td><td>5 °C</td></tr>
<tr><td>Thick 4</td><td>-20 °C to +5 °C</td><td>-5 °C to +5 °C</td><td>5 °C</td></tr>
<tr><td>Transparency</td><td>-20 °C to +5 °C</td><td>-20 °C to +5 °C</td><td>5 °C</td></tr>
<tr><td>Envelope</td><td>-5 °C to +5 °C</td><td>-5 °C to +5 °C</td><td>5 °C</td></tr>
</table>
</td></tr>
<tr><td>Adjustment Instructions</td><td>If fusing performance is poor, increase the setting.
If wax streaks occur, decrease the setting.
If offset is poor, decrease the setting.
If curling of the paper occurs, decrease the setting.</td></tr>
<tr><td>Setting/ Procedure</td><td>NOTE
• To adjust the fusing temperature, adjust on the heating side first. If the further adjustment is necessary, adjust on the pressure side.

1. Select [Service Mode] → [MachineAdjustment] → [FusingTemperature].
2. Select the paper type and fusing roller type (Heater Side or Pressurized Side).
3. Enter the new setting from the ▲ and ▼ keys.
4. Press the Menu/Select key.
5. Output two or three test printing and check to see whether the image has any problem.
6. Make the adjustment for each type of paper.</td></tr>
</table>

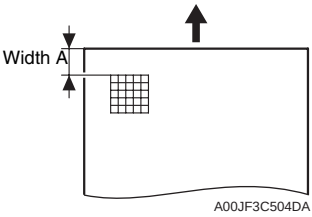
10.8.2 Fusing Speed

<table>
<tr><td>Functions</td><td>• To adjust the speed of the fusing drive motor so as to match the fusing speed with transport speed.</td></tr>
<tr><td>Use</td><td>• Brush effect or blurred image is evident as a result of changes in environmental conditions or degraded durability.</td></tr>
<tr><td>Variable Range</td><td>-20 to +20 (in 1 increments)</td></tr>
<tr><td>Adjustment Instructions</td><td>If brush effect is evident, vary the setting value and check for image.
If a blurred image occurs, decrease the setting.</td></tr>
<tr><td>Setting/ Procedure</td><td>1. Select [Service Mode] → [MachineAdjustment] → [Fusing Speed].
2. Select the transport speed, at which the brush effect or blurred image has occurred.

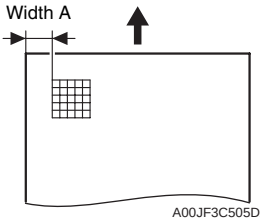
<table><tr><th>Transport speed</th><th>Paper Setting</th></tr><tr><td>166.6 mm/s</td><td>Plain paper: color/monochrome, OHF film</td></tr><tr><td>55.5 mm/s</td><td>Thick 1, Thick 2, Thick 3, Thick 4, envelope, postcard: monochrome/color</td></tr></table>
3. Enter the new setting from the ▲ and ▼ keys.
4. Press the Menu/Select key.
5. Check the printed image for any image problem.</td></tr>
</table>

10.8.3 Printer Area

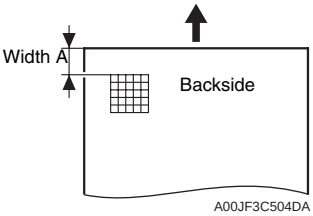
A. Leading Edge Adjustment

Functions	• To vary the print start position in the sub scan direction for each of different paper types in the tray 1. (To adjust the timing where paper is sent out from the timing roller)
Use	• The PH unit has been replaced. • The paper type has been changed. • The printed image deviates in the sub scan direction. • A faint image occurs on the leading edge of the image. • This setting can be made independently for plain paper, Thick 1, Thick 2, Thick 3, Thick 4, transparency, and envelope.
Adjustment Specification	 A00JF3C504DA Width A on the test pattern produced should fall within the following range. Specifications: 4.2 ± 0.5 mm Setting range: -3.0 mm to +3.0 mm (in 0.2 mm increments)
Adjustment Instructions	If width A is longer than the specifications, make the setting value smaller than the current one. If width A is shorter than the specifications, make the setting value greater than the current one.
Setting/ Procedure	*1.* Place A3 paper on the tray 1. *2.* Select [Service Mode] → [MachineAdjustment] → [Printer Area] → [Leading Edge Adj.]. *3.* Select the [Plain Paper]. *4.* Select [Print] and press the Menu/Select key to let the machine produce a test pattern. *5.* Check the dimension of width A on the test pattern. *6.* If width A falls outside the specified range, change the setting using the ▲ and ▼ keys. *7.* Press the Menu/Select key to let the machine produce a test pattern. *8.* Check the dimension of width A on the test pattern. *9.* If width A is outside the specified range, change the setting again and make a check again. *10.*If width A falls within the specified range, press the Menu/Select key. *11.*Following the same procedure, adjust for Thick 1 to 4, transparency, and envelope.

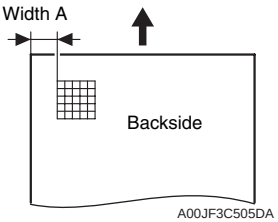
B. Centering

Functions	• To vary the print start position in the main scan direction for each paper source.
Use	• The PH Unit has been replaced. • A paper feed unit has been added. • The printed image deviates in the main scan direction.
Adjustment Specification	 Width A on the test pattern produced should fall within the following range. Specifications: 3.0 ± 0.5 mm Setting range: -3.0 mm to +3.0 mm (in 0.2 mm increments)
Adjustment Instructions	If width A is longer than the specifications, make the setting value smaller than the current one. If width A is shorter than the specifications, make the setting value greater than the current one.
Setting/ Procedure	*1.* Select [Service Mode] → [MachineAdjustment] → [Printer Area] → [Centering]. *2.* Select the paper source to be adjusted. *3.* Select [Print] and press the Menu/Select key to let the machine produce a test pattern. *4.* Check the dimension of width A on the test pattern. *5.* If width A falls outside the specified range, change the setting using the ▲ and ▼ keys. *6.* Press the Menu/Select key to let the machine produce a test pattern. *7.* Check the dimension of width A on the test pattern. *8.* If width A is outside the specified range, change the setting again and make a check again. *9.* If width A falls within the specified range, select the Menu/Select key. *10.*Following the same procedure, adjust for all other paper sources. (Use A4 or 8 $^{1}/_{2}$ × 11 plain paper for the tray 1.)

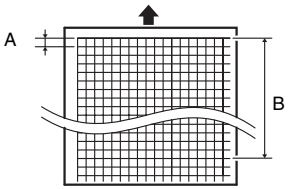
C. Leading (Duplex)

Functions	• For individual types of paper, this function allows the adjustment of the image write start position in the sub scan direction on the 2nd side of duplex printing.
Use	• This adjustment is made when the image on the 2nd side of paper deviates from the original position in the sub scan direction. • This adjustment can be made independently for each of plain paper, thick 1, thick 2, and thick 3.
Adjustment Specification	 Width A on the test pattern produced should fall within the following range. Specifications: 4.2 ± 0.5 mm Setting range: -3.0 mm to +3.0 mm (in 0.2 mm increments)
Adjustment Instructions	If width A is longer than the specifications, make the setting value smaller than the current one. If width A is shorter than the specifications, make the setting value greater than the current one.
Setting/ Procedure	*1.* Place A3 paper on the tray 1. *2.* Select [Service Mode] → [MachineAdjustment] → [Printer Area] → [Leading(Duplex)]. *3.* Select the [Plain Paper]. *4.* Select [Print] and press the Menu/Select key to let the machine produce a test pattern. *5.* Check the dimension of width A on the test pattern. *6.* If width A falls outside the specified range, change the setting using the ▲ and ▼ keys. *7.* Press the Menu/Select key to let the machine produce a test pattern. *8.* Check the dimension of width A on the test pattern. *9.* If width A is outside the specified range, change the setting again and make a check again. *10.*If width A falls within the specified range, press the Menu/Select key. *11.*Following the same procedure, adjust for Thick paper.

D. Centering (Duplex)

Functions	• To vary the print start position in the main scan direction for each paper source in the 2-Sided mode.
Use	• The image on the backside of the 2-sided print deviates in the main scan direction.
Adjustment Specification	 •Width A on the test pattern produced should fall within the following range. •For measurement, use the image produced on the backside of the test pattern. Specifications: 3.0 ± 0.5 mm Setting range: -3.0 mm to +3.0 mm (in 0.2 mm increments)
Adjustment Instructions	• If width A is longer than the specifications, make the setting value smaller than the current one. • If width A is shorter than the specifications, make the setting value greater than the current one.
Setting/ Procedure	*1.* Select [Service Mode] → [MachineAdjustment] → [Printer Area] → [Centering(Duplex)]. *2.* Select the paper source to be adjusted. *3.* Select [Print] and press the Menu/Select key to let the machine produce a test pattern. *4.* Check the dimension of width A on the test pattern. *5.* If width A falls outside the specified range, change the setting using the ▲ and ▼ keys. *6.* Press the Menu/Select key to let the machine produce a test pattern. *7.* Check the dimension of width A on the test pattern on the backside of the printed image. *8.* If width A is outside the specified range, change the setting again and make a check again. *9.* If width A falls within the specified range, press the Menu/Select key. *10.* Following the same procedure, adjust for all other paper sources. (Use A4 or 8 $^{1}/_{2}$ × 11 plain paper for the tray 1.)

E. Vertical Adj.

Functions	• To synchronize the paper transport speed with the image writing speed.
Use	• Feed Direction Adjustment becomes necessary. • The printed image distorts (stretched, shrunk). • When the printed image is stretched in the sub scan direction. • This setting can be made independently for plain paper, Thick 1, Thick 2, Thick 3, and Thick 4.
Adjustment Specification	 A00JF3C506DA Width A and width B on the test pattern produced should fall within the following ranges. Width A: equivalent to one grid Width B: equivalent to 48 grids Specifications A: 7.9 to 8.3 B: 389.1 to 392.1 Setting Range A, B: -7 to +7
Adjustment Instructions	If width A or B is longer than the specifications, make the setting value smaller than the current one. If width A or B is shorter than the specifications, make the setting value greater than the current one.
Adjustment Procedure	*1.* Load tray 1 with A3 or 11 × 17 plain paper. *2.* Select [Service Mode] → [MachineAdjustment] → [Printer Area] → [Vertical Adj.]. *3.* Select [Plain Paper]. *4.* Select [Print] and press the Menu/Select key to let the machine produce a test pattern. *5.* Check width A (equivalent to one grid) and width B (equivalent to 48 grids) on the test pattern. *6.* If width of A or B falls outside the specified range, change the setting using the ▲ and ▼ keys. *7.* Press the Menu/Select key to let the machine produce a test pattern again. *8.* Check width A and width B on the test pattern. *9.* If width A or B falls outside the specified range, change the setting value and make a check again. *10.*If width A or B falls within the specified range, press the Menu/Select key. *11.*Following the same procedure, adjust for thick paper.

F. Erase Leading Edge

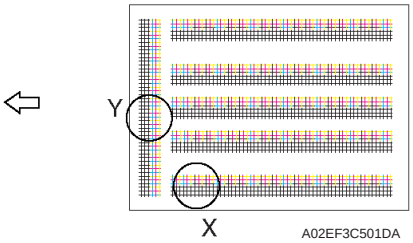
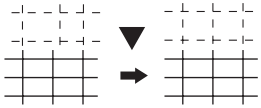
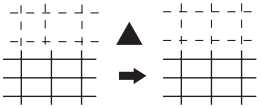
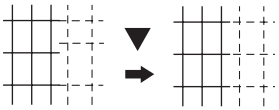
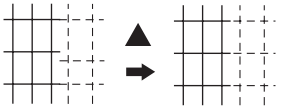
Functions	• To set the leading edge erase amount of the paper.
Use	• Upon user requests, it is possible to specify the void area where image is not printed along the leading edge.
Setting/ Procedure	• The default setting is 4 mm. "4 mm" 5 mm 7 mm **NOTE** • **When "4 mm" is selected, 4.2 mm is the actual amount to be erased in print based on the control system of the machine.**

10.8.4 Printer Resist Loop

<table>
<tr><td>Functions</td><td>• To set the correction value of the paper loop length for each process speed of tray 2, tray 3 to tray 5 / LCT, tray 1, and duplex.
• To adjust the length of the loop formed in paper before the registration rollers.
• Use “Paper Passage” for paper passage check.</td></tr>
<tr><td>Use</td><td>When a paper skew occurs.
When a paper misfeed occurs.</td></tr>
<tr><td>Adjustment Instructions</td><td>To decrease the loop amount: Decrease the setting value
To increase the loop amount: Increase the setting value</td></tr>
<tr><td>Adjustment Range</td><td>• The adjustable range is different depending on paper source and processing speed.
<table>
<tr><th></th><th>Tray 2</th><th>Tray 3/4/5 LCT</th><th>Duplex</th><th>Tray 1</th></tr>
<tr><td>166.6 mm/sec</td><td>-5 to +5</td><td>-5 to +5</td><td>-5 to +5</td><td>-5 to +5</td></tr>
<tr><td>55 mm/sec</td><td>-15 to +15</td><td>-15 to +15</td><td>-8 to +8</td><td>-15 to +15</td></tr>
</table></td></tr>
<tr><td>Setting/ Procedure</td><td>1. Select [Service Mode] → [MachineAdjustment] → [Printer Resist Loop].
2. Select a paper source and a processing speed.
3. Enter the new setting from the ▲ and ▼ keys and press the Menu/Select key.</td></tr>
</table>

10.8.5 Color Registration Adjustment

A. Cyan, Magenta, Yellow

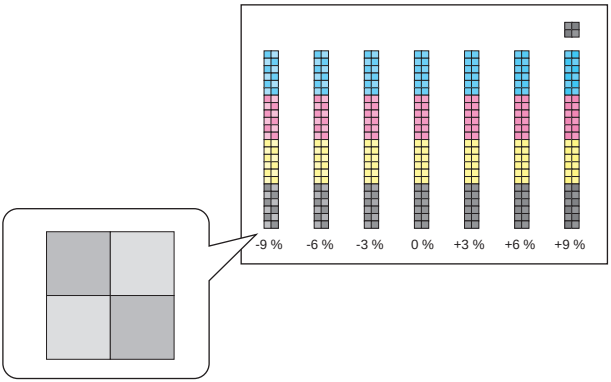
Functions	• To adjust color shift if there is any when comparing the original with printed image of the plain or thick paper.
Use	• To correct any color shift. • This setting can be made independently for plain paper, Thick 1, Thick 2, Thick 3, and Thick 4.
Adjustment Range	"0" (-6 to +6 dot)
Adjustment 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 Mode] → [MachineAdjustment] → [Color Reg.]. *2.* Load tray 1 with A3/11 x 17 or A4/8 $^{1}/_{2}$ x 11 plain paper. *3.* Select [Print] 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 positions X and Y. *5.* Select the color to be adjusted. *6.* Using the ▲ and ▼ keys, change the setting value as necessary. (At this time, only the line of the selected color moves.) *7.* Produce another test pattern and make sure that there is no deviation. Check Procedure Check point X, Y  A02EF3C501DA Adjustment for X direction: Check point X If the cross deviates in the direction of A, increase the setting. If the cross deviates in the direction of B, decrease the setting. Direction of A  A02EF3C009DA Direction of B  A02EF3C010DA Adjustment for Y direction: Check point Y If the cross deviates in the direction of A, increase the setting. If the cross deviates in the direction of B, decrease the setting. Direction of A  A02EF3C011DA Direction of B  A02EF3C012DA

10.8.6 LD adjustment

A. LD Red delay adj.

Functions	• Not used.
Use	
Setting/ Procedure	

B. LD light balance

Functions	• This function adjusts the LD lightness balance between the two LDs to correct the difference of LD lightness between the LDs.
Use	• This setting is made after the PH unit or the service EEPROM board is replaced. • This adjustment is made to prevent uneven density in highlighted halftone area being caused by inappropriate laser intensity.
Setting/ Procedure	*1.* Select [Service Mode] → [MachineAdjustment] → [LD Adjust] → [LD Light balance]. *2.* Select [Print] → [For adjustment] and press Menu/Select key. *3.* The test print includes seven rows of patterns produced with different levels of LD2 light intensity towards LD1.  A00JF3C527DA *4.* Three squares each made up by four small squares are printed with the different four colors. The two small squares diagonal to each other are printed using the same LD. Depending on individual print timing, it is decided that which pair of small squares corresponds to which LD. The pair of small squares where image density changes corresponds to LD2. *5.* From the test pattern, select the pattern where the least density difference appears between LD1 and LD2 for each color. *6.* Enter the adjustment value corresponding to the pattern you selected (see the above illustration) or a value close to the adjustment value using the ▲ and ▼ keys on the panel. *7.* Select [For effectiveConf] and press Menu/Select key. *8.* Check that LD2 small squares have no image noise of woodgrain.

10.8.7 1st Tray Adjust

Functions	• To set the maximum width and the minimum width for the tray 1 paper size unit of the paper feed tray 1 guide.
Use	• Use when the tray 1 paper size unit of the paper feed tray 1 guide has been changed. • Use when a false paper size is displayed when the tray 1 is used.
Setting/ Procedure	*1.* Select [Service Mode] → [MachineAdjustment] → [1st Tray Adjust]. *2.* Select [Maximum Width]. *3.* Load the tray 1 with paper having a width of 297 mm. *4.* Press the Menu/Select key and check that the results are [OK]. *5.* Select [Minimum Width]. *6.* Load the tray 1 with paper having a width of 100 mm. *7.* Press the Menu/Select key and check that the results are [OK]. ✻ Make the adjustment again if the results are [NG].

10.8.8 Exhaust Fan Delay

Functions	• To set the period of time before the exhaust fan motor stops.
Use	• At the completion of a print job/image stabilization or at jam/malfunction, the fan motor rotating at full speed comes to a stop. The period of time before the fan motor stops can be delayed so that ozone left around the PC drum can be discharged.
Setting/ Procedure	• 0 to 15 (Min.) can be entered with the ▲ and ▼ keys. (Default is 0.) **NOTE** • **When this setting is set to 0 Min., the fan motor runs for 5 seconds before it stops.**

10.9 Process Adjustment

10.9.1 Dmax 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 (step: 1 *) *: 1 step corresponds to 0.03 in density difference.
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 [Service Mode] → [ProcessAdjustment] → [Dmax Density]. *2.* Select the color to be adjusted. *3.* Enter the new setting from the ▲ and ▼ keys. *4.* Press the Menu/Select key to return to the [ProcessAdjustment] menu screen. *5.* Select [Stabilization]. *6.* Select [StabilizationOnly]. *7.* Press the Menu/Select key to validate the adjustment value. *8.* Check the printed image for any image problem. **NOTE** • **If the setting value has been changed, be sure to run an image stabilization sequence to make valid the new value.**

10.9.2 TCR Level Setting

Functions	• To adjust the T/C control level when an abnormal image density occurs as a result of a change in the amount of charge of toner and carrier due to an environmental change.
Use	• Use when T/C changes due to changes in environmental conditions of the user site.
Adjustment Range	• The default setting is 0. -3 to +3 (1 step :0.5 %, Center value 0 corresponds to 7 % T/C ratio.)
Adjustment Instructions	To increase T/C, increase the setting value. To decrease T/C, decrease the setting value.
Adjustment Procedure	*1.* Select [Service Mode] → [ProcessAdjustment] → [TCR Level Setting]. *2.* Select the color to be adjusted. *3.* Enter the new setting from the ▲ and ▼ keys. *4.* Press the Menu/Select key to validate the adjustment value. *5.* Check the printed image for any image problem.

10.9.3 Background Margin

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 (step: 1)
Adjustment Instructions	To make the background level foggier, decrease the setting value. To make the background level less foggy, increase the setting value.
Setting/ Procedure	*1.* Select [Service Mode] → [ProcessAdjustment] → [Background Margin]. *2.* Select the color to be adjusted. *3.* Enter the new setting from the ▲ and ▼ keys. *4.* Press the Menu/Select to return to the [ProcessAdjustment] menu screen. *5.* Select [Stabilization]. *6.* Select [StabilizationOnly]. *7.* Press the Menu/Select key to validate the adjustment value. *8.* Check the printed image for any image problem. **NOTE** • **If the setting value has been changed, be sure to run an image stabilization sequence to make valid the new value.**

10.9.4 Transfer Output Adj

A. 1st 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. -8 to +7 (step: 1)
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 [Service Mode] → [Test Mode] → [Halftone Pattern] to output the red or green test pattern. See P.224 *2.* When the test pattern image has white spots, adjust with the following procedure. *3.* Select [Service Mode] → [ProcessAdjustment] → [TransferOutputAdj] → [1st Transfer]. *4.* Select the color. *5.* Change the setting value using the ▲ and ▼ keys. *6.* 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 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 when adjusting.**

B. 2nd Transfer

Functions	• Adjust the 2nd image transfer output (ATVC) on the 1st page and the 2nd page for each paper type.
Use	• To use when the transfer failure at the trailing edge occurs.
Adjustment Range	• The default setting is 0. -8 to +7 (step: 1)
Adjustment Instructions	To increase the ATVC value (in the direction of a foggier image), increase the setting value. To decrease the ATVC value (in the direction of a less foggy image), decrease the setting value.
Setting/ Procedure	*1.* Select [Service Mode] → [ProcessAdjustment] → [TransferOutputAdj] → [2nd Transfer]. *2.* Select the side of the image (Front or Back), on which the transfer failure occurs. **NOTE** • **For envelopes, only first side can be selected.** *3.* Select the paper type with the transfer failure. *4.* Enter the new setting from the ▲ and ▼ keys. *5.* Select the Menu/Select key to validate the adjustment value. *6.* Check the printed image for any image problem.

10.9.5 Stabilization

A. Initialize+Stabi.

Functions	• To carry out an image stabilization sequence after the historical data of image stabilization control has been initialized.
Use	• Use if an image problem persists even after gradation adjustment has been executed. • Use if tone reproduction and maximum density are faulty even after Stabilizer Mode has been executed. • When color shift correction is needed again after the machine maintenance. • After executing the skew adjustment reset.
Setting/ Procedure	*1.* Select [Service Mode] → [ProcessAdjustment] → [Stabilization]. *2.* Select [Initialize+Stabi.]. *3.* Press the Menu/Select key to start stabilizer. The LED line key turns off during the Stabilizer sequence. *4.* Stabilizer is completed when the LED line turns blue.

B. StabilizationOnly

Functions	• The image stabilization sequence is carried out without clearing the historical data of image stabilization control.
Use	• Use if an image problem persists even after gradation adjustment has been executed. • When [Dmax Density] and [Background Margin] of Service Mode are changed.
Setting/ Procedure	*1.* Select [Service Mode] → [ProcessAdjustment] → [Stabilization]. *2.* Select [StabilizationOnly]. *3.* Press the Menu/Select key to start Stabilizer. The LED line key turns off during the Stabilizer sequence. *4.* Stabilizer is completed when the LED line turns blue.

10.9.6 Density Adjustment

A. Thick Paper Density Adjustment

Functions	• To fine-adjust density of printed images of each color for thick paper and OHP transparencies. (Only black color adjustable for 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 (step: 1)
Adjustment Instructions	Light color: Press the ▲ key. Dark color: Press the ▼ key.
Setting/ Procedure	*1.* Select [Service Mode] → [ProcessAdjustment] → [DensityAdjustment]. *2.* Press the ▼ or ▲ key for the desired color to correct the image density.

B. Black Image Density

Functions	• To fine-adjust the density of the printed image for a black print.
Use	• To vary the density of the printed image of a black print.
Adjustment Range	• The default setting is 0. -2 to +2 (step: 1)
Adjustment Instructions	If the black is light, press the ▲ key. If the black is dark, press the ▼ key.
Setting/ Procedure	*1.* Select [Service Mode] → [ProcessAdjustment] → [DensityAdjustment] → [BlackImageDensity]. *2.* Press the ▼ or ▲ key as necessary to correct the image density.

10.9.7 Replenish Toner

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 originals having a high image density.
Use	• When there is a drop in T/C.
Setting/ Procedure	*1.* Select [Service Mode] → [Replenish Toner]. *2.* Select the color, for which supply of toner is to be replenished. *3.* Pressing the Menu/Select key will let the machine detect the current toner density and; if the density is lower than a reference value, a toner replenishing sequence and then a developer agitation sequence are run. *4.* These sequences are repeated up to a maximum of four times until the toner density reaches the reference value. If the toner density is found to be higher than the reference value, only a developer agitation sequence is carried out.

10.9.8 Bias Choice

Functions	• To change the setting of the developing bias voltage. • When this function is turned ON, it decreases the developing bias voltage, thereby preventing voltage leak from occurring.
Use	• Use when patches of white occur in the image in an ambience of low atmospheric pressure, such as in high altitudes.
Setting/ Procedure	• The default setting is OFF. ON “OFF”

10.10 Finisher Adjust

10.10.1 CB-FN Adjust

A. Center Staple Pos
See P.28 of the SD-505 service manual.

B. Half-Fold Pos.
See P.26 of the SD-505 service manual.

C. Punch Reg. Loop
See P.61 of the FS-519/PK-515/OT-602 service manual.

D. Punch Stop Position
See P.60 of the FS-519/PK-515/OT-602 service manual.

⚠1 10.10.2 FN-X3 Adjust

A. Center Staple Pos
See P.34 of the FS-609/PK-501 service manual.

B. Half-Fold Pos.
See P.35 of the FS-609/PK-501 service manual.

10.10.3 Punch Option

A. Punch Kit Type
See P.61 of the FS-519/PK-515/OT-602 service manual.
See P.36 of the FS-609/PK-501 service manual.

10.11 Internet ISW

- By using this setting, the firmware stored in the server can be downloaded over internet for upgrading.
- For details for upgrading the firmware, refer to “Firmware upgrade” in the Maintenance section.
See P.45

10.11.1 Internet ISW Set

Functions	• To set whether or not to enable each setting for Internet ISW.
Use	• To use when upgrading the firmware by Internet ISW. • Each setting such as Server setting will be valid by setting this to “Enable”. **NOTE** • **When the following setting is set to “ON”, this setting will automatically be set to “Disable” and cannot be changed.** **[Admin. Settings] → [Security Settings] → [EnhancedSecurity]**
Setting/ Procedure	• The default setting is Disable. Enable “Disable”

10.11.2 HTTP Settings

- It will be displayed only when [Internet ISW Set] is set to “Enable”.

A. Data Retrieval Set

Functions	• To set whether or not to enable downloading using the HTTP protocol.
Use	• To use when accessing the server using the HTTP protocol. • Setting on the proxy server will be valid when this setting is “Enable”.
Setting/ Procedure	• The default setting is Disable. Enable “Disable”

B. Proxy Connection

Functions	• To set whether or not to connect via proxy server when accessing the server.
Use	• To use when accessing the server via proxy server.
Setting/ Procedure	• The default setting is OFF. ON “OFF”

C. Proxy Server

Functions	• To set the address and the port number for the proxy server.
Use	• To use when accessing the server via proxy server.
Setting/ Procedure	<Server Address> • Enter an address using IPv4, IPv6, or FQDN format. <Port Number> • Enter the value between 1 and 65535 using the ▲ and ▼ keys. (The default setting is 00080)

D. Proxy Auth.

Functions	• To set the login name or password when authentication is necessary for accessing the proxy server.
Use	• To use when authentication is necessary for accessing the proxy server.
Setting/ Procedure	<Auth. Settings> • The default setting is OFF. ON "OFF" <Auth. Login Name> • Enter the login name (up to 32 one-byte characters) using the ▲ and ▼ keys. <Auth. Password> • Enter the password (up to 32 one-byte characters) using the ▲ and ▼ keys.

E. Connection Timeout

Functions	• To set the time for the timeout for accessing the server.
Use	• To use when changing the time for the timeout for accessing the server.
Setting/ Procedure	• The default setting is 060 sec. 030 to 300 sec

10.11.3 FTP Settings

• It will be displayed only when [Internet ISW Set] is set to "Enable".

A. Data Retrieval Set

Functions	• To set whether or not to enable downloading using FTP protocol.
Use	• To use when accessing the server with FTP protocol. • Setting this to "Enable" will enable the proxy server setting.
Setting/ Procedure	• The default setting is Enable. "Enable" Disable

B. Proxy Connection

Functions	• To set whether or not to access the server via proxy server.
Use	• To use when accessing the server via proxy server.
Setting/ Procedure	• The default setting is OFF. ON "OFF"

C. Proxy Server

Functions	• To set the address and the port No. of the proxy server.
Use	• To use when accessing the server via proxy server.
Setting/ Procedure	<Server Address> • Enter an address using IPv4, IPv6, or FQDN format. <Port Number> • Enter the value between 1 and 65535 using the ▲ and ▼ keys.

D. Connection Setting

Functions	• To set the port No. and the time for timeout when accessing the FTP server, and also to set whether or not to enable PASV mode.
Use	• To use when accessing the FTP server. • To use when connecting by the PASV (passive) mode (FTP server side will inform the connection port before connecting).
Setting/ Procedure	<Port Number> • Enter the value between 1 and 65535 using the ▲ and ▼ keys. <Timeout> • Enter the value between 1 and 60 Min. using the ▲ and ▼ keys. <PASV Mode> • The default setting is Disable. Enable “Disable”

10.11.4 Forward Access Set

A. User ID

Functions	• To register the user ID for accessing the program server where firmware is to be stored.
Use	
Setting/ Procedure	• Enter the user ID (up to 64 one-byte characters) using the ▲ and ▼ keys.

B. Password

Functions	• To register the password for accessing the program server where firmware is to be stored.
Use	
Setting/ Procedure	• Enter the password (up to 64 characters) using the ▲ and ▼ keys.

C. URL

Functions	• To register the address and directory of the program server where the firmware is to be stored in URL.
Use	
Setting/ Procedure	• Enter the URL (up to 256 one-byte characters) using the ▲ and ▼ keys. **NOTE** **• Enter the URL which format suits the protocol to be used.** **When connecting to http http:// (Host name or IP address)/ directory name or https:// (Host name or IP address)/directory name.** **When connecting to ftp ftp:// (Host name or IP address) / directory name.**

D. File Name

Functions	• To register the file name of the firmware data to be downloaded.
Use	
Setting/ Procedure	• Enter the file name (up to 63 one-byte characters) using the ▲ and ▼ keys.

10.11.5 Download

Functions	• Access the program server according to the Internet ISW setting, and download the firmware.
Use	• To use when updating the firmware via network.
Setting/ Procedure	*1.* Select [Download]. *2.* Select [Start] to start downloading the firmware. *3.* The message to show the status will be displayed on the screen while connecting and transferring data. **NOTE** • **When it failed to connect to the program server, or failed to download, the error code and the message will be displayed. Check the cause of the error by the error code, and follow the message for resetting. Refer to "Error cord list" for the error codes.** See P.56 *4.* When the firmware is normally upgraded, the main body will automatically be restarted to complete the Internet ISW.

10.12 Settings in the Enhanced Security

10.12.1 Admin. Password

Functions	• To set and change the administrator password.
Use	• Use to change the administrator password. • Use this function when the administrator forget the administrator password because a new password can be set without entering the current administrator password with this.
Setting/ Procedure	• Enter the administrator password (8 digits) using the ▲ and ▼ keys. • The initial setting is “12345678.” New Password : Enter the new administrator password. Reenter Password : Enter the new administrator password again. **NOTE** • **When the following setting leads to the Password Rules [ON], the password with the same letters, the password which is same as the previous one and the password of less than eight digits cannot be changed.** **[Admin. Settings] → [Security Settings]**

10.12.2 Service Password

Functions	• To set and change the service password.
Use	• Use to change the service password.
Setting/ Procedure	• Enter the service password (8 digits) using the ▲ and ▼ keys. • The initial setting is “92729272.” Current Password : Enter the currently using service password. New Password : Enter the new service password. Reenter Password : Enter the new service password again. **NOTE** • **When the following setting leads to the Password Rules [ON], the password with the same letters as well as the password which is same as the previous one cannot be changed.** **[Admin. Settings] → [Security Settings]** • **NEVER forget the service password. When forgetting the service password, call responsible person of KMBT.**

10.12.3 Data Backup

Functions	• To backup NVRAM data in the main body to the flash memory.
Use	• To backup current data in order to prevent data in NVRAM from being erased unexpectedly. • To backup data manually. It usually makes backup every hour automatically. • Backup data can be restored by following the specified procedure when the trouble (CD3XX) occurred. Refer to “Troubleshooting” for details on restoration procedure. See P.338
Setting/ Procedure	*1.* Select [Data Backup] → [Start] *2.* Press the Menu/Select to start making a backup. *3.* Check the message [Completed. Please turn power OFF and ON.], and turn power switch OFF. Wait for ten seconds or more and turn power switch back ON.

10.12.4 Admin. Auth Lock REL

Functions	• To release an access lock that is activated after an administrator password authentication.
Use	• To release the access lock with service authority when an administrator password authentication fails and the access lock is activated. • When the power switch is turned OFF and ON or the period of time set in the Release Time Settings elapses, the machine releases the access lock that is activated after the administrator password authentication. In addition to these operations, this setting provides another way to release the access lock.
Setting/ Procedure	*1.* Select [Admin.AuthLockREL] → [Start]. *2.* Press the Menu/Select to release an access lock. *3.* When [OK] is displayed, press the Menu/Select key.

10.12.5 Release time

Functions	• To set the time that elapses before the machine releases an access lock that is activated after the CE password authentication.
Use	• To set the period of time that elapses before the machine releases the access lock, which aims to prevent the unintentional release of the access lock. • If the machine is set into an access lock state as a result of CE Authentication, turn power ON with the Menu/Select key held down; then, on the Trouble Reset screen, press ▲ → ▶ → ▼ → ◀ → ▼ → ▶ → ▲. This starts the access lock release timer (set by the release time function). The access lock state is thereafter released when the period of time set in this function elapses. **NOTE** • **If the access lock state is released through the above procedure, do not turn power OFF until the time elapses as set through [Service Mode] → [Security Settings] → [Release time]. If the power is turned OFF before the timer set for release time expires, the lock release operation becomes invalid.**
Setting/ Procedure	• The default setting is 05 Min. 1 to 60 Min. **NOTE** • **When Enhanced Security is set to ON in [Admin. Settings] → [Security Settings] → [EnhancedSecurity], the period of time that can be set in this setting is 5 minutes or more.**

10.13 CS Remote Care

10.13.1 Outlines

- CS Remote Care enables the machine and the computer at CS Remote Care center to exchange data through telephone line in order to control the machine.
- CS Remote Care enables the machine to call the computer at the center when trouble occurs. It also enables the computer at the center to contact the machine for the necessary data.
- Data which CS Remote Care handles can be divided into the following groups.
  a. Data which show the status of use of the machine such as total count, PM count.
  b. Data which show the abnormal situation on the machine such as where and how often errors occur.
  c. Data on adjustment
  d. Data on setting

NOTE

- **It cannot be set when the following setting is set to "ON".**
  [Admin. Settings] → [Security Settings] → [EnhancedSecurity]

10.13.2 Setting up the CS Remote Care

NOTE

- **For resetting up the machine which CS Remote Care has already been set up, clear the RAM for CS Remote Care before resetting.**
  See P.258
- **When using a telephone line modem for connection, use the data modem which is based on the ITU-T recommendations V.34/V.32 bis/V.32 and AT command.**

Step	Procedure	
	Using the telephone line modem	Using E-mail
0	Register the device ID to the application at CS Remote Care center. The initial connection is not available unless the device ID is registered.	
1	Connecting the modem Turn the power for the modem OFF. Connect the machine and the modem with a modem cable. Connect the modem and the wall jack with a modular cable. * For connecting the modular cable, see the manual for the modem.	Be sure to remove the telephone line modem when e-mail is used.
2	Clearing the RAM *1.* Select [Service Mode] → [CS Remove Care] → [Detail Settings]. *2.* Select [RAM Clear]. *3.* Select [Start], and press the Menu/Select key. See P.258	
3	Selecting the CS Remote Care function Select [Service Mode] → [CS Remote Care] → [System Settings], and select [Modem].	Selecting the CS Remote Care function Select [Service Mode] → [CS Remote Care] → [System Settings], and select [E-mail 1] or [E-mail 2].
4	Inputting the ID Code *1.* Select [Service Mode] → [CS Remote Care] → [ID Code]. *2.* Input the seven digits ID of the service person, and press the Menu/Select key. See P.256	

Step	Procedure	
	Using the telephone line modem	Using E-mail
5	Setting the date and time for CS Remote Care *1.* Select [Service Mode] → [CS Remote Care] → [Detail Settings]. *2.* Select [Date/TimeSettings]. *3.* Input the date, time and the time zone using the ▲ and ▼ keys, and press the Menu/Select key. See P.257	
6	Setting the Center ID *1.* Select [Service Mode] → [CS Remote Care] → [Detail Settings]. *2.* Select [Basic Settings] → [Center ID], and input the Center ID (five digits). See P.257	
7	Setting the Device ID *1.* Select [Service Mode] → [CS Remote Care] → [Detail Settings]. *2.* Select [Basic Settings] → [Device ID], and input Device ID (nine digits). See P.257	
8	Proceed to step 9.	Encryption setting *1.* Select [Service Mode] → [CS Remote Care] → [Detail Settings]. *2.* Select [Basic Settings] → [Encryption] and select either ON or OFF. Retransmission interval on e-mail delivery error • When selecting [E-mail 2], set the retransmission interval on e-mail delivery error in software SW setting. See P.250
9	Setting the telephone number of the Center *1.* Select [Service Mode] → [CS Remote Care] → [Detail Settings]. *2.* Select [Basic Settings] → [Center Tel Number]. *3.* Input the telephone number of the center using 0 to 9 and [P], [T], [W], [,]. See P.257	Setting the Respond Timeout *1.* Select [Service Mode] → [CS Remote Care] → [Detail Settings]. *2.* Select [Response Timeout] and enter the response timeout using the ▲ and ▼ keys. **NOTE** • **Under normal conditions, there is no need to change the default setting.** See P.257
10	Inputting the device telephone number *1.* Select [Service Mode] → [CS Remote Care] → [Detail Settings]. *2.* Select [Basic Settings] → [Device Tel Number]. *3.* Input the Device telephone number using 0 to 9 and [P], [T], [W], [,]. See P.257	Proceed to step 11.

Step	Procedure	
	Using the telephone line modem	Using E-mail
11	Inputting the AT command for initializing the modem *1.* Select [Service Mode] → [CS Remote Care] → [Detail Settings]. *2.* Select [AT command]. *3.* Input AT command. **NOTE** • **Change this command only when it is necessary. (They do not need to be changed in normal condition.)** • **For details on AT command, see the manual for the modem.** See P.259	Setting the E-mail address *1.* Select [Service Mode] → [CS Remote Care] → [Server Settings]. *2.* Select [RX Server], and set POP3 server address, POP3 login name, POP3 password and POP3 port number. See P.259 *3.* Select [RX Settings], and set the E-Mail address, AutoArrival Check, ConnectionTimeout and APOP Auth. See P.259 *4.* Select [TX Settings], and set the SMTP server address, SMTP Port Number, ConnectionTimeout, and Auth. Settings. See P.259 *5.* Select [CommunicationTest], and press the Menu/Select key to carry out a transmission/reception test. If it fails to exchange messages, see the error message to take necessary measure, and try again. See P.259
12	Setting the DIPSW for CS Remote Care **NOTE** • **This setting is not normally necessary. Take this step only when necessary in a specific connecting condition.**	Proceed to step 13.
13	Executing the initial transmission *1.* Select [Service Mode] → [CS Remote Care] → [Detail Settings]. *2.* Select [Basic Settings] → [Initial TX] → [Start]. *3.* Press the Menu/Select key to start initial transmission. *4.* When the machine is properly connected with the center, CS Remote Care setting screen will be displayed. **NOTE** • **The Initial TX key at the right bottom of the screen will be displayed only when the center ID, the device ID, Telephone number of the center and the device telephone number have been input.** See P.257	Receiving the initial connection E-mail message Sending the initial connection E-mail message from the center to the address of the printer. **NOTE** • **When receiving the initial connection E-mail message from the center while CS Remote Care-related screen is being displayed, the current setting information will be deleted, and CS Remote Care setting will be displayed.** • **For sending the initial connection E-mail, see the manual for CS Remote Care center.** • **Messages can be exchanged only between the center with initial connection and the printer.** • **The initial connection from the center will be carried out, and the E-mail address of the center will be stored in the printer.** • **When the initial registration is complete, the E-mail address of the center will be displayed by selecting [Service Mode] → [CS Remote Care] → [Detail Settings], [Basic Settings] → [E-mail].**

10.13.3 Software SW setting for CS Remote Care

NOTE

- **SW bits data are written into the NVRAM every time a change is made. In case you changed bit data by accident, be sure to restore the previous state.**

A. Input procedure

1. Select [Service Mode] → [CS Remote Care] → [Detail Settings] → [SoftwareSWSetting].
2. Input the switch number (two digits).
3. Select [Set by Bit], and select switch bit number using the arrow keys, and input 0 or 1. (For setting by hexadecimal numbers, select [Set by Hex], and input.)
4. Press the Menu/Select key.

NOTE

- **About functions of each switch, see to "B. List of software SW for CS Remote Care."**

B. List of software SW for CS Remote Care

NOTE

- **Do not change any bit not described on this table.**

SW No.	Bit	Functions	0	1	Default
SW 01	0	Dial mode	Pulse	Tone	1
	1	Reservation	—	—	0
	2	Reservation	—	—	0
	3	Reservation	—	—	0
	4	Baud rate	*1	*1	0
	5		*1	*1	0
	6		*1	*1	0
	7		*1	*1	1
SW 02	0	Emergency transmission	Do not call	Call	1
	1	Auto call on date specification	Do not call	Call	1
	2	Reservation	—	—	0
	3	Reservation	—	—	0
	4	Reservation	—	—	0
	5	Auto call on the IC Life	Do not call	Call	1
	6	Auto call on CCD clamp/gain adjustment failure	Do not call	Call	1
	7	Reservation	—	—	0
SW 03	0	Reservation	—	—	0
	1	Auto call on the toner empty	Do not call	Call	1
	2	Reservation	—	—	0
	3	Auto call on the waste toner bottle full	Do not call	Call	1
	4 to 7	Reservation	—	—	0
SW 04	0 to 7	Reservation	—	—	0

SW No.	Bit	Functions	0	1	Default
SW 05	0	Modem redial interval	*2	*2	1
	1		*2	*2	1
	2		*2	*2	0
	3		*2	*2	0
	4 to 7	Reservation	—	—	0
SW 06	0	Modem redial times	*3	*3	0
	1		*3	*3	1
	2		*3	*3	0
	3		*3	*3	1
	4		*3	*3	0
	5		*3	*3	0
	6		*3	*3	0
	7	Reservation	—	—	0
SW 07	0	Redial for response time out	Do not redial	Redial	1
	1 to 7	Reserved	—	—	0
SW 08	0	Retransmission interval on e-mail delivery error	*4	*4	0
	1		*4	*4	1
	2		*4	*4	1
	3		*4	*4	0
	4 to 7	Reservation	—	—	0
SW 09	0	Retransmission times on e-mail delivery error	*5	*5	0
	1		*5	*5	1
	2		*5	*5	0
	3		*5	*5	1
	4		*5	*5	0
	5		*5	*5	0
	6		*5	*5	0
	7	Reservation	—	—	0
SW 10	0 to 7	Reservation	—	—	0
SW 11	0	Timer 1 RING reception → CONNECT reception	*6	*6	0
	1		*6	*6	0
	2		*6	*6	0
	3		*6	*6	0
	4		*6	*6	0
	5		*6	*6	1
	6		*6	*6	0
	7		*6	*6	0

SW No.	Bit	Functions	0	1	Default
SW 12	0	Timer 2 Dial request completed → CONNECT reception	*7	*7	0
	1		*7	*7	0
	2		*7	*7	0
	3		*7	*7	0
	4		*7	*7	0
	5		*7	*7	0
	6		*7	*7	1
	7		*7	*7	0
SW 13	0 to 7	Reservation	—	—	0
SW 14	0	Timer 4 Line connection → Start request telegram delivery	*8	*8	0
	1		*8	*8	0
	2		*8	*8	0
	3		*8	*8	0
	4		*8	*8	0
	5		*8	*8	1
	6		*8	*8	0
	7		*8	*8	0
SW 15	0	Timer 5 Wait time for other side's response	*9	*9	0
	1		*9	*9	1
	2		*9	*9	1
	3		*9	*9	1
	4		*9	*9	1
	5		*9	*9	0
	6		*9	*9	0
	7		*9	*9	0
SW 16	0 to 7	Reservation	—	—	0
SW 17	0 to 7	Reservation	—	—	0
SW 18	0	Attention display To set weather to give the alarm display when using the modem but the power for the modem is OFF.	Do not call	Call	1
	1 to 7	Reservation	—	—	0
SW 19 to SW 40	0 to 7	Reservation	—	—	0

*1: Baud rate

Mode	01-7	01-6	01-5	01-4
9600 bps	0	1	1	0
19200 bps	0	1	1	1
“38400 bps”	1	0	0	0

*2: Modem redial interval

Mode	05-3	05-2	05-1	05-0
1 minute	0	0	0	1
2 minutes	0	0	1	0
“3 minutes”	0	0	1	1
4 minutes	0	1	0	0
5 minutes	0	1	0	1
6 minutes	0	1	1	0
7 minutes	0	1	1	1
8 minutes	1	0	0	0
9 minutes	1	0	0	1
10 minutes	1	0	1	0

*3: Modem redial times

Mode	06-6	06-5	06-4	06-3	06-2	06-1	06-0
0 to 9 times	000 0000 to 000 1001						
“10 times”	0	0	0	1	0	1	0
11 to 99 times	000 1011 to 110 0011						

*4: Retransmission interval on e-mail delivery error

Mode	08-3	08-2	08-1	08-0
0 minute	0	0	0	0
10 minutes	0	0	0	1
20 minutes	0	0	1	0
30 minutes	0	0	1	1
40 minutes	0	1	0	0
50 minutes	0	1	0	1
“60 minutes”	0	1	1	0
70 minutes	0	1	1	1
80 minutes	1	0	0	0
90 minutes	1	0	0	1
100 minutes	1	0	1	0
110 minutes	1	0	1	1
120 minutes	1	1	0	0

*5: Retransmission times on e-mail delivery error

Mode	09-6	09-5	09-4	09-3	09-2	09-1	09-0
0 to 9 times	000 0000 to 000 1001						
“10 times”	0	0	0	1	0	1	0
11 to 99 times	000 1011 to 110 0011						

*6: Timer 1 (RING reception → CONNECT reception)

Mode	11-7	11-6	11-5	11-4	11-3	11-2	11-1	11-0
0 to 31 sec	0000 0000 to 0001 1111							
“32 sec”	0	0	1	0	0	0	0	0
33 to 255 sec	0010 0001 to 1111 1111							

*7: Timer 2 (Dial request completed → CONNECT reception)

Mode	12-7	12-6	12-5	12-4	12-3	12-2	12-1	12-0
0 to 63 sec	0000 0000 to 0011 1111							
“64 sec”	0	1	0	0	0	0	0	0
65 to 255 sec	0100 0001 to 1111 1111							

*8: Timer 4 (Line connection → Start request telegram delivery)

Mode	14-7	14-6	14-5	14-4	14-3	14-2	14-1	14-0
0 to 31 (x 100 msec)	0000 0000 to 0001 1111							
“32 (x 100 msec)”	0	0	1	0	0	0	0	0
33 to 255 (x 100 msec)	0010 0001 to 1111 1111							

*9: Timer 5 (Wait time for other side’s response)

Mode	15-7	15-6	15-5	15-4	15-3	15-2	15-1	15-0
0 to 29 sec	0000 0000 to 0001 1101							
“30 sec”	0	0	0	1	1	1	1	0
31 to 255 sec	0001 1111 to 1111 1111							

10.13.4 Setup confirmation

- **Follow the steps below to make sure that CS Remote Care has been properly set up.**

1. Call the Service Mode to the screen.
2. Select [CS Remote Care].
3. Check to make sure that only selected item is displayed.

10.13.5 Calling the maintenance

- When CE starts maintenance, inputting the ID code of CE (seven digits: numbers which CE can identify. They are controlled by the distributor.) will transmit the information to the Center side and tells that the maintenance has started. When the maintenance is finished, select [Maintenance Done] → [Start], press the Menu/Select key will transmit the information to the center and tells that it is finished.

A. When starting the maintenance

1. Select [Service Mode] → [CS Remote Care].
2. Select [ID Code], and input ID Code.
3. Press the Menu/Select key.

* The Start key blinks while maintenance is being carried out.

B. When finishing the maintenance

1. Select [Service Mode] → [CS Remote Care].
2. Select [Maintenance Done] → [Start], and press the Menu/Select key.

10.13.6 Calling the center from the administrator

- When the CS Remote Care setup is complete, the administrator can call the CS Remote Care center.

1. Select [System Settings] → [System Connection].
2. Select [CallRemoteCenter].
3. Press the Menu/Select key.
   When the setup is not complete or another transmission is being carried out, the CallRemoteCenter key will not be displayed, and the transmission is not available.

NOTE

- **For transmitting data of the machine by calling the center on the specified date and time, refer to the manual for CS Remote Care center.**

10.13.7 Checking the transmission log

- The transmission log list will be output to be checked.

1. Select [Service Mode] → [CS Remote Care] → [Detail Settings] → [Print Comm.Log].
2. Select 1-Sided Print or 2-Sided Print.
3. Load tray 1 or tray 2 with A4S paper.
4. Press the Menu/Select key to output transmission log.

10.13.8 Detail on settings

A. System Settings

Functions	• To select the system type for remote diagnosis.
Use	• Use to newly build or change the system.
Setting/ Procedure	• Select E-Mail, Modem. E-mail 1 E-mail 2 Modem

B. ID Code

Functions	• To register the service ID.
Use	• Use when registering and changing service ID.
Setting/ Procedure	• Enter a 7-digit code. (0000001 to 9999999) <Registration> • Enter the service ID. • Press the Menu/Select key to register the ID. • The [Detail Settings] will appear when the ID has been registered.

C. Detail Settings
(1) Basic Settings

Functions	• Execute the primary setting.
Use	• Use to change the set contents. • Use to register the machine to the CS Remote Care center.
Setting/ Procedure	*1.* Select [Service Mode] → [CS Remote Care]. *2.* Selecting the [Detail Settings] will display the primary setting. <Center Setting> • Set the center ID, Device ID, and the phone No. • When e-mail is selected for system and all setup procedures are completed, e-mail address of the center is displayed. * When entering the phone number, keys on the screen have following meanings. [,] Pose : Waits to start transmitting after dialing [W] Wait : Detects the dial tone of the other end [T] Tone dial : Carry out tone dialing [P] Pulse dial : Carry out pulse dialing [*], [#] : To be used as necessary <Schedule (Only when the [E-mail 2] is selected)> • Set the schedule of notification to the center. • Up to three different notification schedules can be registered. • Select the notification cycle from [Interval ofDay(s)], [Day of the Week], or [Date of the Month]. When selecting [Interval ofDay(s)] for the notification cycle, set the Day Frequency. When selecting [Day of the Week] for the notification cycle, set the Week Frequency and day of the week. When selecting [Date of the Month], set the Month Frequency and the date of the month. <Notification Item (Only when the [E-mail 2] is selected)> • Select the items of data that will be sent to the center in one-way transmission through E-mail 2. • The following table shows each of the notification item keys and corresponding data.

[1]	Sales count data	[7]	EKC data
[2]	Error count data	[8]	Adjustment data
[3]	Service count data	[9]	Coverage data
[4]	Life count data Life cycle data	[10]	Not used
[5]	CSRC-System data Device config data	[11]	Not used
[6]	History data	[12]	Not used

NOTE
- **Multiple items of data can be selected and sent at one time. However, be sure that only EKC data cannot be sent together with other items of data.**

Initial TX
- Select the Initial TX will sent the information to the CS Remote Care center to register the machine.
  (Only when the modem is selected on the system Input.)

(2) Date/Time Setting

Functions	• To set the data and time-of-day.
Use	• Use to set or change the date and time-of-day.
Setting/ Procedure	*1.* Select [Service Mode] → [CS Remote Care]. *2.* Select [Detail Settings] to access Date/TimeSettings. *3.* Enter the date (month, day and year), time-of-day, and the time zone. *4.* Press the Menu/Select key to start the clock.

(3) RAM Clear

Functions	• To clear the following data at the center ID Code, Basic Settings, Date/TimeSettings (Time Zone), SoftwareSWSetting and AT command.
Use	• To be used for setting CS Remote Care. • To be used for reset the every data of the center to default. **NOTE** • **If RAM clear is selected during transmission, RAM clear processing will be implemented at the time the transmission is completed regardless of whether it is done properly or not.**
Setting/ Procedure	• The default setting is “Cancel.” Start “Cancel”

(4) Print Comm. Log

Functions	• To print out the communication log.
Use	• Use to output and use the communication log.
Setting/ Procedure	*1.* Select [Service Mode] → [CS Remote Care]. *2.* Select [Detail Settings] to access Print Comm.Log. *3.* Load tray 1 or tray 2 with A4S or $8^1/_2$ x 11 paper. *4.* Press the Menu/Select key to print out the communication log.

(5) Software SW Setting

Functions	• To change the CS Remote Care settings.
Use	• To change the settings for CS Remote Care as necessary.
Setting/ Procedure	• Refer to “Software SW setting for CS Remote Care” for the setting. See P.250

(6) Response Timeout

Functions	• It sets the intervals for resending e-mails when transmission error occurred. • It can be set only when [E-mail] is selected by System Settings.
Use	• To use when changing the intervals for resending e-mails when transmission error occurred.
Setting/ Procedure	• The default setting is 0060 Min. “0060 Min.” (0010 to 1440)

(7) AT command

Functions	• To set the command to be issued at the time of modem initialization. • This setting is available only when [Modem] is selected for the system setting.
Use	• To set the command to be issued at the time of modem initialization.
Setting/ Procedure	• Enter the command and press the Menu/Select to register.

D. Server Settings

• Server Settings can be set only when [E-mail] is selected by System Settings.

(1) RX Server

<POP3 server>

Functions	• To set the POP3 server address used for the CS Remote Care.
Use	• To set the address of the POP3 Server. • POP3 server address can be set with IP address or the domain name.
Setting/ Procedure	<Enter IP address> • IP address version 4 format [0 to 255].[0 to 255].[0 to 255].[0 to 255] <Enter FQDN> • Enter the domain name.

<POP3 Login Name>

Functions	• To set the logon name for the POP3 server used for the CS Remote Care.
Use	• To set the logon name for the POP3 server.
Setting/ Procedure	• The default setting is No. • Up to 64 characters (alphanumeric characters and symbols) can be used.

<POP3 Password>

Functions	• To set the logon password for the POP3 server used for the CS Remote Care.
Use	• To set the logon password for the POP3 server.
Setting/ Procedure	• The default setting is No. • Up to 15 characters (alphanumeric characters and symbols) can be used.

<POP3 Port Number>

Functions	• To set the POP3 port number used for the CS Remote Care.
Use	• To set the port number for the POP3 server.
Setting/ Procedure	• The default setting is 00110. "00110" (1 to 65535)

(2) RX Settings

<E-mail Setting>

Functions	• To set the e-mail address used for the CS Remote Care.
Use	• To set the e-mail address.
Setting/ Procedure	• The default setting is No. • Up to 129 characters (alphanumeric characters and symbols) can be used.

<Auto Arrival Check>

Functions	• To set whether or not to use mail check and the time interval for the POP server used for the CS Remote Care.
Use	• To set whether or not to use mail check and the time interval for the POP server used for the CS Remote Care. • To change the time interval for mail check.
Setting/ Procedure	<Check Setting.> • The default setting is OFF. ON “OFF” <Check Interval.> • The default setting is 010 Min. 010 Min. (1 to120)

<Connection Timeout>

Functions	• To set the timeout period for connection during reception.
Use	• To change the timeout period for connection during reception.
Setting/ Procedure	• The default setting is 060 sec. “060 sec” (030 to 300 sec)

<APOP Auth.>

Functions	• To set whether or not to authenticate the APOP during reception.
Use	• To authenticate the APOP during reception.
Setting/ Procedure	• The default setting is OFF. ON “OFF”

(3) TX Settings

<SMTP server>

Functions	• To set the SMTP sever address for transmission used for the CS Remote Care.
Use	• To set the SMTP server address. • SMTP server address can be set by the IP address or the domain name.
Setting/ Procedure	<Enter IP address> • IP address version 4 format [0 to 255].[0 to 255].[0 to 255].[0 to 255] <Enter FQDN> • Enter the domain name.

<SMTP Port Number>

Functions	• To set the SMTP port number for transmission used for the CS Remote Care.
Use	• To set the Port Number of the SMTP Server.
Setting/ Procedure	• The default setting is 00025. "00025" (00001 to 65535)

<Connection Timeout>

Functions	• To set the timeout period for transmission.
Use	• To change the timeout period for connection during transmission.
Setting/ Procedure	• The default setting is 060 sec. "060 sec" (030 to 300 sec)

<Auth. Method>

Functions	• To set whether or not to authenticate during transmission via SMTP server.
Use	• To use when authenticating during transmission. Available authentication mode: POP before SMTP, SMTP Auth.
Setting/ Procedure	• The default setting is OFF. "OFF" POP before SMTP SMTP Auth. * Setting to "POP before SMTP" will set the time for POP before SMTP. • The default setting is 60 sec. "60 sec" (00 to 60 sec) * When setting to SMTP authentication, select the "Setting Check" key for authentication. User ID : Enter the user ID for SMTP authentication. Password : Enter the password for SMTP authentication. Domain Name : Enter the domain name for SMTP authentication.

(4) Communication Test

Functions	• To determine the correct transmission and reception using CS Remote Care.
Use	• Use to determine the correct transmission and reception using CS Remote Care.
Setting/ Procedure	• Select [Start] and press the Menu/Select key to let the machine start the transmission and reception test. • The test procedure and result will be displayed on the screen.

(5) Data Initialized

Functions	• To initialize the contents for the sever setting.
Use	• Use to initialize the contents for the server setting.
Setting/ Procedure	• The default setting is OFF. ON "OFF"

10.13.9 List of the CS Remote Care error code

A. When connecting by modem

Error code	Error	Solution
0001	The line is busy (Busy detection)	• Transmit again manually.
0002	Failure of the Modem default setting at transmitting (When the transmission completes with modem initial setting failed)	• Check if the power of the modem is ON. • Check the connecting condition between the modem and the main body.
0003	Timeout of CONNECT at transmitting (No response to ATD)	• Transmit again manually • Check if the power of the modem is ON. • Check the connecting condition between the modem and the main body.
0005	Timeout of CONNECT at receiving (No response to ATA)	• Check if the power of the modem is ON. • Check the connecting condition between the modem and the main body.
0006	Shut down of the data modem line (Host) (Carrier OFF is detected)	• No solution, because the line is shut down at the host side.
0008	Timeout of start request telegram delivery (Start request telegram is not delivered after line connection)	• Transmit again manually.
0009	Timeout of finish request telegram delivery (Finish request telegram is not delivered (Start of shut down).)	• Transmit again manually.
000A	Receiving rejection (Receiving is made when the main body is set to reject receiving.)	• Check the setting condition of the host side. • Check the setting condition of the main body side.
000B	RS232C driver over run (When the modem detects over run.)	• If the same error is detected several times, turn the modem power OFF and ON.
000C	If the same error is detected several times, turn the modem power OFF and ON.	• If the same error is detected several times, turn the modem power OFF and ON.
000D	Break Interrupt (BI) indicator (When the modem detects Break Interrupt (BI) indicator.)	• If the same error is detected several times, turn the modem power OFF and ON.
0011	Baud rate ERROR (When selected baud rate is out of the specification (9600 bps to 38400 bps).)	• Check the baud rate of the software DipSW.
0018	Machine ID has already been registered (Request telegram 2 (SET-UP) comes from the main body that has already registered machine ID.)	• Set the initial registrations again for all including the host side.
0019	Center ID error (Center ID of the host is not identical with the one of start request telegram.)	• Check center ID setting of the main body side. • Check center ID setting of the main body side.

Error code	Error	Solution
001A	Device ID inconsistency (Device ID of the host is not identical with the one of start request telegram.)	• Check device ID setting of the main body side. • Check the setting of the host side.
001B	Device ID unregistered (Request telegram 2 (Constant data transmitting, emergency call) comes from the main body that has not registered machine ID yet.)	• Check device ID setting of the main body side. • Check the setting of the host side.
001E	Impossible to change (during printing) (Setting cannot be changed because the setting change is made during the machine is printing or starts printing.)	• Try again when the machine is not printing.
0020	Timeout of telegram delivery (At waiting mode of telegram delivery the machine fails to receive the telegram in a given time.)	• Try communication again.
0027	Transmission / receiving collision (Receiving is detecting during transmitting processing)	• Try communication again.

NOTE

- **When a code other than the ones listed above is displayed, contact KMBT and inform the error code.**

B. When connecting by e-mails

Error code	Error	Solution
0001	Connection timeout during transmission	• Check the SMTP server on User side.
0###	Transmission error ***: SMTP responding code (hexadecimal)	• Check the SMTP server on User side.
0003	Connection timeout when receiving	• Check the POP3 server on User side.
0005	Receiving error	• Check the POP3 server on User side.
1030	Machine ID mismatching • Received an e-mail which tells that machine ID mismatches.	• Check the machine ID setting. • Check the machine ID setting on host side.
1062	Modifying not available due to the print job currently performing • When informing the host that it cannot be modified due to the print job currently performing.	• Ask the host to send another instruction mail for modifying.
1081	Frame No. error • The last frame has not been received. • There are missing frame No.	• Check the status of the machine registration on host side.
1084	Date expired • Expiration date for data modification command has passed.	• Ask the host to send another instruction mail for modifying.
1092	Received an error mail when center setup is not complete	• Check the status of the machine registration on host side.
2039	Socket is not connected. • LAN cable on the printer side is detached.	• Check the SMTP server and POP3 server on user side.
203E	Network is down. • LAN cable on the printer side is detached.	• Check the connection between the printer on the user's side and the network connector. • Check the network environment on the user's side.
3000	POP3_AUTHORIZATION_ERR	• Check the POP3 server environment on user's side.
3001	POP3_TRANSACTION_ERR	• Check the POP3 server environment on user's side.
3002	POP3_CONNECT_ERR	• Check the POP3 server environment on user's side.
3003	POP3_TIMEOUT_ERR	• Check the POP3 server environment on user's side.
3004	POP3_FORMAT_ERR	• Check the POP3 server environment on user's side.
3005	POP3_MEMORY_ERR	• Check the POP3 server environment on user's side.
3006	POP3_JOBID_ERR	• Check the POP3 server environment on user's side.
3007	POP3_NO_DATA_ERR	• Check the POP3 server environment on user's side.

Error code	Error	Solution
3008	POP3_DELETE_FAIL_ERR	• Check the POP3 server environment on user's side.
3009	POP3_MAILBOX_FULL	• Check the POP3 server environment on user's side.
4103	Not ready • Tried to transmit or receive an e-mail when the machine was not yet in the e-mail receiving status after power was turned ON.	• Wait for a while and try transmitting again.
4104	SMTP channel not ready	• Wait for a while and try transmitting again.
4105	POP3 channel not ready	• Wait for a while and try transmitting again.
4106	Not Ready other than the ones listed above.	• Wait for a while and try transmitting again.

NOTE

- **When a code other than the ones listed above is displayed, contact KMBT and inform the error code.**

10.13.10 Troubleshooting for CS Remote Care

If communication is not done properly, check the condition by following the procedures shown below.

1. Shift the screen in the order of [Service Mode] → [CS Remote Care] → [Detail Settings].
   At this time, in the cases of initial transmitting / administrator transmitting / maintenance start transmitting / maintenance finish transmitting, the communication result will be displayed at the top of the screen.

* For the communication result, the following message will be displayed based on its success or failure.

Display of communication result	Cause	Solution
Communicating	—	—
Communication trouble with the center	Although the machine tries to communicate with the center, there is any trouble and the communication completes unsuccessfully.	• See the list of error message and confirm the corresponding point. See P.262
Complete successfully	—	—
Modem trouble	Although the machine tries to communicate with the center, there is any trouble in the modem.	• Check if the power of modem in ON. • Check if there is any problem in connection between the modem and the main body.
Busy line	Although the machine tries to communicate with the center, the line to the center is busy.	• Communicate with the center again.
No response	Although the machine tries to communicate with the center, there is no response from the center.	• Communicate with the center again. • Check the communication environment of the center side.

11. Procedure for resetting

11.1 Trouble resetting

Functions	• If the all troubles occur and the status would not be cleared by turning power switch OFF and ON again, or opening and closing the front door, clear the status of the machine.
Use	• To be used when the status would not be cleared by turning power switch OFF and ON again, or opening and closing the front door in case of a trouble.
Setting/ Procedure	*1.* Turn OFF the power switch. *2.* Turn power switch ON while pressing the Menu/Select key. *3.* Check that the Trouble Reset screen appears. *4.* Press the Menu/Select key. *5.* Check to make sure that [Completed. Please turn power OFF and ON.] is displayed and the it has been reset. *6.* After turning off the power switch, turn it on again more than 10 seconds after and check if the machine starts correctly.

11.2 Contents to be cleared by reset function

Items for clearing / Contents to be cleared			Front door open/close	Power switch OFF/ON	Trouble resetting	Initialization	
						System Error Clear	Data Clear
Jam display			❍	—	—	❍	❍
Malfunction display	Rank A	Fusing	—	—	❍	❍	—
	Rank B		❍	—	❍	—	—
	Rank C		—	❍	❍	—	—
Erratic operation / display			—	❍	—	—	—
Utility Mode (Except items on Expert Adjustment.)			—	—	—	—	❍
Billing Setting	Counter Setting		—	—	—	—	❍
	Management Function Choice		—	—	—	—	❍

❍: Will be cleared (initialized)
-: Will not be cleared

12. Mechanical adjustment

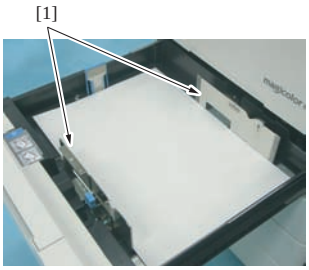
12.1 Mechanical adjustment of the paper feed section

12.1.1 Skew adjustment of the tray 2, 3

This adjustment must be made in the following case:

- **To reduce paper skew that cannot be corrected by the registration loop adjustment when the tray 2 or 3 is within the specifications.**

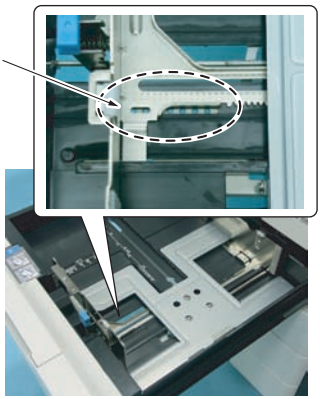
1. Pull out the tray where this adjustment is made.



A02EF3C020DA

2. Load the tray with the paper.

3. Move the set of the paper guides [1] until no gap is produced between the both ends of paper and the paper guides.



A02EF3C021DA

4. Remove the paper from the tray.

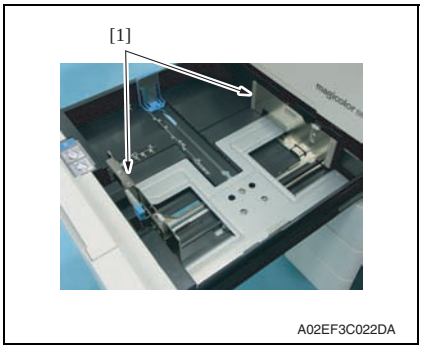
5. Secure the set of paper guides [1] on the tray using a screw (M3 x 8 mm: V121 0308 04).

12.1.2 Centering adjustment of the tray 2, 3

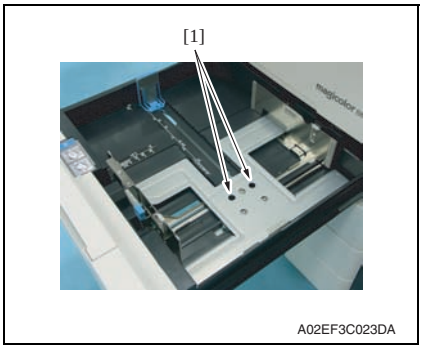
This adjustment must be made in the following case:

- **When an image printed on a print is displaced from the correct position with the use of the tray2/3.**

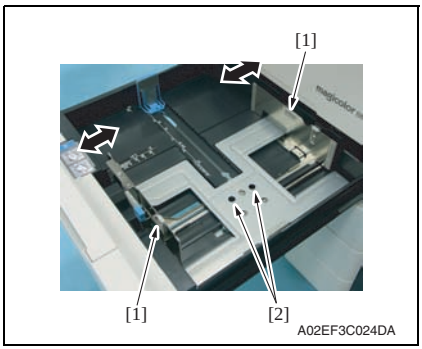
1. Make a test print and check the amount of misalignment.
2. Pull out the tray where this adjustment is made.



3. Stretch the paper guide [1] to the maximum size position.



4. Loosen two screws [1].

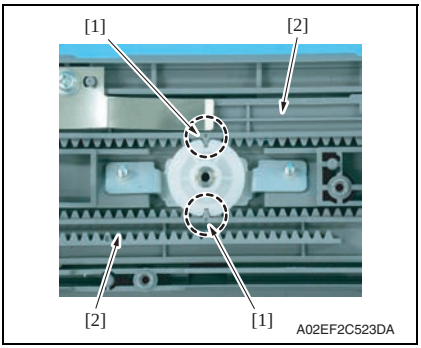


5. Move the paper guide [1] complete according to the amount of the mis-centering you checked in step 1 and adjust the center position of it.
6. Tighten two screws [2].
7. Make another test print and check the amount of misalignment.

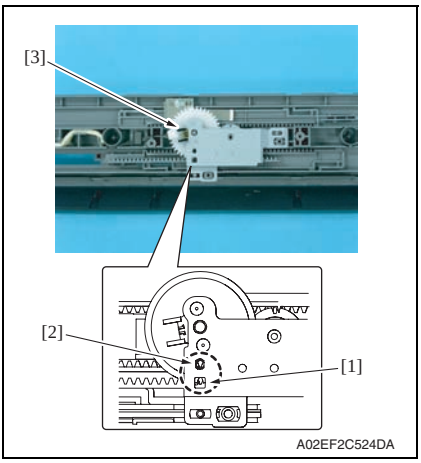
12.1.3 Adjustment of the tray 1 paper size unit

This adjustment must be made in the following case:

- **The tray 1 paper size unit has been removed.**



1. Align the match mark [1] on the paper feed tray 1 guide rack gear with the groove on the gear rim at two places and install two paper feed tray 1 guide rack gears [2].



2. When installing the paper feed tray 1 CD size sensor assy [3], make sure that the part [1] (pointed by the arrow) on the paper feed tray 1 guide rack gear and the gear's hole [2] on the paper feed tray 1 CD size sensor assy are placed in a straight line.
3. Secure the paper feed tray 1 CD size sensor assy with two screws.
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 paper feed tray 1 guide.
5. Call the Service Mode to the screen and select [MachineAdjustment] → [1st Tray Adjustment]. Then, carry out tray 1 adjustment.

12.2 PH unit mechanical adjustment

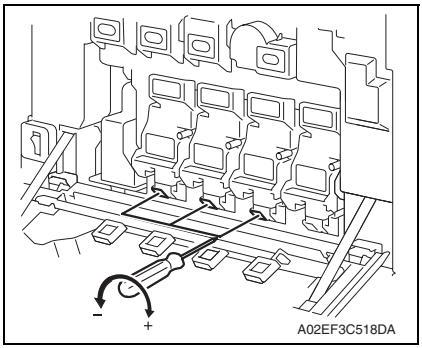
12.2.1 Skew adjustment

This adjustment must be made in the following case:

- **When PH unit is replaced.**

1. Turn ON the power switch.
2. Select [Service Mode] → [Test Mode] → [Gradation] and output the test pattern.
3. Using the output test pattern, check if each color of CMYK is printed in correct pattern. If the pattern is not correct, any troubles such as connecting failure in PH unit of the corresponding color may occur, which should be modified.
   If there is not any problem, proceed to step 4.
4. Select [Service Mode] → [ProcessAdjustment] → [Stabilization] → [Initialize + Stabi.] and run [Initialize + Stabi.].
5. After image stabilization is completed, select [Service Mode] → [List Output] → [Adjustment List]. Then, produce an output of the adjustments list and check that value X of each of C, M, and Y of Color Regist falls within the specifications.

Specification: within ± 4



- 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 satisfy the specification, proceed to step 10.

6. Open the front door.
7. 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 5, is [-5], which means out of the specification, turn the skew adjustment dial of PH (yellow) to the left (- direction) for 5 clicks.

NOTE

- **Do not execute the skew adjustment of black PH unit.**

8. Close the front door and select [ProcessAdjustment] → [Stabilization] → [Initialize + Stabi] and run [Initialize + Stabi].
9. After image stabilization is completed, select [Service Mode] → [List Output] → [Adjustment List]. Then, produce an output of the adjustments list and check that value X of each of C, M, and Y of Color Regist falls within the specifications.

NOTE

- **Using the numeric values on the list produced through [Service Mode] → [List Output] → [Adjustment List] or [Management List], isolate the cause of the image problem.**
- If either value is out of the specification, repeat step 6 to 9 to continue the adjustment until all C, M, Y colors satisfy the specification.

10. Exit the Service Mode.

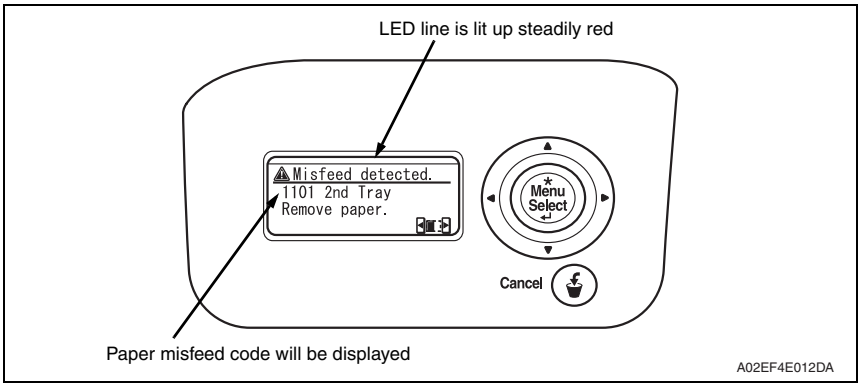
Blank Page

Troubleshooting

13. Jam display

13.1 Misfeed display

- When a paper misfeed occurs, the LED line lights up red steadily and the misfeed message is displayed on the control panel of the machine.



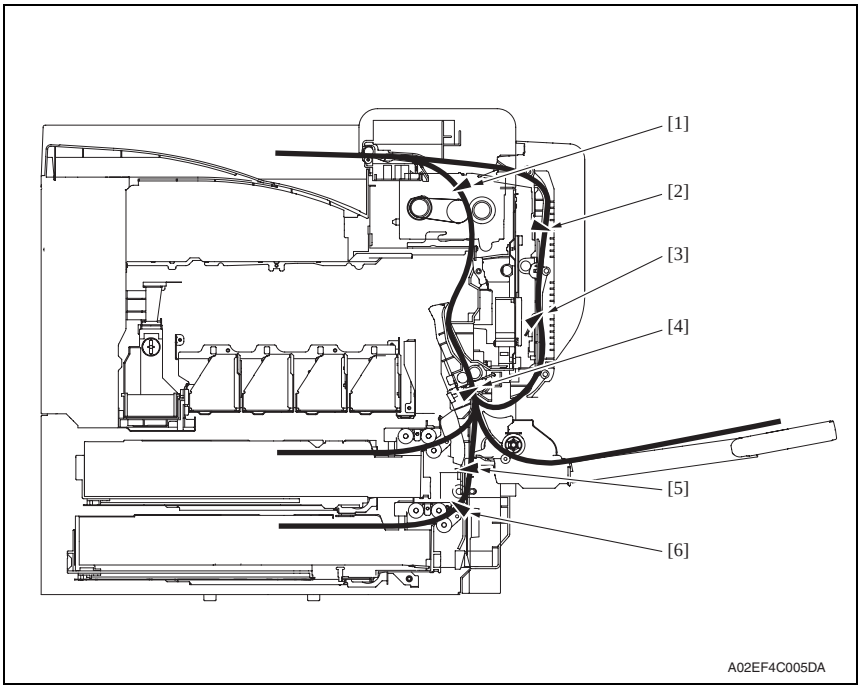
Code *1	Jam type	Misfeed processing location	Action
1101	Misfeed at tray 2 feed section	Right door	P.277
1201	Misfeed at tray 3 feed section	Vertical transport door	P.278
1301	See P.21 of the PC-106/205 service manual.		
2001			
1401			
2001			
1501	See P.27 of the PC-406 service manual.		
2001			
1001	Misfeed at tray 1 feed section	Right door	P.279
9201	Misfeed at duplex pre-registration section	Right door, duplex door	P.280
2001	Misfeed at vertical transport section	Right door, vertical transport door	P.281
3001	2nd image transfer section	Right door	P.282
3201	Misfeed at exit section	Right door	P.283
9301	Misfeed at duplex transport section	Duplex door	P.284
1 9901	Controller jam	—	P.285
7216	See P.67 of the FS-519/PK-515/OT-602 service manual. See P.59 of the FS-609/PK-501 service manual.		
1 7218			
7221			
7281			
7243	See P.67 of the FS-519/PK-515/OT-602 service manual.		
7221	See P.33 of the SD-505 service manual.		
1 7225	See P.33 of the SD-505 service manual. See P.59 of the FS-609/PK-501 service manual.		
7284	See P.33 of the SD-505 service manual.		
7285			
7290	See P.7 of the MT-502 service manual.		

*1: JAM code is described in the paper jam history of the machine management list.
[Service Mode] → [List Output] → [Management List]

13.1.1 Misfeed display resetting procedure

- Open the corresponding door, clear the sheet of paper misfed, and close the door.

13.2 Sensor layout



[1]	Paper exit sensor	PS25	[4]	Sensor in front of tim. roller	PS23
[2]	Duplex paper passage sensor/1	PS33	[5]	Paper feed tray 3 vertical transport sensor	PS16
[3]	Duplex paper passage sensor/2	PS34	[6]	Paper feed tray 3 paper feed sensor	PS14

13.3 Solution

13.3.1 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.
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 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.

13.3.2 Solution when paper curl occurs

Step	Check items/actions		
1	Turn over the stacked paper in the paper tray.	OK	—
		NG	Go to step 2.
2	Does paper curl occur just after a warm-up has been completed or the sleep mode has been turned OFF?	YES	Go to step 3.
	Does paper curl occur under normal conditions (under conditions other than those mentioned above)?	YES	Go to step 5.
3	*1.* Call the Service Mode to the screen. *2.* Select [System Settings] → [Change WarmupTime]. *3.* Change the setting to [Mode 3]. See P.217	OK	—
		NG	Go to step 4.
4	*1.* Call the Service Mode to the screen. *2.* Select [System Settings] → [Change WarmupTime]. *3.* Change the setting to [Mode 4]. See P.217	—	—
5	*1.* Call the Service Mode to the screen. *2.* Select [MachineAdjustment] → [FusingTemperature] → [Heated Side]. *3.* Select a paper type. *4.* Change the temperature to [-10 °C]. See P.225	OK	—
		NG	Go to step 6
6	*1.* Call the Service Mode to the screen. *2.* Select [MachineAdjustment] → [FusingTemperature] → [Heated Side]. *3.* Select a paper type. *4.* Change the temperature of to [-20 °C]. See P.225	—	—

13.3.3 Misfeed at tray 2 feed section

A. Detection timing

Type	Description
Detection of misfeed at tray 2 feed section	• The leading edge of the paper does not turn ON the sensor in front of tim. roller (PS23) even after the lapse of a given period of time after the tray 2 starts to feed paper.
Detection of paper left in tray 2 feed section	• The paper feed tray 2 chain feed sensor (PS1) is turned ON when the power switch is turned ON, a door or cover is opened and closed, or a misfeed or malfunction is reset.
Tray 2 feed section loop registration reversing jam	• For paper fed from the tray 2, due to a delay in paper arrival, loop forming in front of the timing roller is not complete before the rise timing of the transport motor (M1).
Tray 2 feed section TOD permit waiting jam	• For paper fed from the tray 2, TOD permit continues to be disabled for a predetermined period of time after the timing of TOD output.

B. Action

Relevant parts	
Transport motor (M1) Paper feed tray 2 paper feed clutch (CL1) Paper feed tray 2 chain feed sensor (PS1) Sensor in front of tim. roller (PS23)	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Initial check items	—	—
2	PS1 I/O check	PRCB CN12PRCB-8 (ON)	D-8 to 9
3	PS23 I/O check	PRCB CN1PRCB-3 (ON)	D-18
4	CL1 operation check	PRCB CN12PRCB-11 (ON)	D-9
5	M1 operation check	PRCB CN34PRCB-10 (REM) PRCB CN34PRCB-13 (LOCK)	D-22
6	Change PRCB	—	—

13.3.4 Misfeed at tray 3 feed section

A. Detection timing

Type	Description
Detection of misfeed at tray 3 feed section	• The leading edge of the paper does not unblock the paper feed tray 3 vertical transport sensor (PS16) even after the lapse of a given period of time after the tray 3 starts to feed paper.
Detection of paper left in tray 3	• The paper feed tray 3 vertical transport sensor (PS16) is unblocked when the power switch is turned ON, a door or cover is opened and closed, or a misfeed or malfunction is reset. • The paper feed tray 3 paper feed sensor (PS14) is unblocked when the power switch is turned ON, a door or cover is opened and closed, or a misfeed or malfunction is reset.
Tray 3 feed section TOD permit waiting jam	• For paper fed from the tray 3, TOD permit continues to be disabled for a predetermined period of time after the timing of TOD output.

B. Action

Relevant parts	
Transport motor (M1) Paper feed tray 3 paper feed clutch (CL2) Paper feed tray 3 vertical transport clutch (CL3) Paper feed tray 3 paper feed sensor (PS14) Paper feed tray 3 vertical transport sensor (PS16)	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Initial check items	—	—
2	PS14 I/O check	PRCB CN9PRCB-8 (ON)	D-10
3	PS16 I/O check	PRCB CN9PRCB-11 (ON)	D-10
4	CL2 operation check	PRCB CN9PRCB-19 (ON)	D-11
5	CL3 operation check	PRCB CN9PRCB-17 (ON)	D-10 to 11
6	M1 operation check	PRCB CN34PRCB-10 (REM) PRCB CN34PRCB-13 (LOCK)	D-22
7	Change PRCB	—	—

13.3.5 Misfeed at tray 1 feed section

A. Detection timing

Type	Description
Detection of misfeed at tray 1 feed section	• The leading edge of the paper does not turn ON the sensor in front of tim. roller (PS23) even after the lapse of a given period of time after the tray 1 starts to feed paper.
Tray 1 feed section loop registration reversing jam	• For paper fed from the tray 1, loop forming has not been complete before a sheet enters the timing roller because the rise timing of load to perform registration is earlier than the rise timing of load to form a loop.
Tray 1 feed section TOD permit waiting jam	• For paper fed from the tray 1, TOD permit continues to be disabled for a predetermined period of time after the timing of TOD output.

B. Action

Relevant parts	
Transport motor (M1) Paper feed tray 1 paper feed clutch (CL4) Sensor in front of tim. roller (PS23)	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Initial check items	—	—
2	PS23 I/O check	PRCB CN1PRCB-3 (ON)	D-18
3	CL4 operation check	PRCB CN6PRCB-2 (ON)	D-1
4	M1 operation check	PRCB CN34PRCB-10 (REM) PRCB CN34PRCB-13 (LOCK)	D-22
5	Change PRCB	—	—

13.3.6 Misfeed at duplex pre-registration section

A. Detection timing

Type	Description
Detection of misfeed at duplex pre-registration section	• The leading edge of the paper does not turn ON the sensor in front of tim. roller (PS23) even after the lapse of a given period of time after a duplex paper feed sequence has been started.
Duplex pre-registration section loop registration reversing jam detection	• For the second-side feed of paper in the duplex mode, loop forming has not been complete before the second side of a sheet enters the timing roller because the rise timing of load to perform registration is earlier than the rise timing of load to form a loop.
Duplex pre-registration section TOD permit waiting jam	• For the second-side feed of paper in the duplex mode, TOD permit continues to be disabled for a predetermined period of time after the timing of TOD output.

B. Action

Relevant parts	
Transport motor (M1) Duplex transport motor (M7) Sensor in front of tim. roller (PS23)	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Initial check items	—	—
2	PS23 I/O check	PRCB CN1PRCB-3 (ON)	D-18
3	M1 operation check	PRCB CN34PRCB-10 (REM) PRCB CN34PRCB-13 (LOCK)	D-22
4	M7 operation check	PRCB CN4PRCB-1 to 4	D-3
5	Change PRCB	—	—

13.3.7 Misfeed at tray 3 vertical transport section

A. Detection timing

Type	Description
Detection of misfeed at vertical transport section	• The leading edge of the paper does not turn ON the sensor in front of tim. roller (PS23) even after the lapse of a given period of time after the paper has blocked the paper feed tray 3 vertical transport sensor (PS16). • The paper feed tray 3 vertical transport sensor (PS16) is not unblocked even after the lapse of a given period of time after the paper has blocked the PS16.
Vertical transport section loop registration reversing jam	• For paper fed from the tray 3, loop forming has not been complete before a sheet enters the timing roller because the rise timing of load to perform registration is earlier than the rise timing of load to form a loop.

B. Action

Relevant parts	
Transport motor (M1) Paper feed tray 3 vertical transport clutch (CL3) Paper feed tray 3 vertical transport sensor (PS16) Sensor in front of tim. roller (PS23)	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Initial check items	—	—
2	PS16 I/O check	PRCB CN9PRCB-11 (ON)	D-10
3	PS23 I/O check	PRCB CN1PRCB-3 (ON)	D-18
4	CL3 operation check	PRCB CN9PRCB-17 (ON)	D-10 to 11
5	M1 operation check	PRCB CN34PRCB-10 (REM) PRCB CN34PRCB-13 (LOCK)	D-22
6	Change PRCB	—	—

13.3.8 Misfeed at 2nd image transfer section

A. Detection timing

Type	Description
Detection of misfeed at 2nd image transfer section	• A sheet of paper does not turn OFF the sensor in front of tim. roller (PS23) after a predetermined period of time has elapsed since the sheet has turned ON the PS23. • A sheet of paper does not turned ON the paper exit sensor (PS25) after a predetermined period of time has elapsed since the sheet has turned ON the sensor in front of tim. roller (PS23).
Detection of paper left in 2nd image transfer section	• The sensor in front of tim. roller (PS23) is turned ON when the power switch is turned ON, a door or cover is opened and closed, or a misfeed or malfunction is reset.
2nd image transfer section loop registration reversing jam	• For paper fed from the tray, loop forming has not been complete before a sheet enters the timing roller because the rise timing of load to perform registration is earlier than the rise timing of load to form a loop.

B. Action

Relevant parts	
Transport motor (M1) Fusing motor (M5) Tim. roller clutch (CL6) Sensor in front of tim. roller (PS23) Paper exit sensor (PS25)	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Initial check items	—	—
2	PS23 I/O check	PRCB CN1PRCB-3 (ON)	D-18
3	PS25 I/O check	—	—
4	CL6 operation check	PRCB CN1PRCB-5 (ON)	D-17
5	M1 operation check	PRCB CN34PRCB-10 (REM) PRCB CN34PRCB-13 (LOCK)	D-22
6	M5 operation check	PRCB CN34PRCB-2 (REM) PRCB CN34PRCB-5 (LOCK)	D-21
7	Change PRCB	—	—

13.3.9 Misfeed at exit section

A. Detection timing

Type	Description
Detection of misfeed at exit section	• The paper exit sensor (PS25) is not turned OFF even after the lapse of a given period of time after the paper has turned ON the PS25. • The paper exit sensor (PS25) is not turned ON even after the lapse of a given period of time after the switchback sequence is started. • The duplex paper passage sensor/1 (PS33) is not turned ON even after the lapse of a given period of time after the switchback sequence is started.
Detection of paper left in exit section	• The paper exit sensor (PS25) is turned ON when the power switch is turned ON, a door or cover is opened and closed, or a misfeed or malfunction is reset.

B. Action

Relevant parts	
Transport motor (M1) Fusing motor (M5) Switchback motor (M6) Duplex transport motor (M7) Paper exit sensor (PS25) Duplex paper passage sensor/1 (PS33)	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Initial check items	—	—
2	PS25 I/O check	—	—
3	PS33 I/O check	PRCB CN4PRCB-7 (ON)	D-4
4	M1 operation check	PRCB CN34PRCB-10 (REM) PRCB CN34PRCB-13 (LOCK)	D-22
5	M5 operation check	PRCB CN34PRCB-2 (REM) PRCB CN34PRCB-5 (LOCK)	D-21
6	M6 operation check	PRCB CN40PRCB-10 to 13	D-18
7	M7 operation check	PRCB CN4PRCB-1 to 4	D-3
8	Change PRCB	—	—

13.3.10 Misfeed at duplex transport section

A. Detection timing

Type	Description
Detection of misfeed at duplex transport section	• A sheet of paper does not unblock the duplex paper passage sensor/2 (PS34) after a predetermined period of time has elapsed since the sheet blocks the duplex paper passage sensor/1 (PS33). • A sheet of paper does not unblock the duplex paper passage sensor/1 (PS33) after a predetermined period of time has elapsed since the sheet blocks PS33. • A sheet of paper does not block the duplex paper passage sensor/2 (PS34) after a predetermined period of time has elapsed since the sheet unblocks PS34.
Detection of paper left in duplex transport section	• The duplex paper passage sensor/1 (PS33) is blocked, or the duplex paper passage sensor/2 (PS34) is unblocked when the power switch is turned ON, a door or cover is opened and closed, or a misfeed or malfunction is reset.

B. Action

Relevant parts	
Switchback motor (M6) Duplex transport motor (M7) Duplex paper passage sensor/1 (PS33) Duplex paper passage sensor/2 (PS34)	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Initial check items	—	—
2	PS33 I/O check	PRCB CN4PRCB-7 (ON)	D-4
3	PS34 I/O check	PRCB CN4PRCB-10 (ON)	D-4
4	M6 operation check	PRCB CN40PRCB-10 to 13	D-18
5	M7 operation check	PRCB CN4PRCB-1 to 4	D-3
6	Change PRCB	—	—

13.3.11 Controller jam

A. Detection timing

Type	Description
Controller jam	• A control erratic operation as it relates to the duplex unit occurs.
	• A stop command (a command to effect a forced stop) is received.
	• A media error (wrong type or size of paper) occurs during a 2-sided print cycle.

B. Action

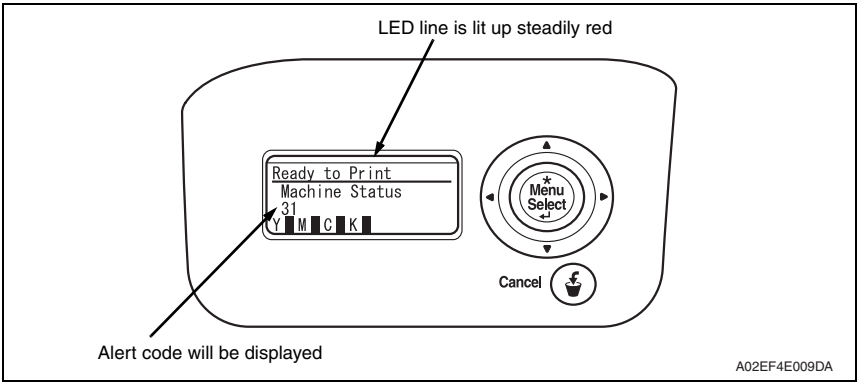
Relevant parts	
MFP board (MFPB)	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Initial check items	—	—
2	Check for the paper left in the machine.	—	—
3	Check to see if the size or type of the paper specified on the control panel or printer driver coincides with that of the paper actually loaded.	—	—
4	One possible cause is a control erratic operation. So, turn OFF and ON the power switch and run the print cycle again.	—	—
5	Upgrade the firmware.	—	—
6	Change PRCB	—	—
7	Change MFPB	—	—

14. Malfunction code

14.1 Alert code

- The machine's CPU performs a self-diagnostics function that, on detecting a malfunction, displays the corresponding warning code on the control panel.



14.1.1 Alert code list

- If a stabilization-related fault occurs, the numeral portion of the corresponding warning code appears.

Code	Item	Description
P-5	IDC sensor (front) failure	• When adjusting the IDC sensor, output voltage detected for all sample patterns are specified value or more. • When adjustment is complete, sensor's output voltage with selected light intensity is specified value or under. • During image stabilization (gamma correction control), detected output value for IDC sensor did not go below threshold (half the value of what is detected by IDC sensor on the belt surface) for three consecutive times (position of the pattern end is not detected). • During image stabilization (gamma correction control), sensor's output value of each color for hyper 0 gradation after the primary approximation is half the detection level on the belt surface or under
P-28	IDC sensor (rear) failure	
P-6	Cyan imaging unit failure	• All density readings taken from the density pattern produced on the transfer belt are 1.0 g/m^2 (IDC sensor photo receiver output) or less during max. density adjustment (Vg/Vdc adjustment).
P-7	Magenta imaging unit failure	
P-8	Yellow imaging unit failure	
P-9	Black imaging unit failure	
P-21	Color regist test pattern failure	• 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.

Code	Item	Description
P-22	Color regist adjust failure	• 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. • On the color shift test pattern, the maximum and minimum deviations detected in the main and sub scan directions go over the predetermined value.
P-27	Secondary transfer ATVC failure	• An abnormal average value is detected during an adjustment of the second image transfer ATVC value.
P-30	Color PC drive sensor malfunction	• 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 motor is turning stably and the lock signal is active (LOW-0).
P-31	Black PC drive sensor malfunction	• The output from the black PC drive main and sub sensors remains unchanged for a continuous period of 1,000 ms while the transport motor is turning stably and the lock signal is active (LOW-0).

14.2 Solution

14.2.1 P-5: IDC sensor (front) failure

14.2.2 P-28 IDC sensor (rear) failure

Relevant parts	
IDC registration sensor/MK (IDCS/MK) IDC registration sensor/YC (IDCS/YC)	Printer control board (PRCB) High voltage unit (HV) Transfer belt unit

Step	Action
1	Wipe clean the surface of the transfer belt with a soft cloth, if it is dirty.
2	Change the image transfer belt unit if the transfer belt is damaged.
3	Reinstall or reconnect IDCS/MK or IDCS/YC, sensor shutter or connector, if it is installed or connected improperly.
4	Clean IDCS/MK or IDCS/YC if it is dirty.
5	Check the HV connector for proper connection and correct as necessary.
6	Open/close the front door, run an image stabilization sequence, and output the adjustments list, and check the IDC value of the level history1. IDC1: IDCS/MK, IDC2: IDCS/CY If the value is 1.0 V or less, change IDCS/MK or IDCS/CY.
7	Change PRCB.

14.2.3 P-6: Cyan imaging unit failure

14.2.4 P-7: Magenta imaging unit failure

14.2.5 P-8: Yellow imaging unit failure

14.2.6 P-9: Black imaging unit failure

Relevant parts	
Imaging unit /C Imaging unit /M Imaging unit /Y Imaging unit /K	Transfer belt unit High voltage unit (HV) Printer control board (PRCB)

Step	Action
1	Select [ProcessAdjustment] → [Dmax Density] and, if the setting value is negative, readjust.
2	Check the drive transmission portion of the Imaging Unit and correct as necessary.
3	Clean the IDC registration sensor/MK (IDCS/MK) or IDC registration sensor/CY (IDCS/CY) window if dirty.
4	Clean the contact of the imaging unit connector if dirty.
5	Check the HV connector for proper connection and correct as necessary.
6	Change imaging unit.
7	Change the transfer belt unit.
8	Change PRCB.

14.2.7 P-21: Color regist test pattern failure

Relevant parts	
Transfer belt unit PH unit	Printer control board (PRCB)

Step	Action
1	Wipe clean the surface of the transfer belt with a soft cloth, if it is dirty.
2	Change the image transfer belt unit if the transfer belt is damaged.
3	Change the PH unit.
4	Change PRCB.

14.2.8 P-22: Color regist adjust failure

Relevant parts	
IDC registration sensor /MK (IDCS/MK) IDC registration sensor/CY (IDCS/CY)	Printer control board (PRCB)

Step	Action
1	Slide out the imaging unit and reinstall it in position.
2	Reinstall or reconnect IDCS/MK or IDCS/CY if it is installed or connected improperly.
3	Check the vertical transport guide for installed position and correct as necessary.
4	Change PRCB.

14.2.9 P-27: Secondary transfer ATVC failure

Relevant parts	
High voltage unit (HV) Printer control board (PRCB)	Image transfer entrance guide 2nd image transfer assy Transfer belt unit

Step	Action
1	Check roller opposed to the 2nd image transfer roller is grounded. Clean the joint or correct if necessary.
2	Check the image transfer entrance guide for proper installation and correct if necessary.
3	Check that the spring does not come off during the pressure operation of the 2nd transfer roller and correct if necessary.
4	Check the contact at the joint of the 2nd image transfer assy and HV. Clean the joint or correct if necessary.
5	Change the transfer belt unit.
6	Change HV.
7	Change PRCB.

14.2.10 P-30: Color PC drive sensor malfunction

Relevant electrical parts	
Color PC drive main sensor (PS27) Color PC drive sub sensor (PS28)	Main drive unit Printer control board (PRCB)

Step	Action
1	Check the PS27 or PS28 for installed position and proper connector connection.
2	Wipe the PS27 or PS28 clean of dirt if any.
3	If P-30 occurs again, change the main drive unit.
4	Change PRCB.

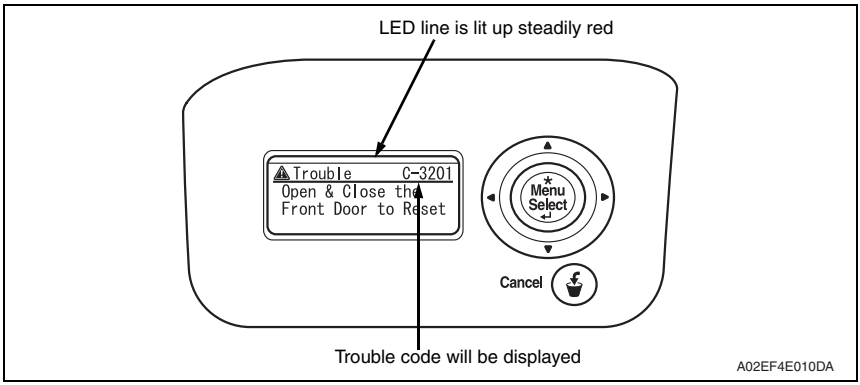
14.2.11 P-31: Black PC drive sensor malfunction

Relevant parts	
Black PC drive main sensor (PS29) Black PC drive sub sensor (PS30)	Main drive unit Printer control board (PRCB)

Step	Action
1	Check the PS29 or PS30 for installed position and proper connector connection.
2	Wipe the PS29 or PS30 clean of dirt if any.
3	If P-31 persists, change the main drive unit.
4	Change PRCB.

14.3 Trouble code

- The machine's CPU performs a self-diagnostics function that, on detecting a malfunction, displays the corresponding malfunction code on the control panel.



14.3.1 Trouble code list

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

Code	Item	Detection timing	Trouble isolation compliant unit	Rank
C0001	LCT connection failed	See P.32 of the PC-406 service manual.	—	C
C0202	Tray 2 feeder up/down abnormality	• The paper feed tray 2 upper limit sensor is not blocked even after the lapse of a given period of time after the lifting motion has been started.	Tray 2	B
C0204	Tray 3 feeder up/down abnormality	• The paper feed tray 3 upper limit sensor is not blocked even after the lapse of a given period of time after the lifting motion has been started.	Tray 3	B
C0206	Tray 4 feeder up/down abnormality	See P.26 of the PC-106/205 service manual.	Tray 4	B
C0208	Tray 5 feeder up/down abnormality		Tray 5	B
C0209	LCT elevator motor malfunction	See P.32 of the PC-406 service manual.	LCT	B
C0210	LCT ascent motion failure		LCT	B

	Code	Item	Detection timing	Trouble isolation compliant unit	Rank
	C0211	Tray 1 feeder up/down abnormality	• The paper feed tray 1 lift-up position sensor is not unblocked even when the 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 paper feed tray 1 lift-up position sensor is not blocked even when the 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.	Tray 1	B
	C0212	LCT ejection failure	See P.32 of the PC-406 service manual.	LCT	B
	C0213	LCT shift gate malfunction		LCT	B
	C0214	LCT shifting failure		LCT	B
	C0215	LCT shift motor malfunction		LCT	B
	C0301	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.	—	B
	C1004	FNS communication error	See P.73 of the FS-519/PK-515/OT-602 service manual.	—	C
1	C1180	Transport system drive malfunctions	See P.65 of the FS-609/PK-501 service manual.	—	B
1	C1181	Paddle motor malfunctions		—	B
	C1182	Unsupported option trouble			
1	C1183	Finishing option elevator drive malfunction	See P.73 of the FS-519/PK-515/OT-602 service manual. See P.65 of the FS-609/PK-501 service manual.	—	B
	C1190	Finishing option aligning bar moving mechanism malfunction 1	See P.73 of the FS-519/PK-515/OT-602 service manual.	—	B
	C1191	Finishing option aligning bar moving mechanism malfunction 2		—	B
1	C1192	Front aligning plate motor malfunctions	See P.65 of the FS-609/PK-501 service manual.	—	B
1	C1193	Rear aligning plate motor malfunctions		—	B
	C11A0	Paper holding drive failure	See P.73 of the FS-519/PK-515/OT-602 service manual.	—	B
	C11A1	Finishing option exit roller pressure/retraction failure		—	B
	C11A2	Saddle exit roller pressure/retraction failure	See P.38 of the SD-505 service manual.	—	B
	C11A3	Shutter drive failure	See P.73 of the FS-519/PK-515/OT-602 service manual.	—	B

	Code	Item	Detection timing	Trouble isolation compliant unit	Rank
⚠1	C11A4	Saddle exit motor failure Booklet exit motor malfunctions	See P.38 of the SD-505 service manual. See P.65 of the FS-609/PK-501 service manual.	—	B
	C11A5	Saddle in & out guide motor failure	See P.38 of the SD-505 service manual.	—	B
	C11A6	Saddle layable guide drive failure		—	B
	C11B0	Finishing option stapler unit CD drive failure	See P.73 of the FS-519/PK-515/OT-602 service manual.	—	B
⚠1	C11B1	Stapler unit slide motor malfunctions	See P.65 of the FS-609/PK-501 service manual.	—	B
	C11B2	Finishing option stapling mechanism malfunction 1	See P.73 of the FS-519/PK-515/OT-602 service manual.	—	B
⚠1	C11B4	Stapler/folding motor malfunctions	See P.65 of the FS-609/PK-501 service manual.	—	B
	C11B5	Side staple 1 drive failure	See P.38 of the SD-505 service manual.	—	B
	C11B6	Side staple 2 drive failure		—	B
	C11C0	Punch motor malfunction	See P.73 of the FS-519/PK-515/OT-602 service manual.	—	B
⚠1	C11C1	Punch control board malfunctions	See P.65 of the FS-609/PK-501 service manual.	—	C
⚠1	C11C2	Punch side registration motor malfunctions		—	C
⚠1	C11C3	Punch motor malfunctions		—	C
⚠1	C11C5	Punch sensor malfunctions		—	C
	C11D0	Crease motor drive failure	See P.38 of the SD-505 service manual.	—	B
	C11E0	Unsupported option trouble			
	C1301	Finishing option cooling fan motor failure	See P.73 of the FS-519/PK-515/OT-602 service manual.	—	B
⚠1	C1401	Backup RAM failure	See P.65 of the FS-609/PK-501 service manual.	—	C
	C2151	Secondary transfer roller pressure welding alienation	• During a retraction operation of the 2nd image transfer roller, the 2nd image transfer welding alienation sensor cannot detect the 2nd image transfer roller at its retracted position within a predetermined period of time after the 2nd image transfer retraction motor starts rotating. • During a pressure operation of the 2nd image transfer roller, the 2nd image transfer welding alienation sensor cannot detect the 2nd image transfer roller at its pressed position within a predetermined period of time after the 2nd image transfer retraction motor starts rotating.	—	B

Code	Item	Detection timing	Trouble isolation compliant unit	Rank
C2152	Transfer belt pressure welding alienation	• During a retraction operation of the transfer belt, the transfer belt retraction sensor cannot detect the transfer belt at its retracted position within a predetermined period of time after the transfer belt retraction clutch is turned ON. • During a pressure operation of the transfer belt, the transfer belt retraction sensor cannot detect the transfer belt at its pressed position within a predetermined period of time after the transfer belt clutch is turned ON.	—	B
C2164	PC charge malfunction	• When electrostatic charge output is ON, electrostatic charge leak detection system continues to detect leaks for a predetermined period of time.	—	B
C2253	Color PC motor's failure to turn	• The motor lock signal remains HIGH for a predetermined continuous period of time while the motor is turning.	—	B
C2254	Color PC motor's turning at abnormal timing	• The motor lock signal remains LOW for a predetermined continuous period of time while the motor remains stationary.	—	B
C225D	Color dev. unit engagement/disengagement failure	• The gears remain disengaged after the lapse of a predetermined period of time after the engagement operation is started by the color dev. unit engaged motor. • The gears remain engaged after the lapse of a predetermined period of time after the disengagement operation is started by the color dev. unit engaged motor.	—	B
C2351	K toner suction fan motor's failure to turn	• The motor lock signal remains HIGH for a predetermined continuous period of time while the motor is turning.	—	B
C2451	Release new transfer belt unit	• A new installation is not detected when a new transfer cleaner unit (image transfer belt unit) is installed.	—	B
C2551	Abnormally low toner density detected cyan 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.	—	B
C2552	Abnormally high toner density detected cyan TCR sensor	• TC ratio in the developing machine, which is determined by Toner replenishing amount control mechanism, is 11 % or more for a given number of times consecutively.	—	B
C2553	Abnormally low toner density detected magenta 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.	—	B

Code	Item	Detection timing	Trouble isolation compliant unit	Rank
C2554	Abnormally high toner density detected magenta TCR sensor	• TC ratio in the developing machine, which is determined by toner replenishing amount control mechanism, is 11 % or more for a given number of times consecutively. • When the connector of the TCR sensor is disconnected.	—	B
C2555	Abnormally low toner density detected yellow 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. • When the connector of the TCR sensor is disconnected.	—	B
C2556	Abnormally high toner density detected yellow TCR sensor	• TC ratio in the developing machine, which is determined by toner replenishing amount control mechanism, is 11 % or more for a given number of times consecutively. • When the connector of the TCR sensor is disconnected.	—	B
C2557	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.	—	B
C2558	Abnormally high toner density detected black TCR sensor	• TC ratio in the developing machine, which is determined by toner replenishing amount control mechanism, is 11 % or more for a given number of times consecutively. • When the connector of the TCR sensor is disconnected.	—	B
C2559	Cyan TCR sensor adjustment failure	• TCR sensor automatic adjustment does not function properly, failing to adjust to an appropriate value.	—	B
C255A	Magenta TCR sensor adjustment failure		—	B
C255B	Yellow TCR sensor adjustment failure		—	B
C255C	Black TCR sensor adjustment failure		—	B
C2650	Main backup media 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. • The machine detects that the service EEPROM board is not loaded in position.	—	C

Code	Item	Detection timing	Trouble isolation compliant unit	Rank
C2651	EEPROM access error (IU C)	• An error was found when reading or writing data. • The error was found when reading out the counter value.	—	C
C2652	EEPROM access error (IU M)		—	C
C2653	EEPROM access error (IU Y)		—	C
C2654	EEPROM access error (IU K)		—	C
C2A01	EEPROM access error (TC C)	• An error was found when reading or writing data. • The error was found when reading out the counter value.	—	C
C2A02	EEPROM access error (TC M)		—	C
C2A03	EEPROM access error (TC Y)		—	C
C2A04	EEPROM access error (TC K)		—	C
C3101	Fusing roller separation failure	• With the fusing roller being retracted, the pulse of the fusing roller retraction sensor does not change even after the specified period of time has passed after the fusing retraction motor started rotating. • With the fusing roller being pressed, the pulse of the roller retraction sensor does not change even after the specified period of time has passed after the fusing retraction motor started rotating. • During a pressure operation of the fusing roller, the fusing roller is not at the pressed position even after the roller retraction sensor counts the specified number of pulses after the fusing retraction motor starts rotating.	—	B
C3201	Fusing motor failure to turn	• The motor lock signal remains HIGH for a predetermined continuous period of time while the motor remains stationary.	—	B
C3202	Fusing motor turning at abnormal timing	• The motor lock signal remains LOW for a predetermined continuous period of time while the motor remains stationary.	—	B
C3301	Fusing cooling fan motor/ 1 failure to turn	• The fan motor lock signal remains HIGH for a predetermined continuous period of time while the motor remains stationary.	—	B
C3302	Fusing cooling fan motor/ 2,3 failure to turn	• The fan motor lock signal remains HIGH for a predetermined continuous period of time while the motor remains stationary.	—	B

Code	Item	Detection timing	Trouble isolation compliant unit	Rank
C3421	Fusing heaters trouble (heating side)	• The temperature detected by the heating roller thermistor/C does not reach a predetermined level after the lapse of a predetermined period of time after the heating roller fusing heater lamp lights up. • The difference between the maximum and minimum temperatures detected by the heating roller thermistor/C within a predetermined period of time after the start of a warm-up cycle is below or above a predetermined value. • The temperature detected after a pressure level correction remains under a predetermined level even after the lapse of a predetermined period of time after the start of the temperature detection. • During a warm-up, a zero cross signal cannot be detected after the lapse of a predetermined period of time after the fusing heater is turned ON or OFF.	—	A
C3423	Fusing heaters trouble (pressurizing side)	• After warm-up operation starts, the fusing pressure roller thermistor does not detect a temperature as high as a predetermined one though a predetermined period of time has elapsed. • The temperature of the pressure roller remains lower than a predetermined level even after the lapse of a predetermined period of time after a temperature correction.	—	A
C3461	Release new fusing unit	• A new installation is not detected when a new fusing Unit is installed.	—	B
C3721	Fusing abnormally high temperature detection (heating side)	• The heating roller thermistor continues to detect a temperature higher than a predetermined one for a predetermined period of time. • Hard protection signal L is detected continuously over a predetermined period of time.	—	A
C3723	Fusing abnormally high temperature detection (pressurizing side)	• The temperature of the pressure roller continues to be higher than a predetermined level for a predetermined period of time after a temperature correction.	—	A
C3821	Fusing abnormally low temperature detection (heating side)	• The heating roller thermistor continues to detect a temperature lower than a predetermined one for a predetermined period of time. • In the states other than a warm-up operation, a zero cross signal cannot be detected after the lapse of a predetermined period of time after the fusing heater is turned ON or OFF. • The power supply frequency cannot be detected.	—	A

Code	Item	Detection timing	Trouble isolation compliant unit	Rank
C3823	Fusing abnormally low temperature detection (pressurizing side)	• The temperature of the pressure roller continues to be lower than a predetermined level for a predetermined period of time after a temperature correction.	—	A
C4151	Polygon motor rotation trouble (C)	• 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 HIGH for a given period time consecutively during the polygon motor is rotating.	—	B
C4152	Polygon motor rotation trouble (M)		—	B
C4153	Polygon motor rotation trouble (Y)		—	B
C4154	Polygon motor rotation trouble (K)		—	B
C4551	Laser malfunction (C)	• 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 image stabilization adjustment.	—	B
C4552	Laser malfunction (M)		—	B
C4553	Laser malfunction (Y)		—	B
C4554	Laser malfunction (K)		—	B
C5102	Transport motor's failure to turn	• The motor lock signal remains HIGH for a predetermined continuous period of time while the motor remains stationary.	—	B
C5103	Transport motor's turning at abnormal timing	• The motor lock signal remains LOW for a predetermined continuous period of time while the motor remains stationary.	—	B
C5351	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.	—	B
C5353	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.	—	B
C5354	Exhaust fan motor's failure to turn	• The fan lock signal remains HIGH for a predetermined continuous period of time while the motor remains stationary.	—	B
C5357	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.	—	B
C5371	MFP board cooling fan motor's failure to turn	• The fan lock signal remains HIGH for a predetermined continuous period of time while the motor remains stationary.	—	B
CA051	Standard controller configuration failure	• The controller of the printer control board (PRCB) is faulty.	—	C
CA052	Controller hardware error	• A controller hardware error is detected in the network I/F.	—	C
CA053	Controller start failure	• A controller start failure is detected in the controller interface.	—	C
CC151	ROM contents error upon startup (MSC)	• A fault is detected in a sequence of ROM contents check of the MSC (PRCB) during starting	—	C

Code	Item	Detection timing	Trouble isolation compliant unit	Rank
CC153	ROM contents error upon startup (PRT)	• A fault is detected in a sequence of ROM contents check of the mechanical control board (MFPB) during starting.	—	C
CC155	Finisher ROM error	See P.73 of the FS-519/PK-515/OT-602 service manual.	—	C
CC163	ROM contents error (PRT)	• The wrong model of firmware is detected in the engine during the initial connection to the engine is being checked.	—	C
CC164	ROM contents error (MSC)	• The wrong model of firmware is detected in the MFP board when the power switch is turned ON.	—	C
CD002	JOB RAM save error	• The error in save of JOB data to the memory/ hard disk and its read error are detected.	—	C
CD004	Hard disk access error	• Unable to communicate between the hard disk and printer control board (PRCB).	—	C
CD005	Hard disk error 1	• Hard disk is faulty.	—	C
CD006	Hard disk error 2		—	C
CD007	Hard disk error 3		—	C
CD008	Hard disk error 4		—	C
CD009	Hard disk error 5		—	C
CD00A	Hard disk error 6		—	C
CD00B	Hard disk error 7		—	C
CD00C	Hard disk error 8		—	C
CD00D	Hard disk error 9		—	C
CD00E	Hard disk error A		—	C
CD00F	Hard disk data transfer error	• Data transfer from the hard disk is faulty.	—	C
CD010	Hard disk unformat	• Unformatted hard disk is connected.	—	C
CD011	Hard disk out of specifications mounted	• A hard disk that falls outside the specifications is connected.	—	C
CD020	Hard disk verify error	• The data abnormality is detected by the HDD verify check.	—	C
CD030	Hard disk management information reading error	• The machine fails to read administrative information data saved in the hard disk.	—	C
CD201	File memory mounting error	• The file memory is not mounted. • The file has any abnormality.	—	C
CD202	Memory capacity discrepancy	• File memory capacity on the Printer control board (PRCB) is not enough. • File memory capacity necessary for duplex printing is not enough during Duplex unit mounting.	—	C
CD203	Memory capacity discrepancy 2	• File memory capacity on the Printer control board (PRCB) is not enough.	—	C
CD211	PCI-SDRAM DMA operation failure	• Hardware related to the transfer of memory image of the Printer control board (PRCB) fails to respond.	—	C

Code	Item	Detection timing	Trouble isolation compliant unit	Rank
CD212	Compression/extraction timeout detection	• Hardware related to the BTC compression function of the Printer control board (PRCB) fails to respond.	—	C
CD241	Encryption board setting error	• Initialization error of the encrypted ASIC is detected during the machine is starting.	—	C
CD242	Encryption board mounting error	• The faulty of the installation of encrypted ASIC is detected during the machine is starting.	—	C
CD261	USB host board failure	• When a failure is detected in USB host board included in the local interface kit. • Non-standard USB device is connected.	—	C
CD3##	NVRAM data error	• Abnormality is detected by the abnormal check of each NVRAM data.	—	—
CD370	NVRAM data multiple errors	• Multiple errors (Over 5) are detected by the abnormal check of each NVRAM data.	—	—
CD401	NACK command incorrect	• When abnormality is found in the communication of controller.	—	C
CD402	ACK command incorrect		—	C
CD403	Checksum error		—	C
CD404	Receiving packet incorrect		—	C
CD405	Receiving packet analysis error		—	C
CD406	ACK receiving timeout		—	C
CD407	Retransmission timeout		—	C
CDC##	Trouble related to security	• Contact the responsible people of KMBT before taking some countermeasures.	—	—
CE001	Abnormal message queue	• Printer control board (PRCB) is faulty.	—	C
CE002	Message and method parameter failure		—	C
CE003	Task error		—	C
CE004	Event error		—	C
CE005	Memory access error		—	C
CE006	Header access error		—	C
CE007	DIMM initialize error		—	C
CEEE1	MSC undefined malfunction occurring	• An undefined malfunction occurs in the MSC of the printer control board (PRCB).	—	C
CEEE2	Scanner section undefined malfunction	• An undefined malfunction occurs in the scanner section.	—	C
CEEE3	Engine section undefined malfunction	• An undefined malfunction occurs in the engine section (MFPB, etc.).	—	C

- The machine displays an abort code (CF###) on the control panel as it becomes unable to process tasks properly through its software control.
- When the system program is aborted, check the electrical component, unit, option, and connection relating to the specific type of the abort condition.

Code	Item		Relevant electrical components, units, and options	Rank
CF001	CT_singleList table abnormal	An exceptional instance occurred due to the unexpected Parameter in the System F/W.	• MFP board (MFPB)	C
CF002	CT_doubleList table abnormal			C
CF003	CT_doubleList table abnormal			C
CF004	CT_queue full abnormal			C
CF011	Array link abnormal			C
CF012	FAT link abnormal			C
CF013	File size abnormal			C
CF021	setDelayMessage Table OverFlow			C
CF022	procSetBootParamTcpipAddress() injustice			C
CF023	MsgQue OverFlow			C
CF031	getJobPageToIPE() page number injustice			C
CF032	getJobHDDPageToIPE() page number injustice			C
CF033	setDivTbl() limitation over			C
CF034	HDDQUEUE Over Flow			C
CF041	getAPPPtrFromAPPID() abnormal			C
CF042	getAPPIndexFromAPPID() abnormal			C
CF051	CC_InputPageEntry:operator[] page injustice			C
CF061	IdeCommand_Set() status abnormal			C
CF062	IdeCommand_Set() parameter abnormal			C
CF091	PCI ASIC1 ERROR	ASIC1 error		C
CF092	PCI ASIC2 ERROR	ASIC2 error		C
CF093	PCI ASIC4 ERROR	ASIC3 error		C
CF101	SCAN TIME OUT	Image transfer malfunctions		C
CF111	Compress TIME OUT	Compression malfunctions		C
CF112	Compress table OverFlow			C
CF113	Compress table check			C
CF121	Expand TIME OUT			C
CF122	Expand table OverFlow			C
CF123	Expand expandLine abnormal			C

Code	Item		Relevant electrical components, units, and options	Rank
CF131	Print TIME OUT	Image transfer malfunctions	• MFP board (MFPB)	C
CF201	startIRReadAnd Compress()Sequence	An exceptional instance occurred due to the unexpected parameter in the system F/W.		C
CF202	startWorkSave()Sequence abnormal			C
CF203	convAPItoIJCParameter()page abnormal			C
CF204	calcCompresserUse()CmpExpID Abnormal			C
CF211	setParameterBandColorPlane() Table OverFlow			C
CF212	convAPItoIJCParameter()page abnormal			C
CF213	calcExpandUse() CmpExpID abnormal			C
CF221	startPrintOutput outputsize zero			C
CF222	Next request comes during processing of startPrintOutput ()			C
CF223	Next request comes during processing of startWorkLoadOutput ()			C
CF614	“Output sequence” queue			C
CF624	Panel LCD date queue			C
CF704	Common data “Delete-waiting HDD accumulated job ID” queue			C
CF724	Engine/Command queue		• MFP board (MFPB)/ Engine	C
CF734	Panel/Command queue		• MFP board (MFPB)/ Control Panel	C
CF744	File memory transfer start-waiting command queue		• MFP board (MFPB)	C
CF754	File memory compression requesting command queue			C
CF764	Panel instruction delete job queue			C
CF774	Warning delete job queue			C
CF784	Application instruction delete job queue			C
CF794	Output page information for duplex back side queue			C
CF7A4	Paper feed completion output pate information queue			C
CF7B4	Exposure compaction output page information queue			C

Code	Item		Relevant electrical components, units, and options	Rank
CF7C4	Pre-discharge completion output page information queue	An exceptional instance occurred due to the unexpected parameter in the system F/W.	• MFP board (MFPB)	C
CF7D4	Touch panel coordinate data queue			C
CF7E4	Direct key data queue			C
CF802	SIO sending port...ENG		• MFP board (MFPB)/ Engine	C
CF810	SIO sending port		• MFP board (MFPB)	C
CF8ED	SIO sending port...EPNet			C
CF902	SIO receiving port...ENG		• MFP board (MFPB)/ Engine	C
CF910	SIO receiving port		• MFP board (MFPB)	C
CF9ED	SIO receiving port...EPNet			C
CFA01	getOneImgTransInfoFromTh() No applied thread	An exceptional instance occurred due to the unexpected parameter in the system F/W.		C
CFA02	chkEnableAllocExec() default error			C
CFA03	setTransBandAndRepeatNum() error			C
CFA04	Application ID error			C
CFA05	Thread selection image processing mode error			C
CFA06	getOneImgIndexNumFromTh() No applied thread			C
CFA07	setBufBandFromOut() No applied thread			C
CFA08	chkStartOutput() No applied thread			C
CFA09	rptReleaseMemResultACS() No applied thread			C
CFA10	rptEndBandTrans() No applied thread			C
CFA11	cancelTransExec() No applied thread			C
CFA12	CC_ImgTransInfo:allocTransIndex			C
CFA13	CC_MultiThreadProfile:rptBuf2MemClrEnd			C
CFA14	Thread software error		• Whole electrical components, units, and options	C
CFB00	ASIC117 first sheet DMA00		• MFP board (MFPB)	C
CFB01	ASIC117 first sheet DMA01			C
CFB02	ASIC117 first sheet DMA02			C
CFB03	ASIC117 first sheet DMA03			C
CFB04	ASIC117 first sheet DMA04			C

Code	Item	Relevant electrical components, units, and options	Rank
CFB05	ASIC117 first sheet DMA05	• MFP board (MFPB)	C
CFB06	ASIC117 first sheet DMA06		C
CFB07	ASIC117 first sheet DMA07		C
CFB08	ASIC117 first sheet DMA08		C
CFB09	ASIC117 first sheet DMA09		C
CFB0A	ASIC117 first sheet DMA10		C
CFB10	ASIC117 first sheet DMA16		C
CFB11	ASIC117 first sheet DMA17		C
CFB12	ASIC117 first sheet DMA18		C
CFB13	ASIC117 first sheet DMA19		C
CFB14	ASIC117 first sheet DMA20		C
CFB15	ASIC117 first sheet DMA21		C
CFB16	ASIC117 first sheet DMA22		C
CFB17	ASIC117 first sheet DMA23		C
CFB18	ASIC117 first sheet DMA24		C
CFB19	ASIC117 first sheet DMA25		C
CFB1A	ASIC117 first sheet DMA26		C
CFB1B	ASIC117 first sheet DMA27		C
CFB1C	ASIC117 first sheet DMA28		C
CFB1D	ASIC117 first sheet DMA29		C
CFB1E	ASIC117 first sheet DMA30		C
CFB20	Unsupported option trouble		
CFB21			
CFB22			
CFB23			
CFB24			
CFB25			
CFB26			
CFB27			
CFB28			
CFB29			
CFB2A			
CFB30			
CFB31			
CFB32			
CFB33			
CFB34			
CFB35			
CFB36			
CFB37			
CFB38			

Code	Item	Relevant electrical components, units, and options	Rank
CFB39	Unsupported option trouble		
CFB3A			
CFB3B			
CFB3C			
CFB3D			
CFB3E			
CFB40			
CFB41			
CFB42			
CFB60	ASIC117 first sheet interruption	• MFP board (MFPB)	C
CFB61	Unsupported option trouble		
CFB62			
CFB70	ASIC117 first sheet common register setting	• MFP board (MFPB)	C
CFB71	Unsupported option trouble		
CFB72			
CFB80	ASIC117 first sheet PCIBridgeDMA	• MFP board (MFPB)	C
CFB81	Unsupported option trouble		
CFB82			
CFB90	ASIC117 first sheet BTC compander/expander	• MFP board (MFPB)	C
CFB91	Unsupported option trouble		
CFB92			
CFC00	ASIC117 first sheet DMA00 error interruption	• MFP board (MFPB)	C
CFC01	ASIC117 first sheet DMA01 error interruption		C
CFC02	ASIC117 first sheet DMA02 error interruption		C
CFC03	ASIC117 first sheet DMA03 error interruption		C
CFC04	ASIC117 first sheet DMA04 error interruption		C
CFC05	ASIC117 first sheet DMA05 error interruption		C
CFC06	ASIC117 first sheet DMA06 error interruption		C
CFC07	ASIC117 first sheet DMA07 error interruption		C
CFC08	ASIC117 first sheet DMA08 error interruption		C
CFC09	ASIC117 first sheet DMA09 error interruption		C
CFC0A	ASIC117 first sheet DMA10 error interruption		C
CFC10	ASIC117 first sheet DMA16 error interruption		C
CFC11	ASIC117 first sheet DMA17 error interruption		C
CFC12	ASIC117 first sheet DMA18 error interruption		C
CFC13	ASIC117 first sheet DMA19 error interruption		C
CFC14	ASIC117 first sheet DMA20 error interruption		C
CFC15	ASIC117 first sheet DMA21 error interruption		C
CFC16	ASIC117 first sheet DMA22 error interruption		C
CFC17	ASIC117 first sheet DMA23 error interruption		C
CFC18	ASIC117 first sheet DMA24 error interruption		C

Code	Item	Relevant electrical components, units, and options	Rank
CFC19	ASIC117 first sheet DMA25 error interruption	• MFP board (MFPB)	C
CFC1A	ASIC117 first sheet DMA26 error interruption		C
CFC1B	ASIC117 first sheet DMA27 error interruption		C
CFC1C	ASIC117 first sheet DMA28 error interruption		C
CFC1D	ASIC117 first sheet DMA29 error interruption		C
CFC1E	ASIC117 first sheet DMA30 error interruption		C
CFC20	ASIC117 first sheet SDC sleep illegal access error		C
CFC21	ASIC117 first sheet watchdog timer error interruption		C
CFC22	ASIC117 first sheet underrun at image output interface 1		C
CFC23	ASIC117 first sheet overflow at image input interface		C
CFC24	ASIC117 first sheet underrun at image output interface 1		C
CFC25	ASIC117 first sheet PCI master detects target abort		C
CFC26	ASIC117 first sheet master abort by PCI master		C
CFC27	ASIC117 first sheet PCI master detects illegal setting		C
CFC28	ASIC117 first sheet PCI master detects retry error		C
CFC29	ASIC117 first sheet PCI master detects split completion byte count malfunction		C
CFC2A	ASIC117 first sheet PCI master detects split completion error message		C
CFC2B	ASIC117 first sheet unknown marker detected at JBIG core		C
CFC2C	ASIC117 SC count overflow detected at JBIG core		C
CFC2D	ASIC117 first sheet master read data parity error		C
CFC2E	ASIC117 first sheet master write data parity error		C
CFC2F	ASIC117 first sheet system error		C
CFC30	ASIC117 first sheet sleep read data parity error		C
CFC31	ASIC117 first sheet sleep write data parity error		C
CFC32	ASIC117 first sheet address parity error		C
CFC50	Unsupported option trouble		
CFC51			
CFC52			
CFC53			
CFC54			
CFC55			
CFC56			
CFC57			
CFC58			
CFC59			
CFC5A			
CFC60			

Code	Item	Relevant electrical components, units, and options	Rank
CFC61	Unsupported option trouble		
CFC62			
CFC63			
CFC64			
CFC65			
CFC66			
CFC67			
CFC68			
CFC69			
CFC6A			
CFC6B			
CFC6C			
CFC6D			
CFC6E			
CFC70			
CFC71			
CFC72			
CFC73			
CFC74	ASIC117 first sheet underrun at LCD output interface	• MFP board (MFPB)	C
CFC75	Unsupported option trouble		
CFC76			
CFC77			
CFC78			
CFC79	ASIC117 first sheet PCI master detects split completion byte count malfunctio	• MFP board (MFPB)	C
CFC7A	ASIC117 first sheet PCI master detects split completion error message		C
CFC7B	Unsupported option trouble		
CFC7C			
CFC7D			
CFC7E			
CFC7F			
CFC80			
CFC81			
CFC82			
CFCA0			
CFCA1			
CFCA2			
CFCA3			
CFCA4			
CFCA5			

Code	Item	Relevant electrical components, units, and options	Rank
CFCA6	Unsupported option trouble		
CFCA7			
CFCA8			
CFCA9			
CFCAA			
CFCAB			
CFCAC			
CFCAD			
CFCAE			
CFCAF			
CFCB0			
CFCB1			
CFCB2			
CFCB3			
CFCB4			
CFCB5			
CFCB6			
CFCB7			
CFCB8			
CFCB9			
CFCBA			
CFCBB			
CFCD0	CPS2300Great watchdog timer error	• MFP board (MFPB)	C
CFCD1	CPS2300Great local bus error		C
CFCD2	CPS2300Great sleep read data parity error		C
CFCD3	CPS2300Great sleep write data parity error		C
CFCD4	CPS2300Great address parity error		C
CFCF0	PIC3400Great watchdog timer error		C
CFCF1	PIC3400Great sleep read data parity error		C
CFCF2	PIC3400Great sleep write data parity error		C
CFCF3	PIC3400Great address parity error		C
CFD00	ASIC117 first sheet DMA00 time out		C
CFD01	ASIC117 first sheet DMA01 time out		C
CFD02	ASIC117 first sheet DMA02 time out		C
CFD03	ASIC117 first sheet DMA03 time out		C
CFD04	ASIC117 first sheet DMA04 time out		C
CFD05	ASIC117 first sheet DMA05 time out		C
CFD06	ASIC117 first sheet DMA06 time out		C
CFD07	ASIC117 first sheet DMA07 time out		C
CFD08	ASIC117 first sheet DMA08 time out		C
CFD09	ASIC117 first sheet DMA09 time out		C

Code	Item	Relevant electrical components, units, and options	Rank
CFD0A	ASIC117 first sheet DMA10 time out	• MFP board (MFPB)	C
CFD10	ASIC117 first sheet DMA16 time out		C
CFD11	ASIC117 first sheet DMA17 time out		C
CFD12	ASIC117 first sheet DMA18 time out		C
CFD13	ASIC117 first sheet DMA19 time out		C
CFD14	ASIC117 first sheet DMA20 time out		C
CFD15	ASIC117 first sheet DMA21 time out		C
CFD16	ASIC117 first sheet DMA22 time out		C
CFD17	ASIC117 first sheet DMA23 time out		C
CFD18	ASIC117 first sheet DMA24 time out		C
CFD19	ASIC117 first sheet DMA25 time out		C
CFD1A	ASIC117 first sheet DMA26 time out		C
CFD1B	ASIC117 first sheet DMA27 time out		C
CFD1C	ASIC117 first sheet DMA28 time out		C
CFD1D	ASIC117 first sheet DMA29 time out		C
CFD1E	ASIC117 first sheet DMA30 time out		C
CFD50	Unsupported option trouble		
CFD51			
CFD52			
CFD53			
CFD54			
CFD55			
CFD56			
CFD57			
CFD58			
CFD59			
CFD5A			
CFD60			
CFD61			
CFD62			
CFD63			
CFD64			
CFD65			
CFD66			
CFD67			
CFD68			
CFD69			
CFD6A			
CFD6B			
CFD6C			
CFD6D			

Code	Item	Relevant electrical components, units, and options	Rank
CFD6E	Unsupported option trouble		
CFDA0			
CFDA1			
CFDA2			
CFE00	ASIC117 first sheet DMA00 time out	• MFP board (MFPB)	C
CFE01	ASIC117 first sheet DMA01 time out		C
CFE02	ASIC117 first sheet DMA02 time out		C
CFE03	ASIC117 first sheet DMA03 time out		C
CFE04	ASIC117 first sheet DMA04 time out		C
CFE05	ASIC117 first sheet DMA05 time out		C
CFE06	ASIC117 first sheet DMA06 time out		C
CFE07	ASIC117 first sheet DMA07 time out		C
CFE08	ASIC117 first sheet DMA08 time out		C
CFE09	ASIC117 first sheet DMA09 time out		C
CFE0A	ASIC117 first sheet DMA10 time out		C
CFE10	ASIC117 first sheet DMA16 time out		C
CFE11	ASIC117 first sheet DMA17 time out		C
CFE12	ASIC117 first sheet DMA18 time out		C
CFE13	ASIC117 first sheet DMA19 time out		C
CFE14	ASIC117 first sheet DMA20 time out		C
CFE15	ASIC117 first sheet DMA21 time out		C
CFE16	ASIC117 first sheet DMA22 time out		C
CFE17	ASIC117 first sheet DMA23 time out		C
CFE18	ASIC117 first sheet DMA24 time out		C
CFE19	ASIC117 first sheet DMA25 time out		C
CFE1A	ASIC117 first sheet DMA26 time out		C
CFE1B	ASIC117 first sheet DMA27 time out		C
CFE1C	ASIC117 first sheet DMA28 time out		C
CFE1D	ASIC117 first sheet DMA29 time out		C
CFE1E	ASIC117 first sheet DMA30 time out		C
CFE50	Unsupported option trouble		
CFE51			
CFE52			
CFE53			
CFE54			
CFE55			
CFE56			
CFE57			
CFE58			
CFE59			
CFE5A			

Code	Item	Relevant electrical components, units, and options	Rank
CFE60	Unsupported option trouble		
CFE61			
CFE62			
CFE63			
CFE64			
CFE65			
CFE66			
CFE67			
CFE68			
CFE69			
CFE6A			
CFE6B			
CFE6C			
CFE6D			
CFE6E			
CFEA0			
CFEA1			
CFEA2			
CFF00	ASIC117 first sheet DMA00 time out	• MFP board (MFPB)	C
CFF01	ASIC117 first sheet DMA01 time out		C
CFF02	ASIC117 first sheet DMA02 time out		C
CFF03	ASIC117 first sheet DMA03 time out		C
CFF04	ASIC117 first sheet DMA04 time out		C
CFF05	ASIC117 first sheet DMA05 time out		C
CFF06	ASIC117 first sheet DMA06 time out		C
CFF07	ASIC117 first sheet DMA07 time out		C
CFF08	ASIC117 first sheet DMA08 time out		C
CFF09	ASIC117 first sheet DMA09 time out		C
CFF0A	ASIC117 first sheet DMA10 time out		C
CFF10	ASIC117 first sheet DMA16 time out		C
CFF11	ASIC117 first sheet DMA17 time out		C
CFF12	ASIC117 first sheet DMA18 time out		C
CFF13	ASIC117 first sheet DMA19 time out		C
CFF14	ASIC117 first sheet DMA20 time out		C
CFF15	ASIC117 first sheet DMA21 time out		C
CFF16	ASIC117 first sheet DMA22 time out		C
CFF17	ASIC117 first sheet DMA23 time out		C
CFF18	ASIC117 first sheet DMA24 time out		C
CFF19	ASIC117 first sheet DMA25 time out		C
CFF1A	ASIC117 first sheet DMA26 time out		C
CFF1B	ASIC117 first sheet DMA27 time out		C

Code	Item	Relevant electrical components, units, and options	Rank
CFF1C	ASIC117 first sheet DMA28 time out	• MFP board (MFPB)	C
CFF1D	ASIC117 first sheet DMA29 time out		C
CFF1E	ASIC117 first sheet DMA30 time out		C
CFF50	Unsupported option trouble		
CFF51			
CFF52			
CFF53			
CFF54			
CFF55			
CFF56			
CFF57			
CFF58			
CFF59			
CFF5A			
CFF60			
CFF61			
CFF62			
CFF63			
CFF64			
CFF65			
CFF66			
CFF67			
CFF68			
CFF69			
CFF6A			
CFF6B			
CFF6C			
CFF6D			
CFF6E			
CFFA0			
CFFA1			
CFFA2			

14.4 How to reset

- Different malfunction resetting procedures apply depending on the rank of the trouble code.

* List of malfunction resetting procedures

Trouble code rank	Resetting procedures
Rank A	• Trouble reset For details of Trouble Reset, see Adjustment/ Setting. See P.267
Rank B	• Opening/closing the front door
Rank C	• Turning power switch OFF/ON

14.5 Solution

14.5.1 C0202: Tray 2 feeder up/down abnormality

Relevant parts	
Paper feed tray 2 lift-up motor (M8) Paper feed tray 2 upper limit sensor (PS8)	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the M8 connector for proper connection and correct as necessary.	—	—
2	Check the connector of M8 for proper drive coupling and correct as necessary.	—	—
3	PS8 I/O check	PRCB CN12PRCB-3 (ON)	D-8
4	M8 operation check	PRCB CN11PRCB-4 (REM)	D-13
5	Change M8	—	—
6	Change PRCB	—	—

14.5.2 C0204: Tray 3 feeder up/down abnormality

Relevant parts	
Paper feed tray 3 lift-up motor (M9) Paper feed tray 3 upper limit sensor (PS15)	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the M9 connector for proper connection and correct as necessary.	—	—
2	Check the connector of M9 for proper drive coupling and correct as necessary.	—	—
3	PS15 I/O check	PRCB CN9PRCB-3 (ON)	D-9
4	M9 operation check	PRCB CN7PRCB-9 (REM)	D-11
5	Change M9	—	—
6	Change PRCB	—	—

14.5.3 C0211: Tray 1 feeder up/down abnormality

Relevant parts	
Transport motor (M1) Paper feed tray 1 pick-up solenoid (SL1) Paper feed tray 1 lift-up position sensor (PS17)	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the M1 connector for proper connection and correct as necessary.	—	—
2	Check the connector of M1 for proper drive coupling and correct as necessary.	—	—
3	PS17 I/O check	PRCB CN6PRCB-7 (ON)	D-2
4	SL1 operation check	PRCB CN6PRCB-4 (ON)	D-1
5	M1 operation check	PRCB CN34PRCB-10 (REM) PRCB CN34PRCB-13 (LOCK)	D-22
6	Change SL1	—	—
7	Change M1	—	—
8	Change PRCB	—	—

14.5.4 C0301: Suction fan motor's failure to turn

Relevant parts	
Suction fan motor (FM8)	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the FM8 connector for proper connection and correct as necessary.	—	—
2	Check the fan for possible overload and correct as necessary.	—	—
3	FM8 operation check	PRCB CN3PRCB-2 (ON) PRCB CN3PRCB-3 (LOCK)	D-4 to 5
4	Change the right door assy	—	—
5	Change PRCB	—	—

14.5.5 C2151: Secondary transfer roller pressure welding alienation

Relevant parts	
2nd image transfer retraction motor (M11) 2nd image transfer welding alienation sensor (PS36)	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the M11 connector for proper connection and correct as necessary.	—	—
2	Check the connector of M11 for proper drive coupling and correct as necessary.	—	—
3	PS36 I/O check	PRCB CN3PRCB-9 (ON)	D-5
4	Change the right door assy	—	—
5	Change PRCB	—	—

14.5.6 C2152: Transfer belt pressure welding alienation

Relevant parts	
Fusing motor (M5) Transfer belt retraction clutch (CL7) Transfer belt retraction sensor (PS31)	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the M5 connector for proper connection and correct as necessary.	—	—
2	PS31 I/O check	PRCB CN36PRCB-15 (ON)	D-26 to 27
3	CL7 operation check	PRCB CN39PRCB-10 (ON)	D-23
4	M5 operation check	PRCB CN34PRCB-2 (REM) PRCB CN34PRCB-5 (LOCK)	D-21
5	Change CL7	—	—
6	Change M5	—	—
7	Change PRCB	—	—

14.5.7 C2164: PC charge malfunction

Relevant parts	
Imaging unit	High voltage unit (HV) Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the imaging unit for proper connection and correct as necessary.	—	—
2	Check the HV connector for proper connection and correct as necessary.	—	—
3	Check the PRCB connector for proper connection and correct as necessary.	—	—
4	Change IU	—	—
5	Change HV	—	—
6	Change PRCB	—	—

14.5.8 C2253: Color PC motor's failure to turn

14.5.9 C2254: Color PC motor's turning at abnormal timing

Relevant parts	
Color PC motor (M2)	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the M2 connector for proper connection and correct as necessary.	—	—
2	Check the M2 connector for proper drive coupling and correct as necessary.	—	—
3	Check the PRCB connector for proper connection and correct as necessary.	—	—
4	M2 operation check	PRCB CN35PRCB-4 (REM) PRCB CN35PRCB-7 (LOCK)	D-22
5	Change M2	—	—
6	Change PRCB	—	—

14.5.10 C225D: Color dev. unit engagement/disengagement failure

Relevant parts	
Color dev. unit engaged motor (M10) Color dev. unit engaged position sensor (PS26)	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the M10 connector for proper connection and correct as necessary.	—	—
2	Check the M10 connector for proper drive coupling and correct as necessary.	—	—
3	Check the PRCB connector for proper connection and correct as necessary.	—	—
4	PS26 I/O check	PRCB CN39PRCB-18 (ON)	D-24
5	M10 operation check	PRCB CN39PRCB-12 (REM)	D-24
6	Change M10	—	—
7	Change PRCB	—	—

14.5.11 C2351: K toner suction fan motor's failure to turn

Relevant parts	
Toner suction fan motor (FM3)	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the FM3 connector for proper connection and correct as necessary.	—	—
2	Check the fan for possible overload and correct as necessary.	—	—
3	FM3 operation check	PRCB CN30PRCB-7 (ON) PRCB CN30PRCB-9 (LOCK)	K-7 to 8
4	Change FM3	—	—
5	Change PRCB	—	—

14.5.12 C2451: Release new transfer belt unit

Relevant parts	
Transfer belt unit	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Reinstall unit	—	—
2	Check there is a short circuit in the fuse of the transfer belt unit.	—	—
3	Check the PRCB connector for proper connection and correct as necessary.	—	—
4	Change PRCB	—	—

14.5.13 C2551: Abnormally low toner density detected cyan TCR sensor

14.5.14 C2553: Abnormally low toner density detected magenta TCR sensor

14.5.15 C2555: Abnormally low toner density detected yellow TCR sensor

Relevant parts	
Imaging unit /C Imaging unit /M Imaging unit /Y Toner cartridge /C Toner cartridge /M Toner cartridge /Y	Toner supply motor/CK (M3) Toner supply motor/YM (M4) Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Reinstall imaging unit	—	—
2	Reinstall toner cartridge	—	—
3	M3, M4 operation check (At this time, IU must be non-installation.)	PRCB CN39PRCB-1 to 4 (M3) PRCB CN39PRCB-5 to 8 (M4)	D-23
4	Change imaging unit	—	—
5	Change PRCB	—	—

14.5.16 C2552: Abnormally high toner density detected cyan TCR sensor

14.5.17 C2554: Abnormally high toner density detected magenta TCR sensor

14.5.18 C2556: Abnormally high toner density detected yellow TCR sensor

Relevant parts	
Imaging unit /C Imaging unit /M Imaging unit /Y Toner cartridge /C Toner cartridge /M Toner cartridge /Y	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Reinstall imaging unit	—	—
2	Reinstall toner cartridge	—	—
3	Change imaging unit	—	—
4	Change PRCB	—	—

14.5.19 C2557: Abnormally low toner density detected black TCR sensor

Relevant parts	
Imaging unit /K Toner cartridge /K	Toner supply motor/CK (M3) Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	M3 operation check (At this time, IU must be non-installation.)	PRCB CN39PRCB-1 to 4	D-23
2	Reinstall imaging unit	—	—
3	Reinstall toner cartridge	—	—
4	Change imaging unit /K	—	—
5	Change PRCB	—	—

14.5.20 C2558: Abnormally high toner density detected black TCR sensor

Relevant parts	
Imaging unit /K Toner cartridge /K	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Reinstall imaging unit	—	—
2	Reinstall toner cartridge	—	—
3	Change imaging unit /K	—	—
4	Change PRCB	—	—

14.5.21 C2559: Cyan TCR sensor adjustment failure

14.5.22 C255A: Magenta TCR sensor adjustment failure

14.5.23 C255B: Yellow TCR sensor adjustment failure

Relevant parts	
Imaging unit /C Imaging unit /M Imaging unit /Y	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Reinstall imaging unit	—	—
2	Change imaging unit	—	—
3	Change PRCB	—	—

14.5.24 C255C: Black TCR sensor adjustment failure

Relevant parts	
Imaging unit /K	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Reinstall imaging unit /K	—	—
2	Change imaging unit /K	—	—
3	Change PRCB	—	—

14.5.25 C2650: Main backup media access error

Relevant parts	
Service EEPROM board (SV ERB)	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the connector (CN23PRCB) on PRCB, the connector (CN1SV ERB) on SV ERB, and the harness between the boards for proper connection and correct as necessary.	—	—
2	Change PRCB *1.* Turn OFF the power switch and replace the current PRCB with a new one. (When using a PRCB of another machine in service, be sure to use a PRCB installed in the same model.) See P.99 *2.* Update the PRCB firmware. *3.* After completing the firmware update, turn OFF and ON the power switch and check to see that warm-up is started. Make sure that malfunction codes other than C2650 or improper IU/TC placement is not detected. *4.* When the trouble cannot be solved, reinstall the removed PRCB to the original board. **NOTE** • **When taking the above steps, check whether PRCB is defective or not without replacing the SV ERB.**	—	—
3	Change SV ERB *1.* Replace the current SV ERB with a new one. See P.106 *2.* Turn ON the power switch and check to see that warm-up is started. (One minute is spent to prepare the new SV ERB for use. During the period, the control panel backlight stays off.) Make sure that malfunction codes other than C2650 or improper IU/TC placement is not detected. *3.* Make the specified readjustments. See P.106	—	—
4	If the above actions do not solve the problem, contact KMBT.	—	—

14.5.26 C2651: EEPROM access error (IU C)

14.5.27 C2652: EEPROM access error (IU M)

14.5.28 C2653: EEPROM access error (IU Y)

14.5.29 C2654: EEPROM access error (IU K)

Relevant parts	
Imaging unit /C Imaging unit /M Imaging unit /Y Imaging unit /K	Printer control board (PRCB)

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	Check the harness for proper connection and correct as necessary.	—	—
4	Change imaging unit	—	—
5	Change PRCB	—	—

14.5.30 C2A01: EEPROM access error (TC C)

14.5.31 C2A02: EEPROM access error (TC M)

14.5.32 C2A03: EEPROM access error (TC Y)

14.5.33 C2A04: EEPROM access error (TC K)

Relevant parts	
Toner cartridge /C Toner cartridge /M Toner cartridge /Y Toner cartridge /K	Printer control board (PRCB)

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	Check the harness for proper connection and correct as necessary.	—	—
4	Change toner cartridge	—	—
5	Check that CN29 harness on PRCB has a ferrite core. If not, attach the ferrite core to the harness.	—	—
6	Change PRCB	—	—

14.5.34 C3101: Fusing roller separation failure

Relevant parts	
Fusing retraction motor (M12) Fusing roller retraction sensor (PS38)	Printer control board (PRCB) Fusing unit

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the M12 connector for proper connection and correct as necessary.	—	—
2	PS38 I/O check	PRCB CN28PRCB-8 (ON)	D-25
3	M12 operation check	PRCB CN28PRCB-4 to 5	D-25
4	Change M12	—	—
5	Change fusing unit	—	—
6	Change PRCB	—	—

14.5.35 C3201: Fusing motor failure to turn

14.5.36 C3202: Fusing motor turning at abnormal timing

Relevant parts	
Fusing motor (M5)	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the M5 connector for proper connection and correct as necessary.	—	—
2	Check the loading status of the fusing unit drive, and correct the error as necessary.	—	—
3	Check the fusing unit, PRCB for proper connection and correct or change as necessary.	—	—
4	M5 operation check	PRCB CN34PRCB-2 (REM) PRCB CN34PRCB-5 (LOCK)	D-21
5	Change M5	—	—
6	Change PRCB	—	—

14.5.37 C3301: Fusing cooling fan motor/ 1 failure to turn

Relevant parts	
Fusing cooling fan motor/1 (FM9)	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the FM9 connector for proper connection and correct as necessary.	—	—
2	Check the fan for possible overload and correct as necessary.	—	—
3	FM9 operation check	PRCB CN40PRCB-2 (ON) PRCB CN40PRCB-3 (LOCK)	D-19
4	Change FM9	—	—
5	Change PRCB	—	—

14.5.38 C3302: Fusing cooling fan motor/ 2,3 failure to turn

Relevant parts	
Fusing cooling fan motor/2 (FM10) Fusing cooling fan motor/3 (FM11)	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the FM10 or FM11 connector for proper connection and correct as necessary.	—	—
2	Check the fan for possible overload and correct as necessary.	—	—
3	FM10/FM11 operation check	PRCB CN40PRCB-5 (ON) PRCB CN40PRCB-6 (LOCK)	D-19
		PRCB CN40PRCB-8 (ON) PRCB CN40PRCB-9 (LOCK)	D-18
4	Change FM10/FM11	—	—
5	Change PRCB	—	—

14.5.39 C3421: Fusing heaters trouble (heating side)

14.5.40 C3423: Fusing heaters trouble (pressurizing side)

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

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 open/close operation of the upper right door.	—	—
3	Check the fusing unit, PRCB and DCPU for proper connection and correct or change as necessary.	—	—
4	Change fusing unit	—	—
5	Change PRCB	—	—
6	Change DCPU	—	—

14.5.41 C3461: Release new fusing unit

Relevant parts	
Fusing unit	Printer control board (PRCB)

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, PRCB for proper connection and correct or change as necessary.	—	—
3	Reinstall fusing unit	—	—
4	Change fusing unit	—	—
5	Change PRCB	—	—

14.5.42 C3721: Fusing abnormally high temperature detection (heating side)

14.5.43 C3723: Fusing abnormally high temperature detection (pressurizing side)

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

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 open/close operation of the upper right door.	—	—
3	Check the fusing unit, PRCB and DCPU for proper connection and correct or change as necessary.	—	—
4	Change fusing unit	—	—
5	Change PRCB	—	—
6	Change DCPU	—	—

14.5.44 C3821: Fusing abnormally low temperature detection (heating side)

14.5.45 C3823: Fusing abnormally low temperature detection (pressurizing side)

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

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 open/close operation of the upper right door.	—	—
3	Check the fusing unit, PRCB and DCPU for proper connection and correct or change as necessary.	—	—
4	Change fusing unit	—	—
5	Change PRCB	—	—
6	Change DCPU	—	—

14.5.46 C4151: Polygon motor rotation trouble (C)

14.5.47 C4152: Polygon motor rotation trouble (M)

14.5.48 C4153: Polygon motor rotation trouble (Y)

14.5.49 C4154: Polygon motor rotation trouble (K)

Relevant parts	
PH unit	PH relay board (PHREYB) Printer control board (PRCB)

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 PHREYB	—	—
4	Change PRCB	—	—

14.5.50 C4551: Laser malfunction (C)

14.5.51 C4552: Laser malfunction (M)

14.5.52 C4553: Laser malfunction (Y)

14.5.53 C4554: Laser malfunction (K)

Relevant parts	
PH unit	PH relay board (PHREYB) Printer control board (PRCB)

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 PHREYB	—	—
4	Change PRCB	—	—

14.5.54 C5102: Transport motor's failure to turn

14.5.55 C5103: Transport motor's turning at abnormal timing

Relevant parts	
Transport motor (M1)	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the M1 connector for proper connection and correct as necessary.	—	—
2	Check M1 for proper drive coupling and correct as necessary.	—	—
3	Check the PRCB connector for proper connection and correct as necessary.	—	—
4	M1 operation check	PRCB CN34PRCB-10 (REM) PRCB CN34PRCB-13 (LOCK)	D-22
5	Change M1	—	—
6	Change PRCB	—	—

14.5.56 C5351: Power supply cooling fan motor's failure to turn

Relevant parts	
Power supply cooling fan motor (FM5)	DC power supply (DCPU) Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the FM5 connector for proper connection and correct as necessary.	—	—
2	Check the fan for possible overload and correct as necessary.	—	—
3	FM5 operation check	PRCB CN30PRCB-11 (ON) PRCB CN30PRCB-12 (LOCK)	K-8
4	Change FM5	—	—
5	Change DCPU	—	—
6	Change PRCB	—	—

14.5.57 C5353: Cooling fan motor/2's failure to turn

Relevant parts	
Cooling fan motor/2 (FM2)	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the FM2 connector for proper connection and correct as necessary.	—	—
2	Check the fan for possible overload and correct as necessary.	—	—
3	FM2 operation check	PRCB CN28PRCB-2 (ON) PRCB CN28PRCB-3 (LOCK)	D-24
4	Change FM2	—	—
5	Change PRCB	—	—

14.5.58 C5354: Exhaust fan motor's failure to turn

Relevant parts	
Exhaust fan motor (FM4)	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the FM4 connector for proper connection and correct as necessary.	—	—
2	Check the fan for possible overload and correct as necessary.	—	—
3	FM4 operation check	PRCB CN3PRCB-14 (ON) PRCB CN3PRCB-16 (LOCK)	D-6
4	Change FM4	—	—
5	Change PRCB	—	—

14.5.59 C5357: Cooling fan motor/1's failure to turn

Relevant parts	
Cooling fan motor/1 (FM1)	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the FM1 connector for proper connection and correct as necessary.	—	—
2	Check the fan for possible overload and correct as necessary.	—	—
3	FM1 operation check	PRCB CN30PRCB-4 (ON) PRCB CN30PRCB-6 (LOCK)	K-7
4	Change FM1	—	—
5	Change PRCB	—	—

14.5.60 C5371: MFP board cooling fan motor's failure to turn

Relevant parts	
MFP board cooling fan motor (FM6)	MFP board (MFPB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the FM6 connector for proper connection and correct as necessary.	—	—
2	Check the fan for possible overload and correct as necessary.	—	—
3	FM6 operation check	PRCB CN44PRCB-1 (REM) PRCB CN44PRCB-3 (LOCK)	K-9
4	Change FM6	—	—
5	Change MFPB	—	—

14.5.61 CA051: Standard controller configuration failure

14.5.62 CA052: Controller hardware error

14.5.63 CA053: Controller start failure

Relevant parts	
MFP board (MFPB)	

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check to see if the following setting has been correctly made: [Service Mode] → [System Settings] → [Image Controller]. If changing the setting, turn OFF the power switch and turn it ON again after 10 seconds or more.	—	—
2	Check the connectors of the MFP board (MFPB) for proper connection and correct as necessary.	—	—
3	Change MFPB	—	—

14.5.64 CC151: ROM contents error upon startup (MSC)

14.5.65 CC153: ROM contents error upon startup (PRT)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the ROM version.	—	—
2	Rewrite the firmware.	—	—
3	Replace the appropriate board.	—	—

14.5.66 CC163: ROM contents error (PRT)

Relevant parts	
Service EEPROM board (SV ERB)	Printer control board (PRCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Rewrite the firmware.	—	—
2	Change PRCB *1.* Turn OFF the power switch and replace the current PRCB with a new one. (When using a PRCB of another machine in service, be sure to use a PRCB installed in the same model.) See P.99 *2.* Update the PRCB firmware. *3.* After completing the firmware update, turn OFF and ON the power switch and check to see that warm-up is started. *4.* When the trouble cannot be solved, reinstall the removed PRCB to the original board. **NOTE** • **When taking the above steps, check whether PRCB is defective or not without replacing the SV ERB.**	—	—
3	Change SV ERB *1.* Replace the current SV ERB with a new one. See P.106 *2.* Turn ON the power switch and check to see that warm-up is started. (One minute is spent to prepare the new SV ERB for use. During the period, the control panel backlight stays off.) *3.* Make the specified readjustments. See P.106	—	—
4	If the above actions do not solve the problem, contact KMBT.	—	—

14.5.67 CC164: ROM contents error (MSC)

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

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the ROM version.	—	—
2	Rewrite the firmware.	—	—
3	Replace the corresponding board.	—	—
4	When not reviving even if the above-mentioned procedure is done, contact the responsible people of KMBT.	—	—

14.5.68 CD002: JOB RAM save error

Relevant parts	
MFP board (MFPB)	Hard disk

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

14.5.69 CD004: Hard disk access error

14.5.70 CD005: Hard disk error 1

14.5.71 CD006: Hard disk error 2

14.5.72 CD007: Hard disk error 3

14.5.73 CD008: Hard disk error 4

14.5.74 CD009: Hard disk error 5

14.5.75 CD00A: Hard disk error 6

14.5.76 CD00B: Hard disk error 7

14.5.77 CD00C: Hard disk error 8

14.5.78 CD00D: Hard disk error 9

14.5.79 CD00E: Hard disk error A

14.5.80 CD00F: Hard disk data transfer error

14.5.81 CD020: Hard disk verify error

Relevant parts	
MFP board (MFPB)	Hard disk

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

14.5.82 CD010: Hard disk unformat

Relevant parts	
MFP board (MFPB)	Hard disk

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Select [Service Mode] → [Machine Status] → [HDD Format], and conduct the HDD format function.	—	—
2	Change hard disk.	—	—
3	Change MFPB	—	—

14.5.83 CD011: Hard disk out of specifications mounted

Relevant parts	
Hard disk	

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the hard disk specifications.	—	—
2	Change the hard disk.	—	—

14.5.84 CD201: File memory mounting error

14.5.85 CD202: Memory capacity discrepancy

14.5.86 CD203: Memory capacity discrepancy 2

Relevant parts	
MFP board (MFPB)	Memory

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Check to see if the memory on MFPB is installed correctly.	—	—
2	Change the memory on MFPB.	—	—
3	Change MFPB	—	—

14.5.87 CD211: PCI-SDRAM DMA operation failure

14.5.88 CD212: Compression/extraction timeout detection

Relevant parts	
MFP board (MFPB)	

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Change MFPB	—	—

14.5.89 CD241: Encryption board setting error

14.5.90 CD242: Encryption board mounting error

Relevant parts	
Encryption board (SC-503)	

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Check the encryption board connector for proper connection and correct as necessary.	—	—
2	Change encryption board.	—	—

14.5.91 CD261: USB host board failure

Relevant parts	
MFP board (MFPB)	USB host board (EK-603)

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Check that the USB device in use is compliant with the standard.	—	—
2	Check the operation with another USB device.	—	—
3	Check the USB host board connector for proper connection and correct as necessary.	—	—
4	Change USB host board.	—	—
5	Change MFPB	—	—

14.5.92 CD3##: NVRAM data error

- When the data stored due to the NVRAM trouble is lost, backup data can be used for restoration.
- Trouble code [C-D370] will be displayed when multiple errors (over 5) of NVRAM data are detected, which can be restored with one restoration command.
- Data backup will be automatically performed every hour. Backup can also be performed manually with the following setting.
  [Service Mode] → [Security Settings] → [Data Backup]
  See P.245

A. Recovery procedure from NVRAM data error

1. On the trouble code screen, highlight “Recover Data” and press the Menu/Select key.
2. Select [Yes] and press the Menu/Select key.
3. The screen will be shifted to the data restoration screen to perform data restoration.

NOTE

- **When the restoration is performed in a short time, data restoration screen may not be displayed.**

4. Check the message which indicates that the data restoration was successfully conducted. Turn OFF the power switch and turn it ON again more than 10 seconds after.

NOTE

- **In case it failed to restore data, return to the trouble code screen.**

14.5.93 CD401: NACK command incorrect

14.5.94 CD402: ACK command incorrect

14.5.95 CD403: Checksum error

14.5.96 CD404: Receiving packet incorrect

14.5.97 CD405: Receiving packet analysis error

14.5.98 CD406: ACK receiving timeout

14.5.99 CD407: Retransmission timeout

Relevant parts	
MFP board (MFPB)	

Step	Action	WIRING DIAGRAM	
		Control Signal	Location (Electrical Component)
1	Check whether there is an strong electromagnetic noise source near the main body.	—	—
2	Check the connectors on MFPB for proper connection and correct as necessary.	—	—
3	Change MFPB	—	—

14.5.100 CE001: Abnormal message queue

14.5.101 CE003: Task error

14.5.102 CE004: Event error

14.5.103 CE005: Memory access error

14.5.104 CE006: Header access error

14.5.105 CE007: DIMM initialize error

Relevant parts	
MFP board (MFPB)	

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

14.5.106 CE002: Message and method parameter failure

Relevant parts	
MFP board (MFPB)	Hard disk

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Turn OFF the power switch and turn it ON again, and conduct the following setting. [Service Mode] → [System Settings] → [Initialize] → [Data Clear]. See P.210	—	—
2	Format hard disk.	—	—
3	Change hard disk.	—	—
4	Change MFPB	—	—

14.5.107 CEEE1: MSC undefined malfunction occurring

Relevant parts	
MFP board (MFPB)	

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

14.5.108 CEEE3: Engine section undefined malfunction

Relevant parts	
Printer control board (PRCB)	

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

15. Power supply trouble

15.1 Machine is not energized at all (DCPU operation check)

Relevant parts	
Main power switch (S1) Front door switch/1 (S3) Front door switch/2 (S4) Printer control board (PRCB)	DC power supply (DCPU)

Step	Check item	WIRING DIAGRAM (Location)	Result	Action
1	Is a power voltage supplied across CN1DCPU-1 and 2 on DCPU?	S-4	NO	Check the WIRING from the wall outlet to S1 to CN1DCPU.
2	Are the fuses on DCPU conducting?	—	NO	Change DCPU.
3	Is DC24 V being output from CN7DCPU-5 on DCPU?	Q-6	NO	Change DCPU.
4	Is DC5 V being input to CN5DCPU-1 on DCPU?	Q-5	NO	Change DCPU.
5	Is DC5 V being input to CN31PRCB-3 on the printer control board? (LED on PRCB does not blink.)	H-4	NO	Change DCPU.
			YES	Change PRCB.

15.2 Control panel indicators do not light.

Relevant parts	
Operation Board (OB)	JMP board (JMPB) DC power supply (DCPU)

Step	Check item	WIRING DIAGRAM (Location)	Result	Action
1	Is OB (PJ30MFPB) securely set on the MFPB?	T to U-12	NO	Reconnect.
2	After the power switch is turned ON, the blue and orange status indicator lights continue to be on while the control panel is not being displayed. Is JMPB (PJ17MFPB) securely set on the MFPB?	T to U-9	NO	Reconnect.
3	Is a power voltage being applied across CN1DCPU-1 and 2 on DCPU?	S-4	NO	Check the WIRING from the wall outlet to S1 to CN1DCPU.
4	Is the fuse on DCPU conducting?	—	NO	Change DCPU.

15.3 Fusing heaters do not operate

Relevant parts	
Main power switch (S1) Right door switch (S5) Fusing unit	DC power supply (DCPU)

Step	Check item	WIRING DIAGRAM (Location)	Result	Action
1	Is the power source voltage applied across CN7DCPU-5 on DCPU? During this time, the right door should be closed.	Q-6	NO	Check wiring from power outlet to S1 to CN7DCPU to S5.
2	Is the power source voltage applied across CN27-1?	D-19	YES	Fusing unit
			NO	Change DCPU.

15.4 Power is not supplied to option

15.4.1 PC-106/205/406

Step	Check item	WIRING DIAGRAM (Location)	Result	Action
1	Is DC24 V being applied to hookup connector CN47-13?	J-16	NO	Malfunction in paper feed cabinet
2	Is DC24 V being output from CN14PRCB-2 on PRCB?	H-16	NO	Check wiring from PRCB to CN47 to paper feed cabinet.
3	Is the fuse on DCPU conducting?	—	YES	Change DCPU.
			NO	Malfunction in paper feed cabinet

⚠1 15.4.2 FS-519/FS-609

Step	Check item	WIRING DIAGRAM (Location)	Result	Action
1	Are DC24 V being applied to CN51-1?	J-18	NO	Malfunction in FS-519/FS-609.
2	Are DC24 V being applied to CN4DCPU-1 on DCPU?	Q-3	NO	Check wiring from DCPU to FS-519/FS-609.
3	Is the fuse on DCPU conducting?	—	YES	Change DCPU.
			NO	Malfunction in FS-519/FS-609.

16. Image quality problem

16.1 How to read element date

- Using the numeric values on the list produced through [Service Mode] → [List Output] → [Adjustment List] or [Management List], isolate the cause of the image problem.

16.1.1 Table No.

- Check the table No. by the machine management list.

Vdc-C Vdc-M Vdc-Y Vdc-K	• Shows the developing bias value of each color of toner when an image is produced. • Standard values: around 100 to 800 V • A correction is made to make the image lighter when the numeric value is greater. • A correction is made to make the image darker when the numeric value is smaller. • Relevant Components: Imaging unit, high voltage unit (HV)
Vg-C Vg-M Vg-Y Vg-K	• Shows the grid voltage value of each color of toner when an image is produced. • Standard values: around 300 to 1100 V • A correction is made to make the image lighter when the numeric value is greater. • A correction is made to make the image darker when the numeric value is smaller. • Relevant Components: Imaging unit, high voltage unit (HV)

16.1.2 Level history1

- Check the level history1 by the adjustments list.

TCR-C TCR-M TCR-Y TCR-K	• Shows the T/C ratio reading taken last (in 0.01 % increments). • Standard value: 6 to 8 % • Relevant components: TCR sensor • “Reading taken last” means: Latest value When the Start key is pressed, the output value is displayed while a test print is being produced.
IDC1 IDC2	• Shows the IDC bare surface output reading taken last (in 0.01 V increments). • It should normally be around 4.3 V. • The output range is 0 V to 5 V. • “Reading taken last” means: Present value • Relevant components: IDC sensor, transfer belt unit
Temp-Heat Temp-Press	• Shows the temperature of the each part of the fusing unit (in 1 °C increments). • Relevant components: Fusing unit

16.1.3 Level history2

- Check the level history2 by the adjustments list.

IDC Sensor Adjust 1 IDC Sensor Adjust 2	• Shows the IDC intensity adjustment value. • It should normally be around 40 and can range from 0 to 255. • The value becomes greater as the transfer belt unit has been used more. • Relevant components: IDC sensor, transfer belt unit
ATVC -C ATVC -M ATVC -Y ATVC -K ATVC -2nd	• Shows the latest ATVC level (which varies according to the paper type). • 5 μA to 40 μA (ATVC-C/-M/-Y/-K) • 300 V to 4800 V (ATVC-2nd) • Relevant components: Transfer belt unit, High voltage unit (HV), 2nd transfer assy

16.2 How to identify problematic part

- This chapter is divided into two parts: “Initial check items” and “Troubleshooting procedure 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

A. Initial check items 1

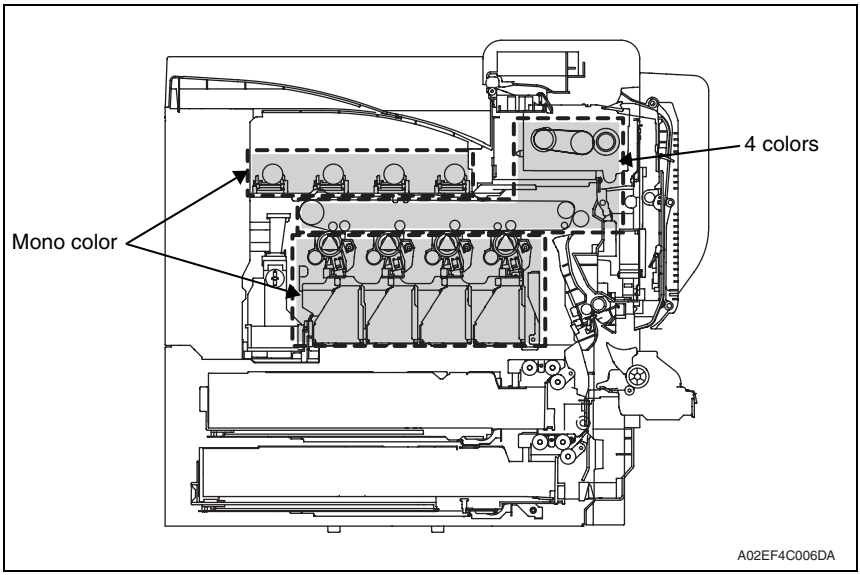
- The trouble will be distinguished whether it is on the printer, or on the controller.

* How to distinguish

Action	Result	Next step
When transmitting the print job to magicolor 8650, the “RIP” is displayed on the control panel on the machine.	NO	See P.373 (Trouble on the controller)
When selecting “GDI Demo Page” from “Print Reports” which is available from “User Settings”, image trouble occurs.	NO	• Check the connector connected to MFP board. • Replace the MFP board.
	YES	Initial check items 2

B. Initial check items 2

- 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



- Evaluation procedure

Image problem	Action	Result	Cause	Next step
Lines, bands	From [User Settings], select [Print Reports] → [GDI Demo Page], and produce a test print. Is image problem evident in each of all four colors?	YES	Printer, 4 colors	P.360
		NO	Printer, single color	P.346

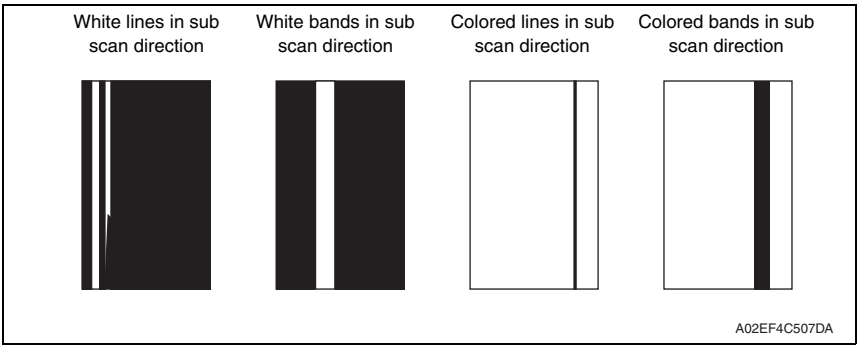
16.3 Solution

NOTE

- **Typical faulty image samples shown in the following are all printed with A4S setting.**

16.3.1 Printer 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

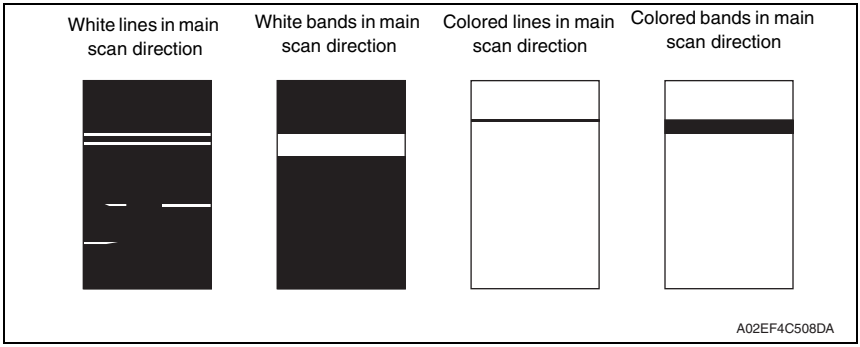


B. Troubleshooting procedure

Step	Section	Check item	Result	Action
1	Image check	A white line or black line in sub scan direction is sharp.	YES	Clean the electrostatic charger wire.
2	Imaging unit	The surface of the PC drum is scratched.	YES	Change imaging unit.
3		Dirty on the outside.	YES	Clean.
4		Contact terminals make good connection between each IU and machine.	NO	Clean contact terminals.
5		Developing bias contact terminal makes good connection.	NO	Clean contact terminal and check terminal position.
6	PH unit	The surface of the PH window is dirty.	YES	Clean with cleaning jig.
7		The problem has been eliminated through the checks of steps up to 6.	NO	Change imaging unit. → Change transfer belt unit. → Change PH unit.

16.3.2 Printer 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



B. Troubleshooting procedure

Step	Section	Check item	Result	Action
1	Image check	A white line or black line in main scan direction is sharp.	NO	Clean the electrostatic charger wire.
2	Imaging unit	The surface of the PC drum is scratched.	YES	Change imaging unit.
3		Dirty on the outside.	YES	Clean.
4		Contact terminals make good connection between each IU and machine.	NO	Clean contact terminals.
5		Developing bias contact terminal makes good connection.	NO	Clean contact terminal and check terminal position.
6	PH unit	The surface of the PH window is dirty.	YES	Clean with cleaning jig.
7		The problem has been eliminated through the checks of steps up to 6.	NO	Change imaging unit. → Change transfer belt unit. → Change PH unit.

16.3.3 Printer monocolor: uneven density in sub scan direction

A. Typical faulty images





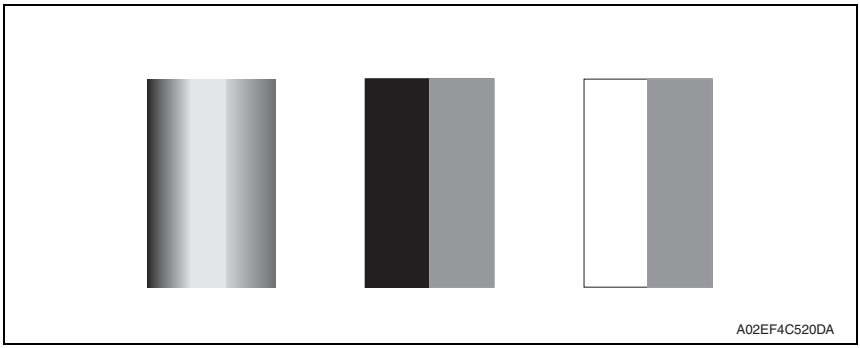
A02EF4C521DA

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	Machine MachineAdjustment → LD Adjust → LD Light balance	The problem has been eliminated through the LD light balance.	NO	Go to next step.
3	Imaging unit	The surface of the PC drum is scratched.	YES	Change imaging unit.
4		Dirty on the outside.	YES	Clean.
5	PH unit	The surface of the PH window is dirty.	YES	Clean with cleaning jig.
6	Image transfer belt unit	Is abnormality found in the cam gear?	YES	Change transfer belt unit.
7		The problem has been eliminated through the checks of steps up to 6.	NO	Change IU. → Change PH unit. → Change printer control board. → Change High voltage unit.

16.3.4 Printer monocolor: uneven density in main scan direction

A. Typical faulty images



B. Troubleshooting procedure

Step	Section	Check item	Result	Action
1	MachineAdjustment → LD Adjust → LD Light balance	The problem has been eliminated through the LD light balance.	NO	Go to next step.
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 roller	Check that the spring does not come off during the pressure operation of the transfer roller.	NO	Correct. Change transfer roller unit.
6	Transfer belt unit	Transfer belt unit makes positive contact with plates on rails.	NO	Check and correct contacts.
7		Is abnormality found in the cam gear?	YES	Change transfer belt unit.
8		The problem has been eliminated through the checks of steps up to 7.	NO	Change imaging unit. → Change PH unit. → Change high voltage unit.

16.3.5 Printer monocolor: low image density

A. Typical faulty images



A02EF4C516DA

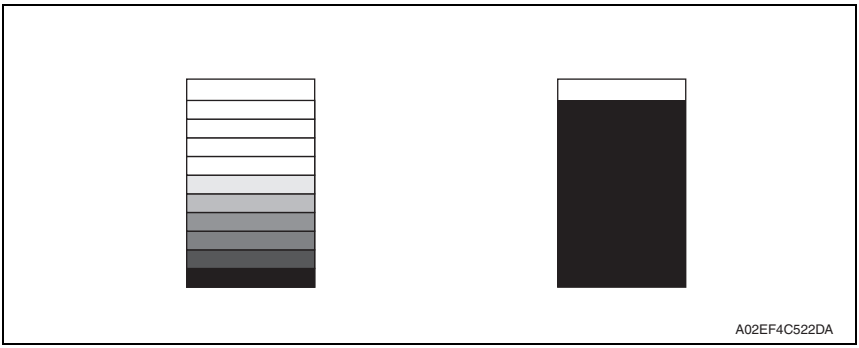
B. Troubleshooting procedure

Step	Section	Check item	Result	Action
1	Warning display	The warning code is displayed on the panel.	YES	Take action according to the warning code shown on the state confirm screen.
2	[Table No.] on the list produced through [Service Mode] → [List Output] → [Management List]	Check data for Vg and Vdc. Color Vdc: around 400 V Vg : around 500 V Black Vdc: around 400 V Vg : around 500 V	—	Go to next step.
3	[Level History1] on the list produced through [Service Mode] → [List Output] → [Adjustment List]	Check TCR data. (specified rang: 6 to 8 %)	NO	Go to next step.
4		IDC output value is around 4.3 V.	NO	Clean IDC sensor and execute the image stabilization. Check image transfer belt for damage and correct as necessary.
5	Level history data check results	Low TCR and low Vg and Vdc	YES	Go to step 10.
6		Low TCR and high Vg and Vdc	YES	Go to step 14.
7		TCR falling within specified range and low Vg and Vdc	YES	Go to step 10.
8		TCR falling within specified range and high Vg and Vdc	YES	Go to step 14.
9		The situations other than the above-mentioned.	YES	Go to step 10.
10	Imaging unit	Dirty on the outside.	YES	Clean.
11	PH unit	The surface of the PH window is dirty.	YES	Clean with cleaning jig.
12	Transfer belt unit	Transfer belt unit makes positive contact with plates on rails.	NO	Check and correct contacts.
13		Is abnormality found in the cam gear?	YES	Change transfer belt unit.

Step	Section	Check item	Result	Action
14	Hopper unit	Connectors are loose.	YES	Reconnect.
15		Gear is cracked.	YES	Change gear.
16	Service Mode → ProcessAdjustment → TCR Level Setting	Toner is properly supplied when TCR toner supply is run.	NO	Go to next step.
17	Service Mode → ProcessAdjustment → Dmax Density	The problem has been eliminated through the adjust of Dmax Density.	NO	Go to next step.
18	Service Mode → ProcessAdjustment → Stabilization → Initialize + Stabi.	After the Initialize + Stabi. sequence has been completed, run gradation adjust.	NO	Go to next step.
19		The problem has been eliminated through the checks of steps up to 18.	NO	Change imaging unit. → Change printer control board. →Change PH unit. →Change high voltage unit.

16.3.6 Printer monocolor: gradation reproduction failure

A. Typical faulty images

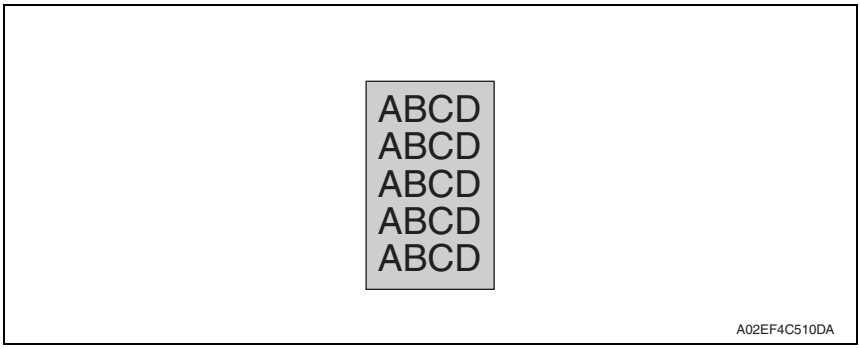


B. Troubleshooting procedure

Step	Section	Check item	Result	Action
1	Warning display	The warning code is displayed on the panel.	YES	Take action according to the warning code shown on the state confirm screen.
2	Photo/density	Original type and screen pattern are selected properly.	NO	Change screen pattern.
3	Imaging unit	Dirty on the outside.	YES	Clean.
4	PH unit	The surface of the PH window is dirty.	YES	Clean with cleaning jig.
5	[Level History1] on the list produced through [Service Mode] → [List Output] → [Adjustment List]	IDC output value is around 4.3 V.	NO	Clean IDC sensor and execute the stabilization. Check transfer belt for damage and correct as necessary.
6	Service Mode → ProcessAdjustment → Dmax Density	The problem has been eliminated through the adjust of Dmax Density.	NO	Go to next step.
7	Service Mode → ProcessAdjustment → Stabilizarion → Initialize + Stabi.	After the Initialize + Stabi. sequence has been completed, run gradation adjust;	NO	Go to next step.
8		The problem has been eliminated through the checks of steps up to 7.	NO	Change imaging unit. → Change printer control board. → Change PH unit. → Change high voltage unit.

16.3.7 Printer monocolor: foggy background

A. Typical faulty images



B. Troubleshooting procedure

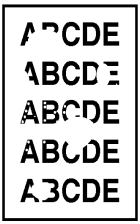
Step	Section	Check item	Result	Action
1	Warning display	The warning code is displayed on the panel.	YES	Take action according to the warning code shown on the state confirm screen.
2	[Table No.] on the list produced through [Service Mode] → [List Output] → [Management List]	Check data for Vg and Vdc. Color Vdc: around 400 V Vg : around 500 V Black Vdc: around 400 V Vg : around 500 V	NO	Go to next step.
3	[Level History1] on the list produced through [Service Mode] → [List Output] → [Adjustment List]	Check TCR data. (specified rang: 6 to 8 %)	NO	Go to next step.
4		IDC output value is around 4.3 V.	NO	Clean IDC sensor and execute the stabilization. Check transfer belt for damage and correct as necessary.
5	Level history data check results	Low TCR and low Vg and Vdc	YES	Go to step 10.
6		Low TCR and high Vg and Vdc	YES	Go to step 12.
7		TCR falling within specified range and low Vg and Vdc	YES	Go to step 10.
8		TCR falling within specified range and high Vg and Vdc	YES	Go to step 12.
9		The situations other than the above-mentioned.	YES	Go to step 10.
10	Imaging unit	Dirty on the outside.	YES	Clean.
11	PH unit	The surface of the PH window is dirty.	YES	Clean with cleaning jig.
12	Service Mode → ProcessAdjustment → Background Margin	The problem is eliminated after background margin has been adjusted.	NO	Go to next step.

Step	Section	Check item	Result	Action
13	Service Mode → Process Adjustment → Dmax Density	The problem has been eliminated through the adjust of Dmax Density.	NO	Go to next step.
14	Service Mode → ProcessAdjustment → Stabilization → Initialize + Stabi.	After the Initialize + Stabi. sequence has been completed, run gradation adjust.	NO	Go to next step.
15	Printer control board (PRCB) PH relay board (PHREYB)	Check the connection of connectors, harness, and flat cables between PRCB and PHREYB, and correct if necessary.	NO	Change printer control board. Change PH relay board.
16		The problem has been eliminated through the checks of steps up to 15.	NO	Change imaging unit. → Change PH unit. → Change high voltage unit.

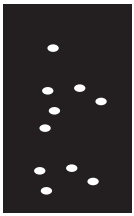
16.3.8 Printer monocolor: void areas, white spots

A. Typical faulty images

Void areas



White spots



A02EF4C523DA

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	See P.350
2		There is void area at the rear side section.	YES	Perform [TransferOutputAdj] of [ProcessAdjustment] under Service Mode.
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.
6	Installation environment	Is the atmospheric pressure at the installation site low?	YES	Make the following adjustment: [Service Mode] → [ProcessAdjustment] → [Bias Choice].

16.3.9 Printer monocolor: colored spots

A. Typical faulty images



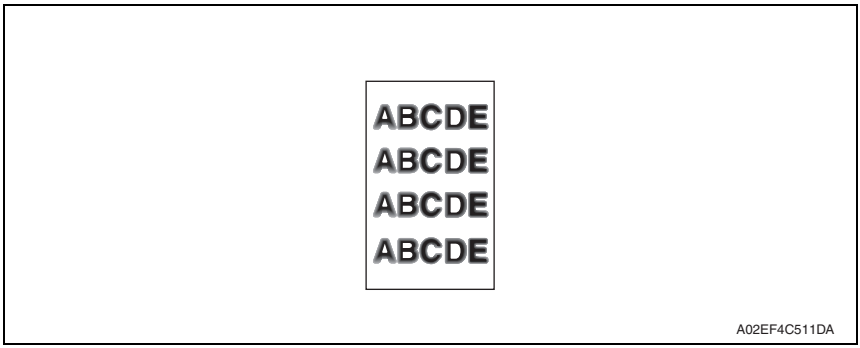
A02EF4C524DA

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.

16.3.10 Printer monocolor: blurred image

A. Typical faulty images

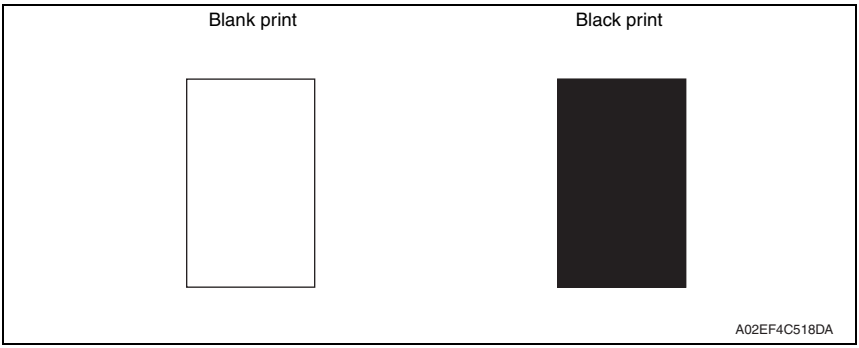


B. Troubleshooting procedure

Step	Section	Check item	Result	Action
1	PH unit	The surface of the PH window is dirty.	YES	Clean with cleaning jig.
2	Imaging unit	Dirty on the outside.	YES	Clean.
3		The problem has been eliminated through the checks of steps up to 2.	NO	Change imaging unit. → Change PH unit.

16.3.11 Printer monocolor: blank print, black print

A. Typical faulty images



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	Connector is connected properly.	NO	Reconnect.
5		The problem has been eliminated through the check of step 4.	NO	Change high voltage unit. → Change printer control board. → Change PH unit.

16.3.12 Printer monocolor: uneven image

A. Typical faulty images



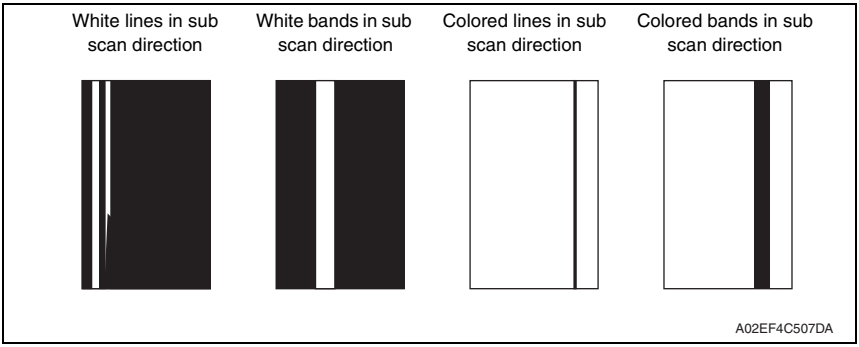
A02EF4C525DA

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	Toner cartridge	There is any stain or breakage on the drive section of the toner cartridge.	YES	Clean/replace the toner cartridge.
4	Imaging unit	There is any stain, damage or abrasion on the PC drum.	YES	Replace the imaging unit.
5	Transfer roller	There is any stain, damage, deformation or abrasion on the transfer roller.	YES	Replace the transfer roller.
6	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.
7		The problem has been eliminated through the check of step 6.	NO	Replace the transfer belt unit.

16.3.13 Printer 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

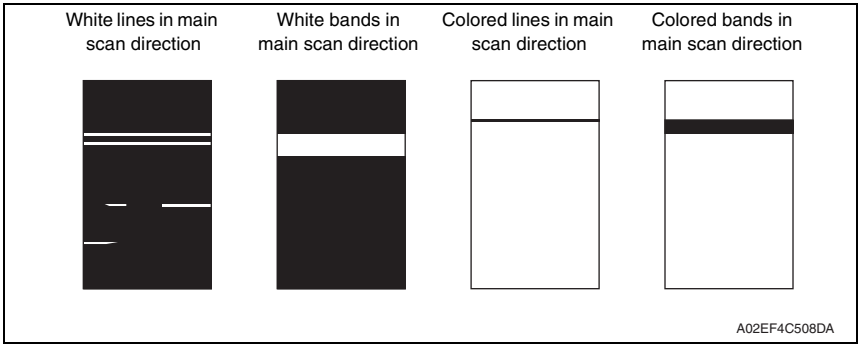


B. Troubleshooting procedure

Step	Section	Check item	Result	Action
1	Image check	A white line or colored line in sub scan direction.	YES	Clean the comb electrode by moving the comb electrode cleaning lever.
2	Transfer belt unit	Fingerprints, oil, or other foreign matter is evident on the transfer belt.	YES	Clean.
3		Transfer belt is dirty or scratched.	YES	Clean dirty belt with a soft cloth. Change transfer belt unit if belt is damaged.
4		Cleaning blade is not effective in removing toner completely.	YES	Clean cleaning blade. Change transfer belt unit.
5	Transfer roller unit	Transfer roller is dirty or scratched.	YES	Change transfer roller unit.
6	Paper path	There is foreign matter on paper path.	YES	Remove foreign matter.
7		Image transfer paper separator fingers are damaged or dirty.	YES	Clean or change.
8	Fusing unit	Fusing entrance guide plate is dirty or damaged.	YES	Clean. Change fusing unit.
9		Fusing paper separator fingers are dirty.	YES	Clean.
10		The problem has been eliminated through the checks of steps up to 9.	NO	Change printer control board

16.3.14 Printer 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

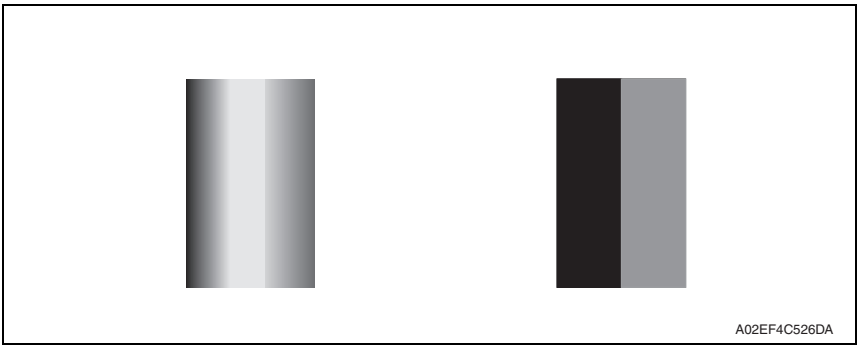


B. Troubleshooting procedure

Step	Section	Check item	Result	Action
1	Transfer belt unit	Fingerprints, oil, or other foreign matter is evident on the transfer belt.	YES	Clean.
2		Transfer belt is dirty or scratched.	YES	Clean dirty belt with a soft cloth. Change transfer belt unit if belt is damaged.
3	Transfer roller unit	Transfer roller is dirty or scratched.	YES	Change transfer roller unit.
4	Paper path	There is foreign matter on paper path.	YES	Remove foreign matter.
5		Image transfer paper separator fingers are damaged or dirty.	YES	Clean or change.
6	Fusing unit	Fusing entrance guide plate is dirty or damaged.	YES	Clean. Change fusing unit.
7		Fusing paper separator fingers are dirty.	YES	Clean.
8	Neutralizing brush	The resistance values between the neutralizing brush and the ground terminal is not ∞.	NO	Check the contact modify. Change neutralizing brush.
9		The problem has been eliminated through the checks of steps up to 8.	NO	Change printer control board

16.3.15 Printer 4-color: uneven density in sub scan direction

A. Typical faulty images

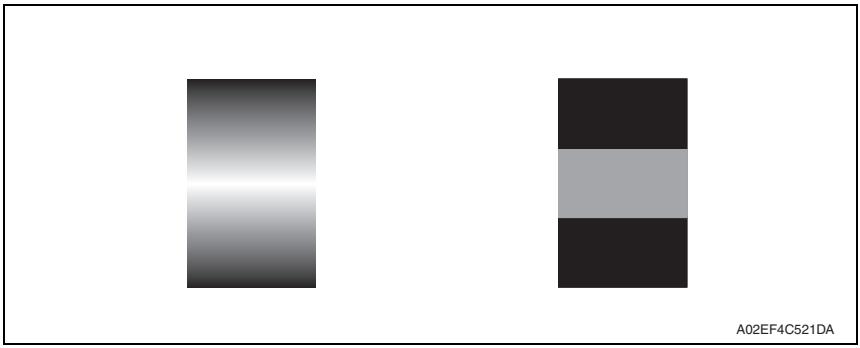


B. Troubleshooting procedure

Step	Section	Check item	Result	Action
1	Transfer belt unit	Fingerprints, oil, or other foreign matter is evident on the transfer belt.	YES	Clean.
2		Transfer belt is dirty or scratched.	YES	Clean dirty belt with a soft cloth. Change transfer belt unit if belt is damaged.
3		Terminal is dirty.	YES	Clean.
4	Transfer roller unit	Image transfer roller is installed properly.	NO	Reinstall.
5		Image 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 unit.

16.3.16 Printer 4-color: uneven density in main scan direction

A. Typical faulty images



B. Troubleshooting procedure

Step	Section	Check item	Result	Action
1	Transfer belt unit	Fingerprints, oil, or other foreign matter is evident on the transfer belt.	YES	Clean.
2		Transfer belt is dirty or scratched.	YES	Clean dirty belt with a soft cloth. Change transfer belt unit if belt is damaged.
3		Terminal is dirty.	YES	Clean.
4	Transfer roller unit	Image transfer roller is installed properly.	NO	Reinstall.
5		Image 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 unit. → Change high voltage unit.

16.3.17 Printer 4-color: low image density

A. Typical faulty images



A02EF4C516DA

B. Troubleshooting procedure

Step	Section	Check item	Result	Action
1	Paper	Paper is damp.	YES	Change paper to one just unwrapped from its package.
2	Transfer belt unit	Terminal is dirty.	YES	Clean.
3	Transfer roller unit	Transfer roller is installed properly.	NO	Reinstall.
4		Transfer roller is dirty or scratched.	NO	Change transfer roller unit.
5	IDC sensor	Sensor is dirty.	YES	Clean IDC sensor and execute the stabilization.
6	Service Mode → ProcessAdjustment → Dmax Density	The problem has been eliminated through the adjust of Dmax Density.	NO	Go to next step.
7	Service Mode → ProcessAdjustment → Stabilization → Initialize + Stabi.	After the Initialize + Stabi. sequence has been completed, run gradation adjust.	NO	Go to next step.
8		The problem has been eliminated through the checks of steps up to 7.	NO	Change image transfer belt unit. → Change printer control board. → Change high voltage unit.

16.3.18 Printer 4-color: poor color reproduction

A. Typical faulty images



A02EF4C527DA

B. Troubleshooting procedure

Step	Section	Check item	Result	Action
1	Paper	Paper is damp.	YES	Change paper to one just unwrapped from its package.
2	Transfer belt unit	Terminal is dirty.	YES	Clean.
3	Transfer roller unit	Transfer roller is installed properly.	NO	Reinstall.
4		Transfer roller is dirty or scratched.	NO	Change transfer roller unit.
5	IDC sensor	Sensor is dirty.	YES	Clean IDC sensor and execute the stabilization.
6	Service Mode → ProcessAdjustment → Dmax Density	The problem has been eliminated through the adjust of Dmax Density.	NO	Go to next step.
7	Service Mode → ProcessAdjustment → Stabilization → Initialize + Stabi.	After the Initialize + Stabi. sequence has been completed, run gradation adjust.	NO	Go to next step.
8		The problem has been eliminated through the checks of steps up to 7.	NO	Change image transfer belt unit. → Change printer control board → Change high voltage unit.

16.3.19 Printer 4-color: incorrect color image registration

A. Typical faulty images



A02EF4C512DA

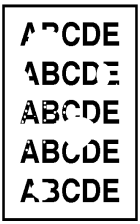
B. Troubleshooting procedure

Step	Section	Check item	Result	Action
1	Warning display	The warning code is displayed on the panel.	YES	Take action according to the warning code shown on the state confirm screen.
2	Machine condition	Vibration is given to the machine after power switch has been turned ON.	YES	Turn off the power switch and turn it on again more than 10 seconds after.
3	Transfer belt unit	Fingerprints, oil, or other foreign matter is evident on the transfer belt.	YES	Clean.
4		Transfer belt is dirty or scratched.	YES	Clean dirty belt with a soft cloth. Change transfer belt unit 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 unit	Transfer roller is installed properly.	NO	Reinstall.
8		Transfer roller is dirty or scratched.	YES	Change transfer roller unit.
9	Service Mode → MachineAdjustment → Fusing Speed	Brush effect or blurred image occurs.	YES	Readjust fusing transport speed.
10	Service Mode → MachineAdjustment → Color Reg.	Check the specific color in which color shift occurs.	YES	Perform “Color Reg.” 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 unit. → Change printer control board

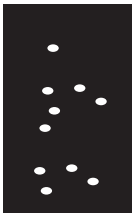
16.3.20 Printer 4-color: void areas, white spots

A. Typical faulty images

Void areas



White spots



A02EF4C523DA

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.365
2		There are void areas in the trailing edge.	YES	Perform [TransferOutputAdjust] of [ProcessAdjustment] under Service Mode.
3	Transfer belt unit	Fingerprints, oil, or other foreign matter is evident on the transfer belt.	YES	Clean.
4		Transfer belt is dirty or scratched.	YES	Clean dirty belt with a soft cloth. Change transfer belt unit if belt is damaged.
5	Transfer roller unit	Transfer roller is dirty or scratched.	YES	Change 2nd image transfer roller unit.
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 unit.

16.3.21 Printer 4-color: colored spots

A. Typical faulty images



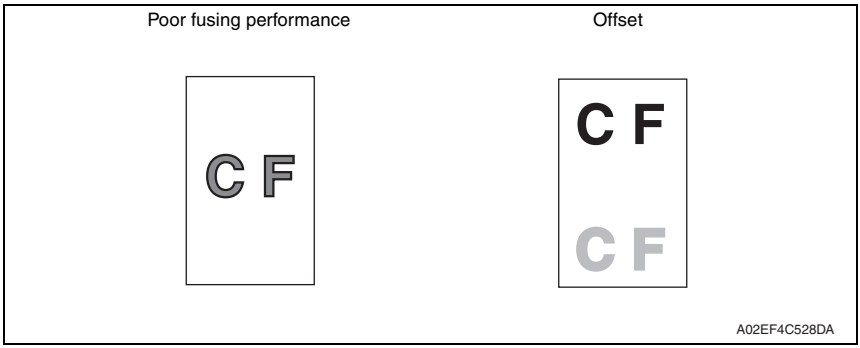
A02EF4C509DA

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 unit	Fingerprints, oil, or other foreign matter is evident on the image transfer belt.	YES	Clean.
3		Transfer belt is dirty or scratched.	YES	Clean dirty belt with a soft cloth. Change transfer belt unit if belt is damaged.
4	Transfer roller unit	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 unit.

16.3.22 Printer 4-color: poor fusing performance, offset

A. Typical faulty images



B. Troubleshooting procedure

Step	Section	Check item	Result	Action
1	Paper	Paper type does not match.	YES	Change the setting.
2	Service Mode → MachineAdjustment → FusingTemperature	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.

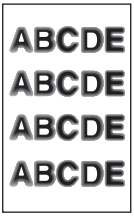
16.3.23 Printer 4-color: brush effect, blurred image

A. Typical faulty images

Brush effect



Blurred image



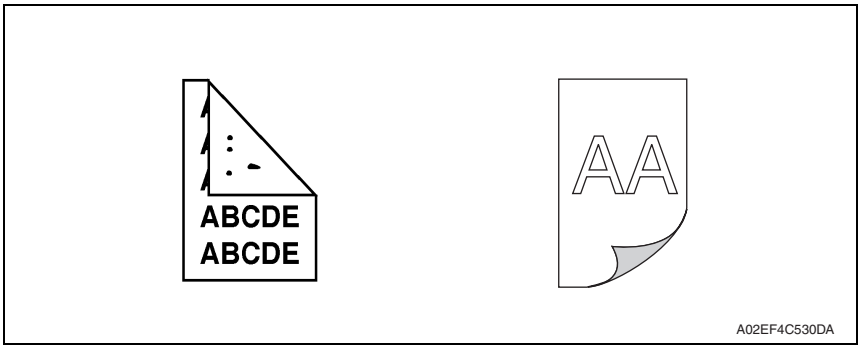
A02EF4C529DA

B. Troubleshooting procedure

Step	Section	Check item	Result	Action
1	Paper	Paper is damp.	YES	Change paper to one just unwrapped from its package.
2		Paper type does not match.	YES	Change the setting.
3	Fusing unit	Fusing unit is installed properly.	NO	Reinstall.
4		Fusing entrance guide plate is dirty.	YES	Clean.
5		Fusing belt is dirty or scratched.	YES	Change fusing unit.
6	Service Mode → MachineAdjust-met → Fusing Speed	Changing fusing speed eliminates the problem of brush effect and blurred image.	YES	Readjust fusing transport speed.

16.3.24 Printer 4-color: back marking

A. Typical faulty images



B. Troubleshooting procedure

Step	Section	Check item	Result	Action
1	2nd image transfer roller unit	Image transfer roller is scratched or dirty.	YES	Change transfer roller unit.
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 unit	Fingerprints, oil, or other foreign matter is evident on the transfer belt.	YES	Clean.
6		The problem has been eliminated through the checks of steps up to 5.	NO	Change transfer belt unit. → Change high voltage unit.

16.3.25 Printer 4-color: uneven image

A. Typical faulty images



A02EF4C525DA

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	Toner cartridge	There is any stain or breakage on the drive section of the toner cartridge.	YES	Clean/replace the toner cartridge.
4	Imaging unit	There is any stain, damage or abrasion on the PC drum.	YES	Replace the imaging unit.
5	Transfer roller unit	There is any stain, damage, deformation or abrasion on the transfer roller.	YES	Replace the transfer roller unit.
6	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.
7		The problem has been eliminated through the check of step 6.	NO	Replace the transfer belt unit.

17. Controller trouble

17.1 Unable to print over the network

17.1.1 The “RIP” is displayed on the machine control panel.

Step	Check	Result	Action
1	An error on machine side (Paper running out, toner running out, etc.)	Yes	Correct the error.
2	Waiting its turn	Yes	Check the machine control panel for jobs in print queue. Priority may be changed as necessary
3	The job is locked.	Yes	Enter the password to unlock the job.
4	The correct division ID has not been entered.	Yes	Enter the correct division ID in the printer driver and try re-transmitting the job again.(account code)

17.1.2 The “RIP” is not displayed on the machine control panel.

Step	Check	Result	Action
1	The response of ping sent from the PC to the machine.	No	Go to item 5.
2	The print destination port setting is wrong.	Yes	Set the correct port.
3	PC operates erratically temporarily.	Yes	Restart the PC
4	Printer driver incorrectry installed.	No	Uninstall the printer driver through the proper steps and then reinstall it properly.
5	The power on the machine turns OFF/ON and operates normally.	Yes	No process is necessary. Only a temporally malfunction.
6	Network cable is disconnected or a relay device is faulty.	No	Reconnect the cable and restart or change the faulty relay device.
7	IP address and/or subnet mask incorrectly set.	No	Set the correct IP address and subnet mask.

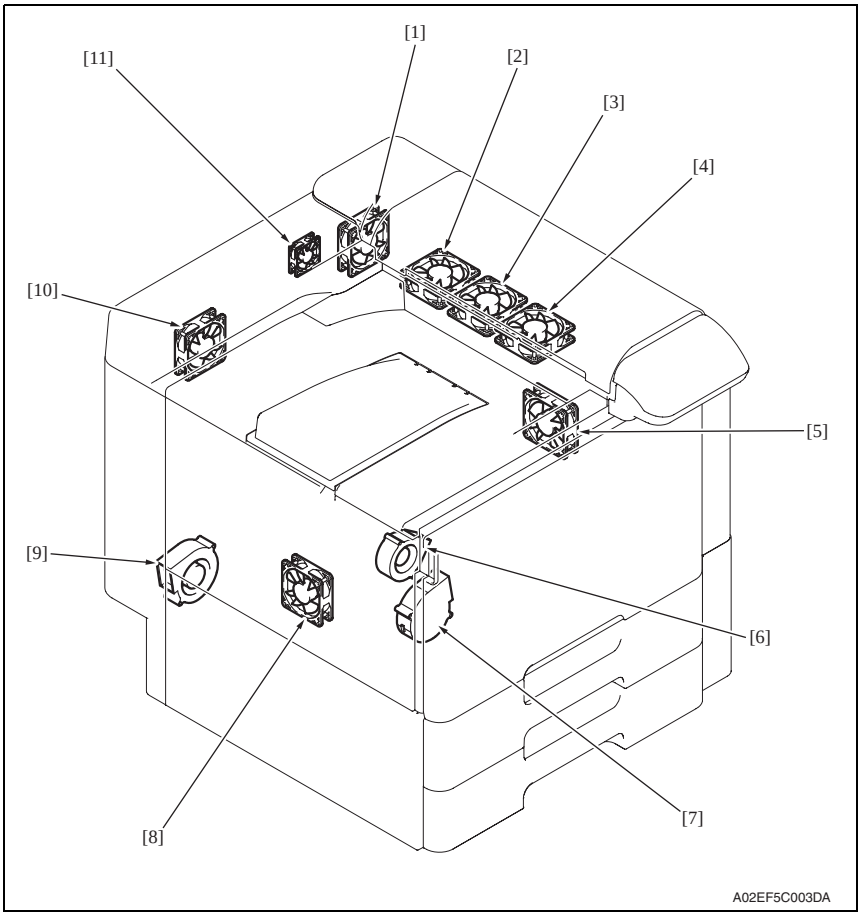
Blank Page

Appendix

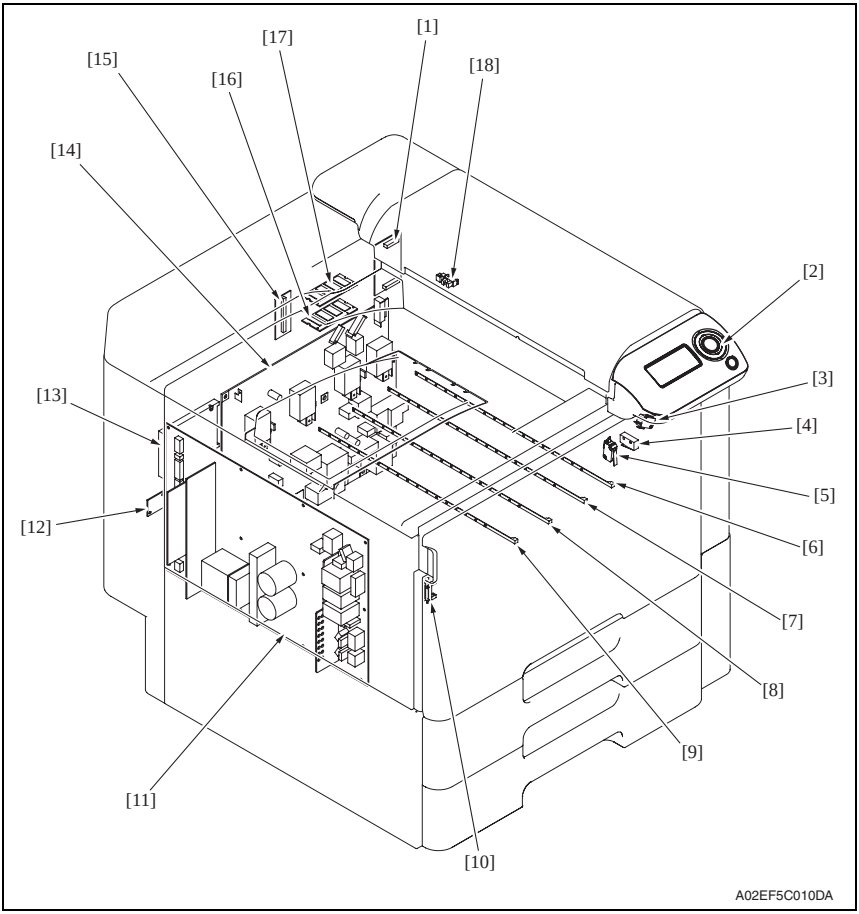
18. Parts layout drawing

18.1 Main body

18.1.1 Engine section

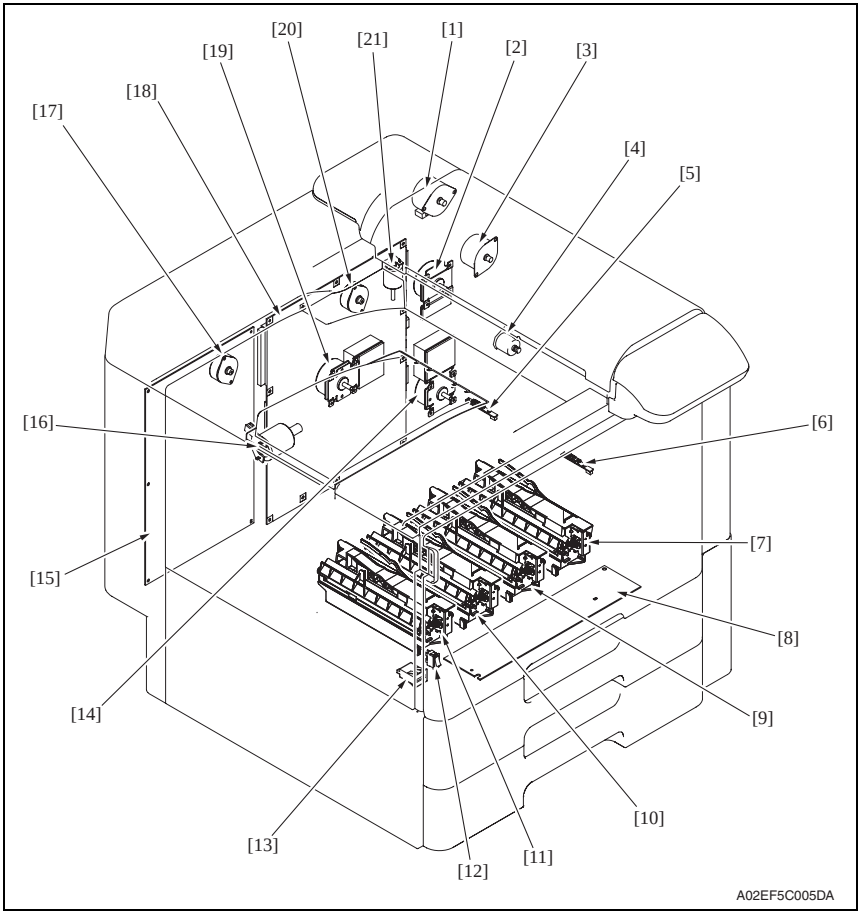


[1] Paper cooling fan motor (FM7)
[2] Fusing cooling fan motor/2 (FM10)
[3] Fusing cooling fan motor/3 (FM11) *
[4] Fusing cooling fan motor/1 (FM9)
[5] Suction fan motor (FM8)
[6] Toner suction fan motor (FM3)
[7] Cooling fan motor/1 (FM1)
[8] Power supply cooling fan motor (FM5)
[9] Exhaust fan motor (FM4)
[10] Cooling fan motor/2 (FM2)
[11] MFP board cooling fan motor (FM6)

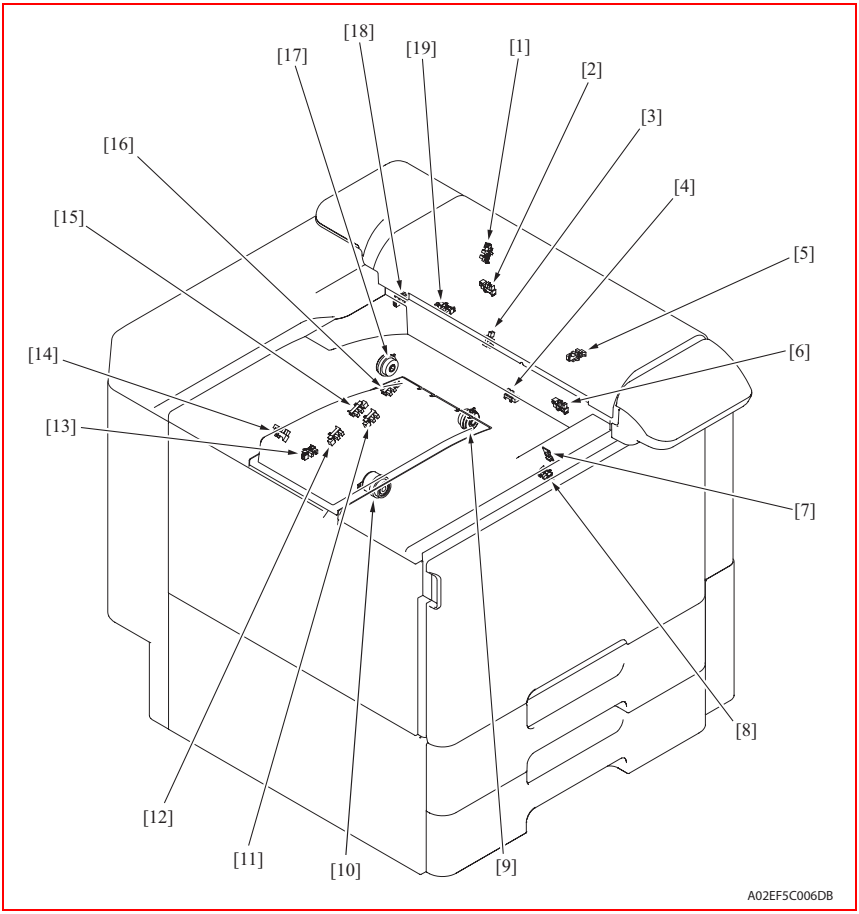


[1] NVRAM board (NRB)
[2] Operation board (OB)
[3] Right door switch (S5)
[4] Front door switch/1 (S3)
[5] Front door switch/2 (S4)
[6] Erase lamp/K (EL/K)
[7] Erase lamp/C (EL/C)
[8] Erase lamp/M (EL/M)
[9] Erase lamp/Y (EL/Y)
[10] Waste toner full sensor (PS32)
[11] DC power supply (DCPU)
[12] Service EEPROM board (SV ERB)
[13] Hard disk (HDD) *1
[14] High voltage unit (HV)
[15] JMP board (JMPB)
[16] SO DIMM/1 (SO DIMM/1)
[17] SO DIMM/2 (SO DIMM/2)
[18] Paper full sensor (PS39)

*1: Option



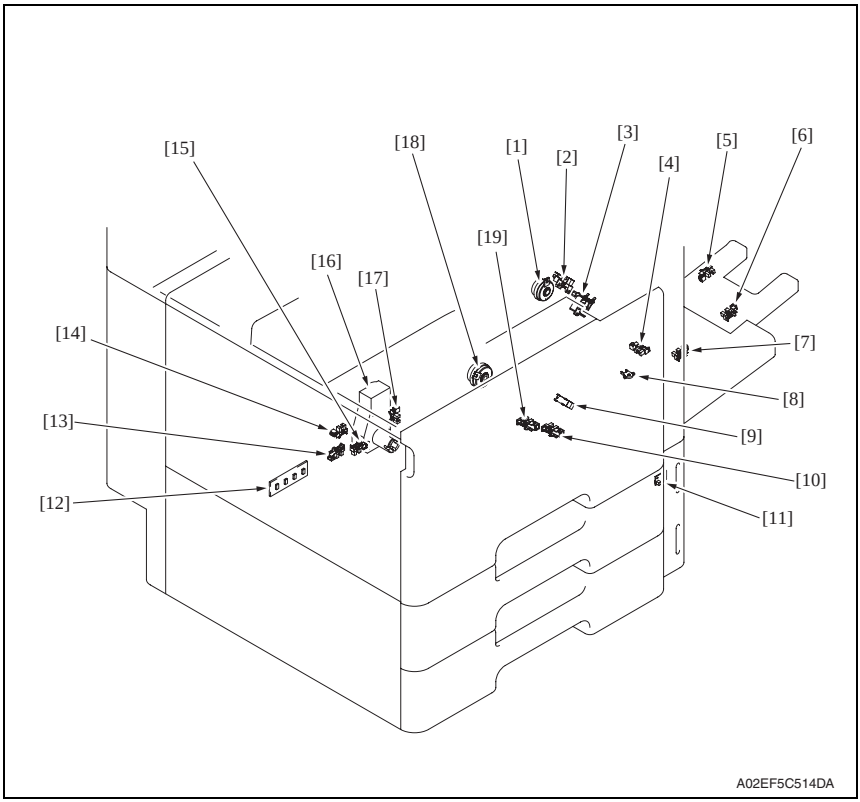
[1] Switchback motor (M6)
[2] Fusing motor (M5)
[3] Duplex transport motor (M7)
[4] 2nd image transfer retraction motor (M11)
[5] IDC registration sensor/YC (IDCS/YC)
[6] IDC registration sensor/MK (IDCS/MK)
[7] PH unit/K
[8] PH relay board (PHREYB)
[9] PH unit/C
[10] PH unit/M
[11] PH unit/Y
[12] Main power switch (S1)
[13] Total counter (TCT)
[14] Transport motor (M1)
[15] Printer control board (PRCB)
[16] Color dev. unit engaged motor (M10)
[17] Toner supply motor/YM (M4)
[18] MFP board (MFPB)
[19] Color PC motor (M2)
[20] Toner supply motor/CK (M3)
[21] Fusing retraction motor (M12)



[1]	Duplex paper passage sensor/1 (PS33)	[11]	~~Color PC drive main sensor (PS27)~~ Black PC drive main sensor (PS29)
[2]	Duplex door sensor (PS35)	[12]	~~Transfer belt retraction clutch (CL7)~~ Color PC drive main sensor (PS27)
[3]	Duplex paper passage sensor/2 (PS34)	[13]	Transfer belt retraction sensor (PS31)
[4]	2nd image transfer welding alienation sensor (PS36)	[14]	Color dev. unit engaged position sensor (PS26)
[5]	Fusing retraction sensor (PS37)	[15]	Color PC drive sub sensor (PS28)
[6]	Fusing loop detect sensor (PS24)	[16]	Black PC drive sub sensor (PS30)
[7]	Temperature/humidity sensor (TEM/HUM)	[17]	~~Tim. roller clutch (CL6)~~ Transfer belt retraction clutch (CL7)
[8]	Sensor in front of tim. roller (PS23)	[18]	Fusing roller retraction sensor (PS38)
[9]	~~Developing clutch/K (CL5)~~ Tim. roller clutch (CL6)	[19]	Paper exit sensor (PS25)

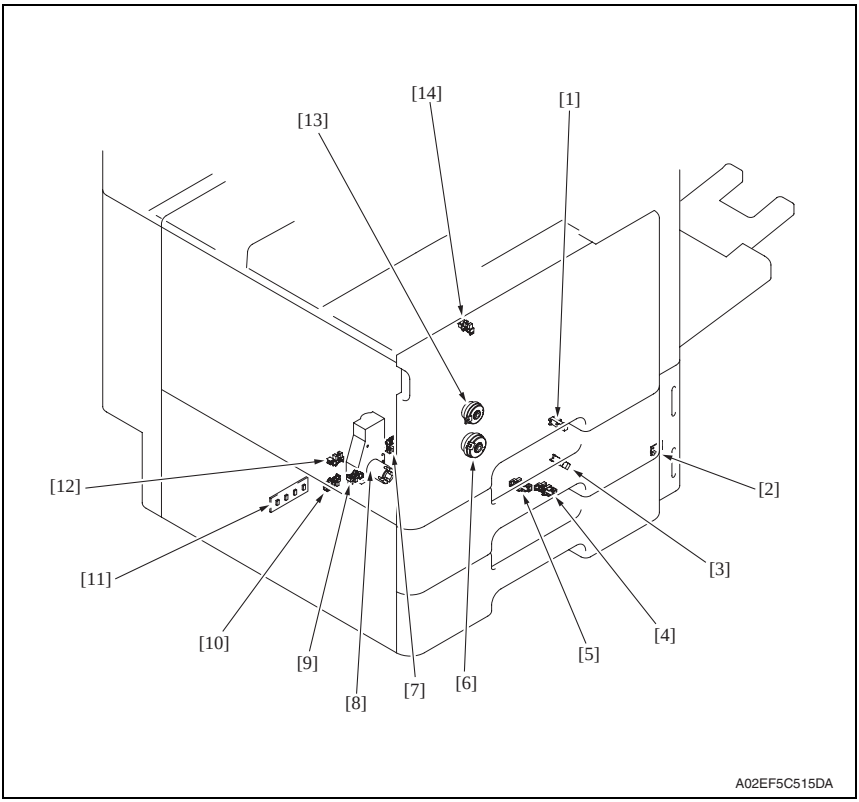
[10] ~~Black PC drive main sensor (PS29)~~
Developing clutch/K (CL5)

18.1.2 Tray 1, Tray 2



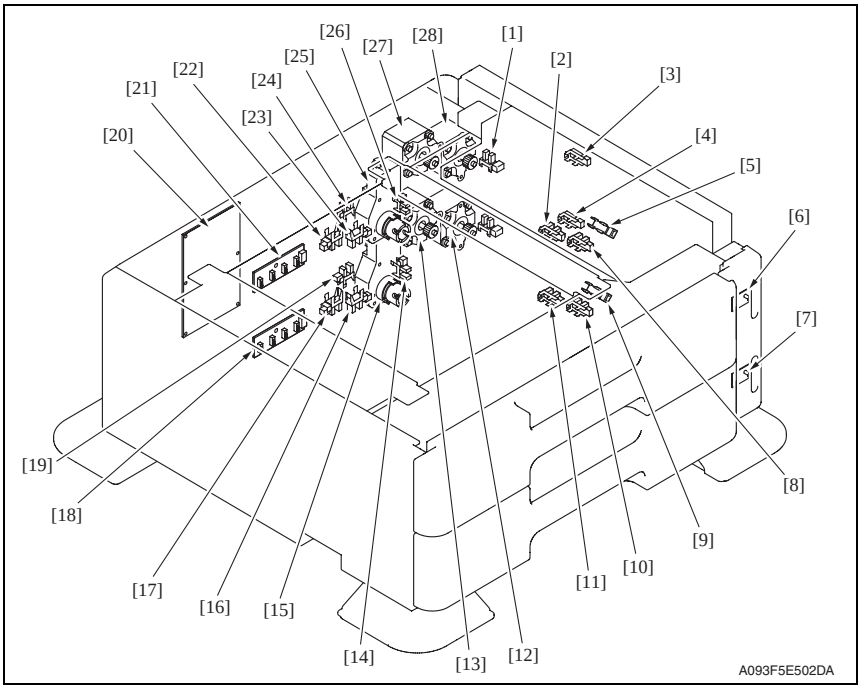
[1]	Paper feed tray 1 paper feed clutch (CL4)	[11]	Paper feed tray 2 paper empty indicator board (PEIB/1)
[2]	Paper feed tray 1 lift-up position sensor (PS17)	[12]	Paper feed tray 2 paper FD size detect board (PSDTB/1)
[3]	Paper feed tray 1 pick-up solenoid (SL1)	[13]	Paper feed tray 2 paper CD size detect sensor/2 (PS6)
[4]	Paper feed tray 1 paper empty sensor (PS21)	[14]	Paper feed tray 2 device detection sensor (PS2)
[5]	Paper feed tray 1 multi FD size sensor/3 (PS20)	[15]	Paper feed tray 2 paper CD size detect sensor/1 (PS5)
[6]	Paper feed tray 1 multi FD size sensor/2 (PS19)	[16]	Paper feed tray 2 lift-up motor (M8)
[7]	Paper feed tray 1 multi FD size sensor/1 (PS18)	[17]	Paper feed tray 2 near empty sensor (PS4)
[8]	Paper feed tray 1 CD size sensor (PS22)	[18]	Paper feed tray 2 paper feed clutch (CL1)
[9]	Paper feed tray 2 chain feed sensor (PS1)	[19]	Paper feed tray 2 upper limit sensor (PS8)
[10]	Paper feed tray 2 paper empty sensor (PS7)		

18.1.3 Tray 3



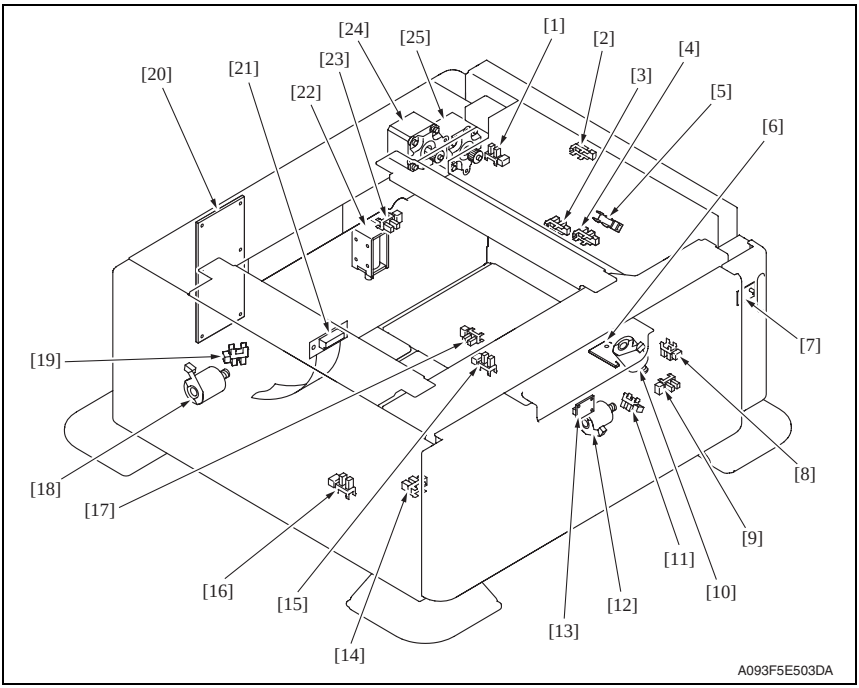
[1]	Paper feed tray 3 vertical transport sensor (PS16)	[8]	Paper feed tray 3 lift-up motor (M9)
[2]	Paper feed tray 3 paper empty indicator board (PEIB/2)	[9]	Paper feed tray 3 paper CD size detect sensor/1 (PS11)
[3]	Paper feed tray 3 paper feed sensor (PS14)	[10]	Paper feed tray 3 paper CD size detect sensor/2 (PS12)
[4]	Paper feed tray 3 paper empty sensor (PS13)	[11]	Paper feed tray 3 paper FD size detect board (PSDTB/2)
[5]	Paper feed tray 3 upper limit sensor (PS15)	[12]	Paper feed tray 3 device detection sensor (PS10)
[6]	Paper feed tray 3 paper feed clutch (CL2)	[13]	Paper feed tray 3 vertical transport clutch (CL3)
[7]	Paper feed tray 3 near empty sensor (PS9)	[14]	Paper feed tray 3 door sensor (PS3)

18.2 PC-106/205 (option)



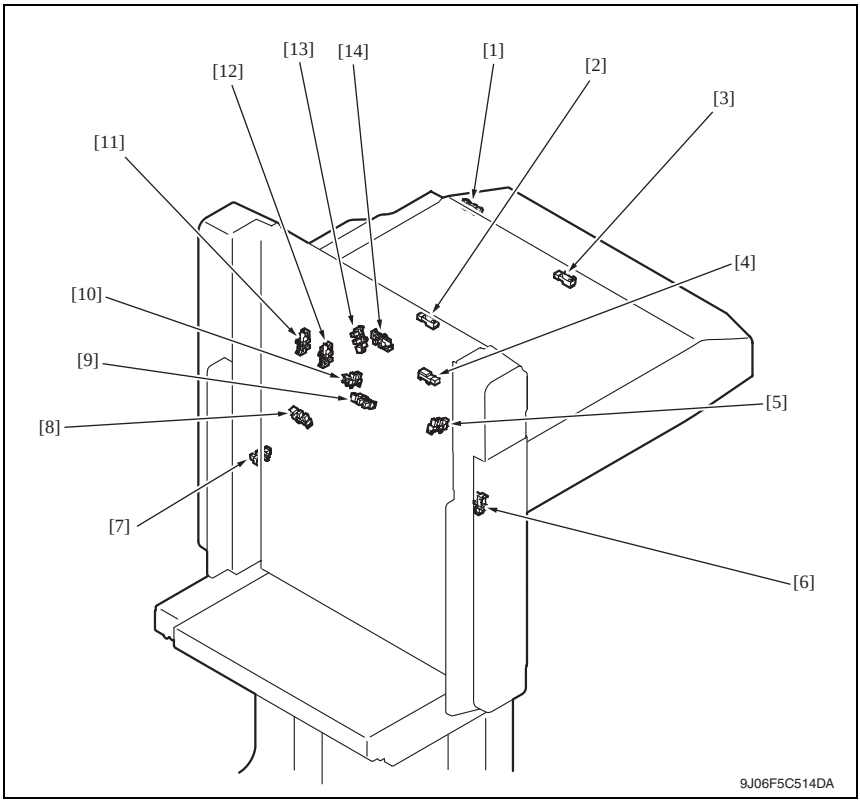
[1] Tray4 door set sensor (PS111)
[2] Tray4 upper limit sensor (PS114)
[3] Tray4 vertical transport sensor (PS117)
[4] Tray5 vertical transport sensor (PS126)
[5] Tray4 paper feed sensor (PS116)
[6] Paper feed tray4 paper empty indicator board (PEIB/1)
[7] Paper feed tray5 paper empty indicator board (PEIB/2)
[8] Tray4 empty sensor (PS115)
[9] Tray5 paper feed sensor (PS125)
[10] Tray5 empty sensor (PS124)
[11] Tray5 upper limit sensor (PS123)
[12] Tray5 vertical transport motor (M121)
[13] Tray5 paper feed motor (M123)
[14] Tray5 near empty sensor (PS122)
[15] Tray5 lift-up motor (M125)
[16] Tray5 CD paper size sensor/2 (PS128)
[17] Tray5 CD paper size sensor/1 (PS127)
[18] Tray5 paper size detect board/2 (PSDTB/2)
[19] Tray5 device detection sensor (PS121)
[20] PC Control board (PCCB)
[21] Tray4 paper size detect board/1 (PSDTB/1)
[22] Tray4 CD paper size sensor/1 (PS118)
[23] Tray4 CD paper size sensor/2 (PS119)
[24] Tray4 device detection sensor (PS112)
[25] Tray4 lift-up motor (M124)
[26] Tray4 near empty sensor (PS113)
[27] Tray4 paper feed motor (M122)
[28] Tray4 vertical transport motor (M120)

18.3 PC-406 (option)

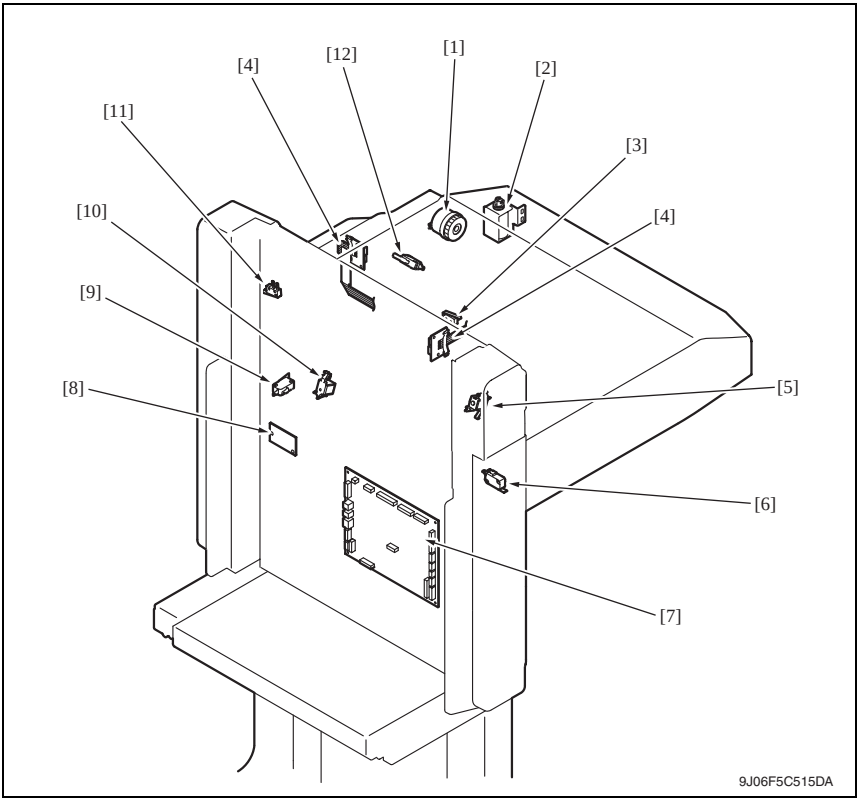


[1] Door sensor (PS5)
[2] Vertical transport sensor (PS2)
[3] Lift-up upper sensor (PS4)
[4] Paper empty sensor (PS3)
[5] Paper feed sensor (PS1)
[6] Main tray paper empty board (MTPEB)
[7] Paper feed tray4 paper empty indicator board (PEIB/1)
[8] Elevator motor pulse sensor (PS10)
[9] Lower over run sensor (PS7)
[10] Elevator motor (M5)
[11] Shift motor pulse sensor (PS8)
[12] Shift motor (M4)
[13] Manual down control board (MDCB)
[14] Shift tray empty sensor (PS9)
[15] Shift tray stop sensor (PS11)
[16] Shift tray home sensor (PS12)
[17] Lift-up lower sensor (PS13)
[18] Division board position motor (M3)
[19] Division board position sensor (PS14)
[20] PC control board (PCCB)
[21] Relay board (REYB)
[22] Tray lock solenoid (SD1)
[23] Cassette open sensor (PS6)
[24] Paper feed motor (M1)
[25] Vertical transport motor (M2)

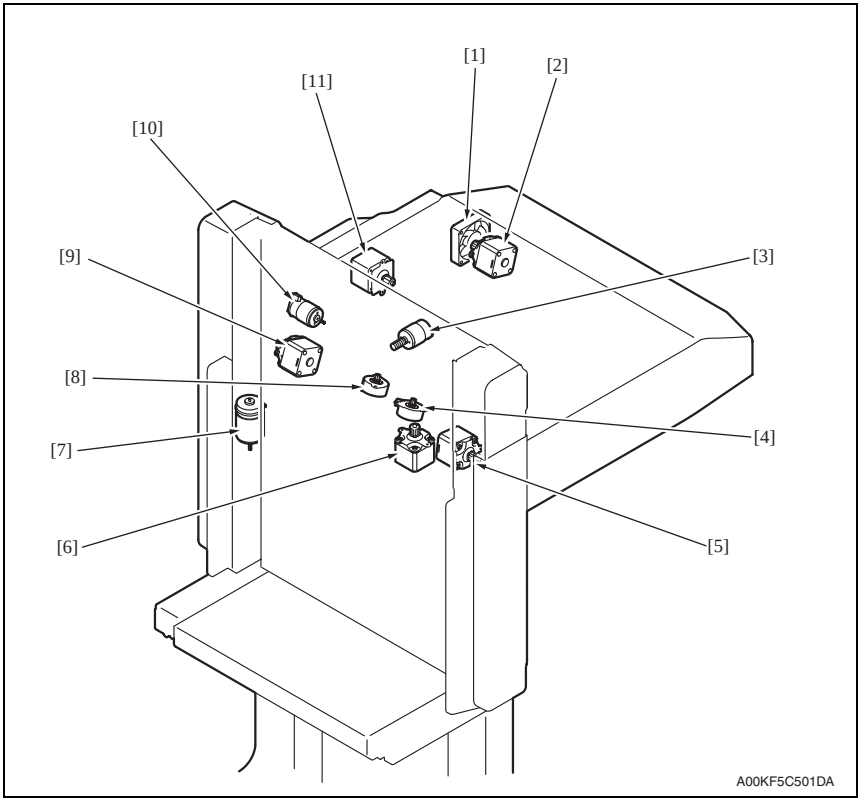
18.4 FS-519 (option)



[1] Entrance switch back sensor (PS4)
[2] Transport sensor (PS2)
[3] Entrance sensor (PS1)
[4] Storage tray detect sensor (PS3)
[5] Alignment home position sensor /2 (PS8)
[6] Elevator tray home position sensor (PS11)
[7] Elevator tray lower limit sensor (PS13)
[8] Elevator top face detection sensor (PS12)
[9] Exit paddle home position sensor (PS6)
[10] Alignment home position sensor /1 (PS7)
[11] Stapler save position sensor (PS10)
[12] Staple home position sensor (PS9)
[13] Shutter home position sensor (PS14)
[14] Exit roller home position sensor (PS5)

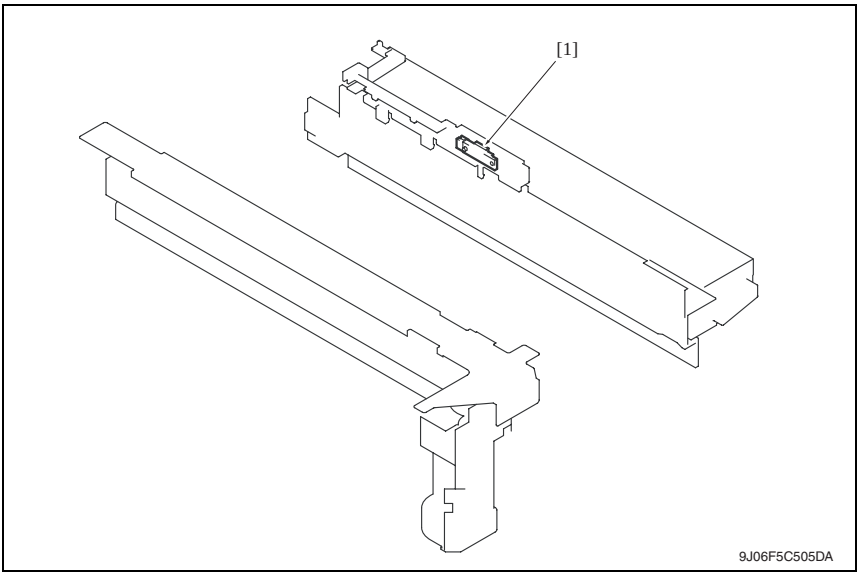


[1] Skew registration clutch (CL1)
[2] Duplex guide solenoid (SD3)
[3] Shutter detect switch (SW2)
[4] Relay board/2 (REYB/2)
[5] Storage paddle solenoid (SD1)
[6] Front door switch (SW1)
[7] FS control board (FSCB)
[8] Relay board/1 (REYB/1)
[9] Slide switch (SW4)
[10] Exit paddle solenoid (SD2)
[11] Elevator tray switch (SW3)
[12] Middle guide switch (SW5)



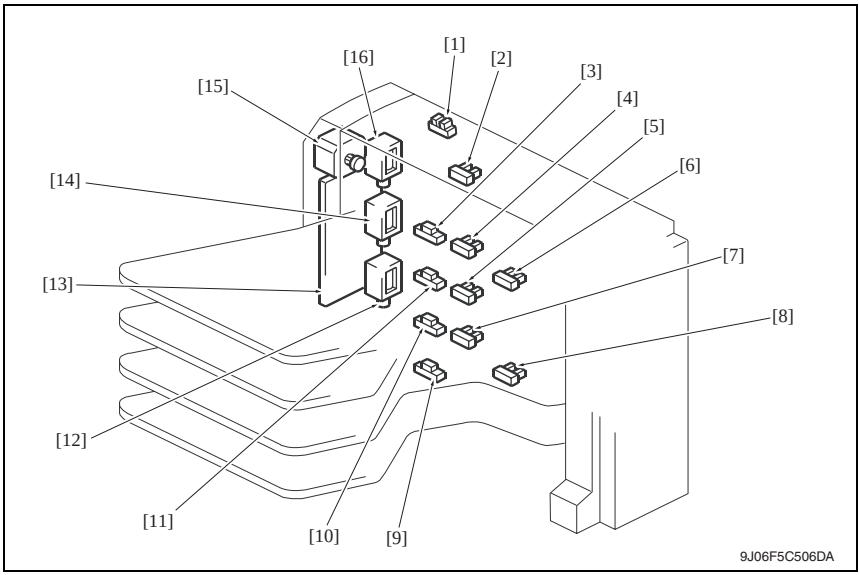
[1] Cooling fan motor (FM9)
[2] Entrance motor (M1)
[3] Exit roller motor (M10)
[4] Align motor/2 (M6)
[5] Exit motor (M4)
[6] Stapling unit moving motor (M7)
[7] Elevator motor (M11)
[8] Align motor/1 (M5)
[9] Transport motor/2 (M3)
[10] Shutter motor (M8)
[11] Transport motor/1 (M2)

18.5 PK-515 (option)



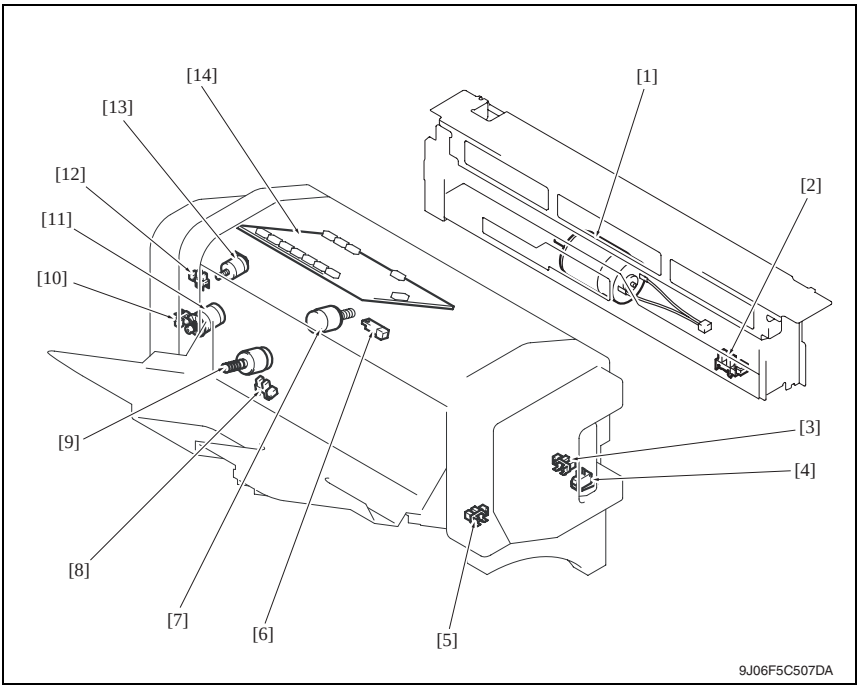
[1] Punch trash full sensor (PS30)

18.6 MT-502 (option)



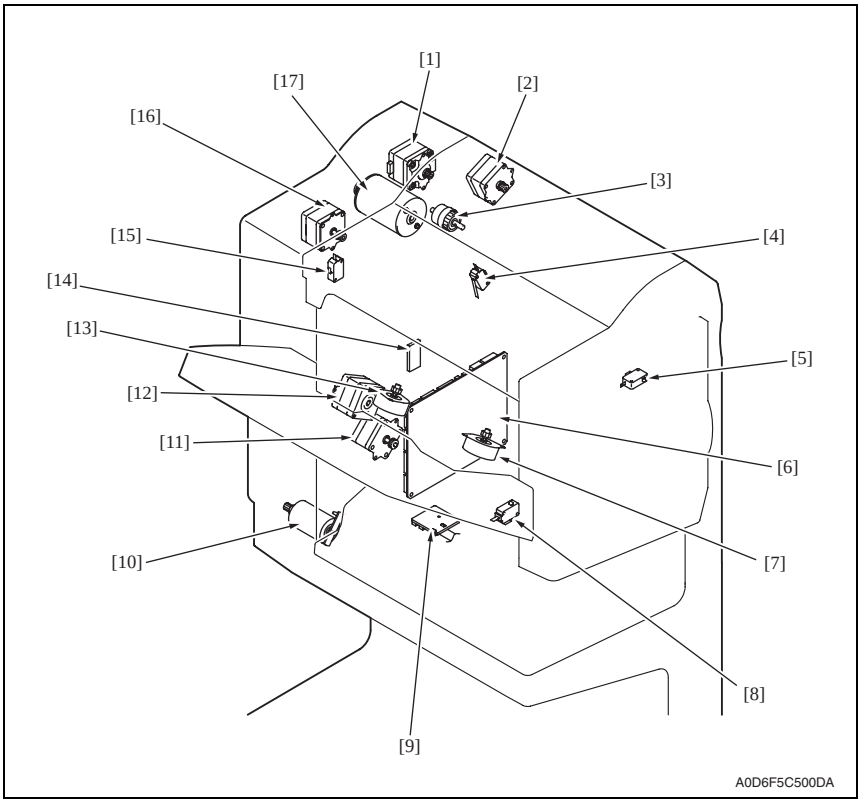
[1] Cover open/close sensor (PS11)
[2] Paper full detection sensor 4 (PS8)
[3] Paper detection sensor 4 (PS4)
[4] Paper full detection sensor 3 (PS7)
[5] Paper full detection sensor 2 (PS6)
[6] Upper transport sensor (PS9)
[7] Paper full detection sensor 1 (PS5)
[8] Lower transport sensor (PS10)
[9] Paper detection sensor 1 (PS1)
[10] Paper detection sensor 2 (PS2)
[11] Paper detection sensor 3 (PS3)
[12] Bin entrance switching solenoid 1 (SD1)
[13] MT control board (MTCB)
[14] Bin entrance switching solenoid 2 (SD2)
[15] Transport motor (M1)
[16] Bin entrance switching solenoid 3 (SD3)

18.7 SD-505 (option)

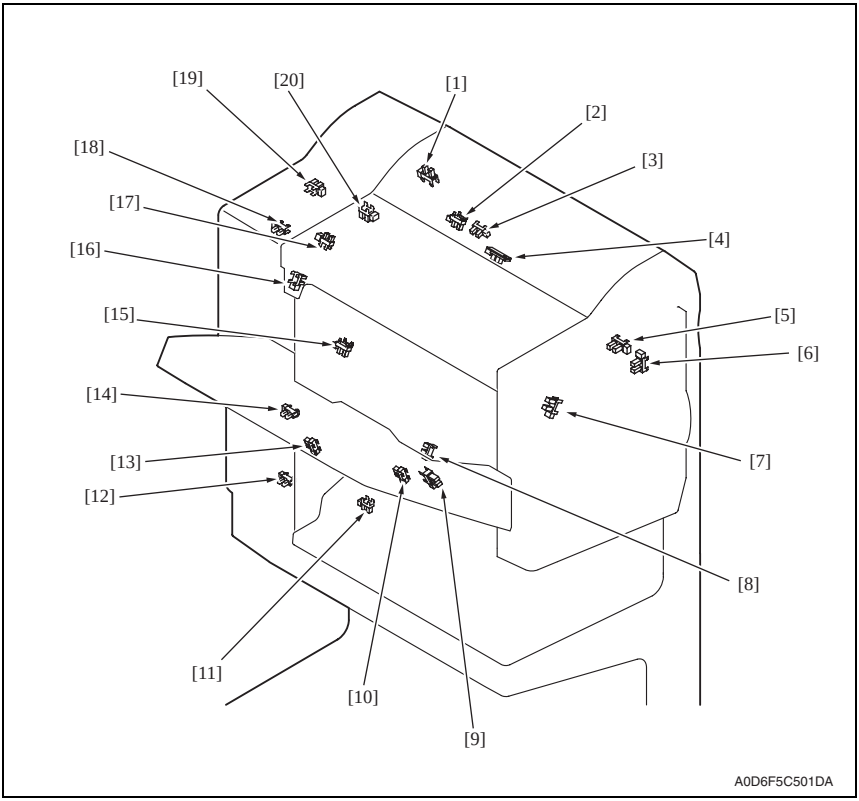


[1] Crease motor (M10)
[2] Crease roller home position sensor (PS22)
[3] Layable guide home sensor (PS24)
[4] Saddle opening switch (SW4)
[5] In & out guide home sensor (PS23)
[6] Saddle exit sensor (PS20)
[7] Layable guide motor (M14)
[8] Saddle tray empty sensor (PS21)
[9] In & out guide motor (M13)
[10] Transport pulse sensor (PS25)
[11] Saddle exit motor (M8)
[12] Saddle exit roller home position sensor (PS18)
[13] Saddle exit open/close motor (M9)
[14] SD control board (SDCB)

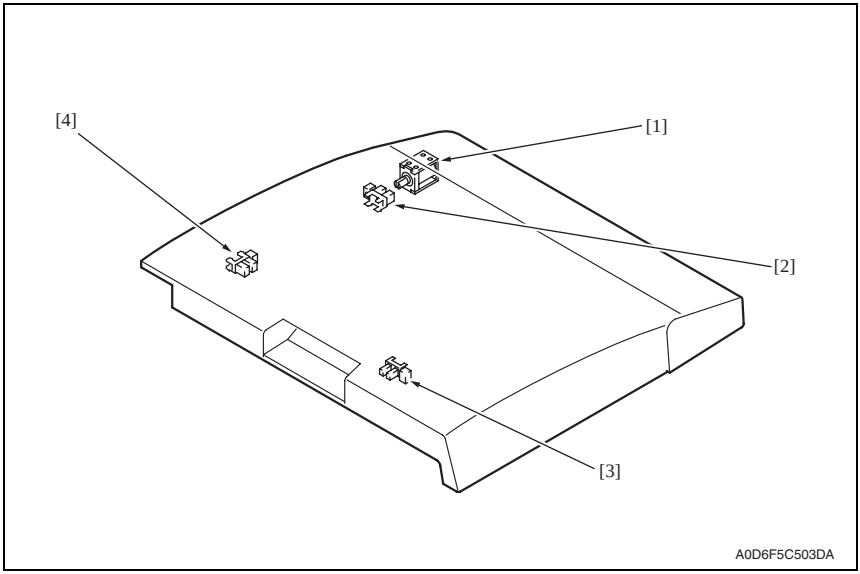
18.8 FS-609 (option)



[1] Transport motor (M1)
[2] Entrance motor (M9)
[3] Saddle clutch (CL1)
[4] Joint open switch (SW2)
[5] Front door open switch (SW1)
[6] Finisher control board (FSCB)
[7] Front aligning motor (M4)
[8] Stapler safely switch/F (SW4)
[9] Slide home position sensor (PS18)
[10] Lift motor (M6)
[11] Slide motor (M8)
[12] Exit motor (M3)
[13] Rear aligning motor (M5)
[14] EEPROM (ER)
[15] Stapler safely switch/R (SW3)
[16] Paddle motor (M2)
[17] Staple/folding motor (M7)

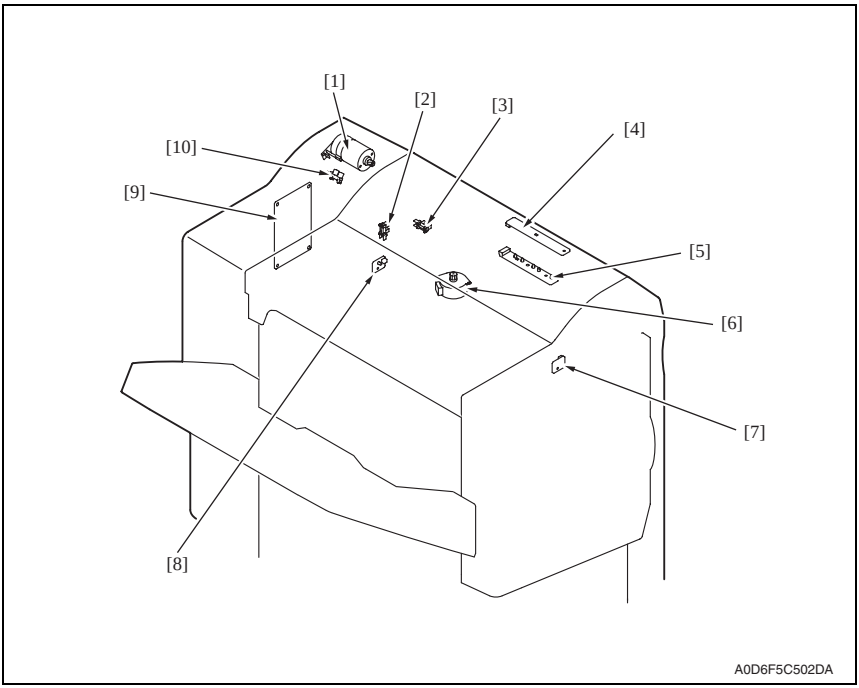


[1] Entrance sensor (PS1)
[2] Folding roller home position sensor (PS12)
[3] Folding home position sensor (PS11)
[4] Folding position sensor (PS10)
[5] Upper cover open sensor (PS23)
[6] Front door open sensor (PS22)
[7] Front aligning plate home position sensor (PS4)
[8] Finisher tray sensor (PS6)
[9] Exit tray sensor (PS8)
[10] Exit tray home position sensor (PS9)
[11] Saddle tray sensor (PS13)
[12] Lift motor clock sensor (PS17)
[13] Stack full sensor (PS24)
[14] Lift lower limit sensor (PS16)
[15] Exit belt home position sensor (PS7)
[16] Rear aligning plate home position sensor (PS5)
[17] Paddle home position sensor (PS2)
[18] Lift upper limit sensor (PS15)
[19] Staple/folding motor clock sensor (PS14)
[20] Bundle exit roller home position sensor (PS3)



[1] Entrance switching solenoid (SD1)
[2] Turnover empty sensor (PS27)
[3] Paper sensor (PS25)
[4] Horizontal unit door sensor (PS26)

18.9 PK-501 (option)



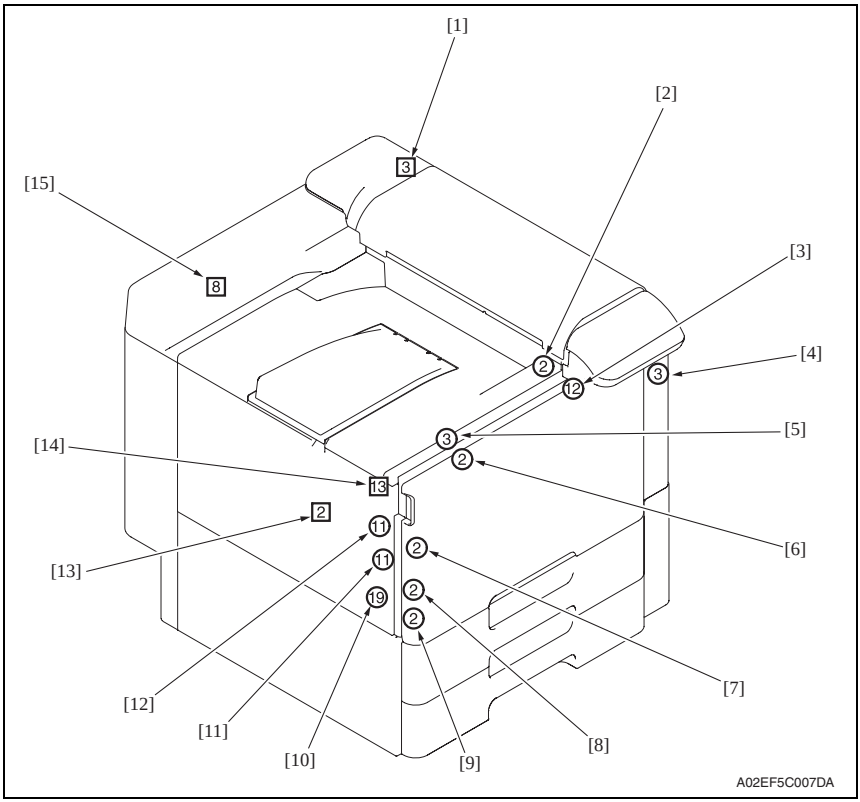
[1] Punch motor (M1)
[2] Side registration home sensor (PS2)
[3] Punch motor cock sensor (PS3)
[4] Photo sensor board (PSB)
[5] LED board (LEDB)
[6] Side registration motor (M2)
[7] Punch trash full LED board (PTFB/LED)
[8] Punch trash full photo sensor board (PTFB/PR)
[9] Punch control board (PKCB)
[10] Punch home position sensor (PS1)

19. Connector layout drawing

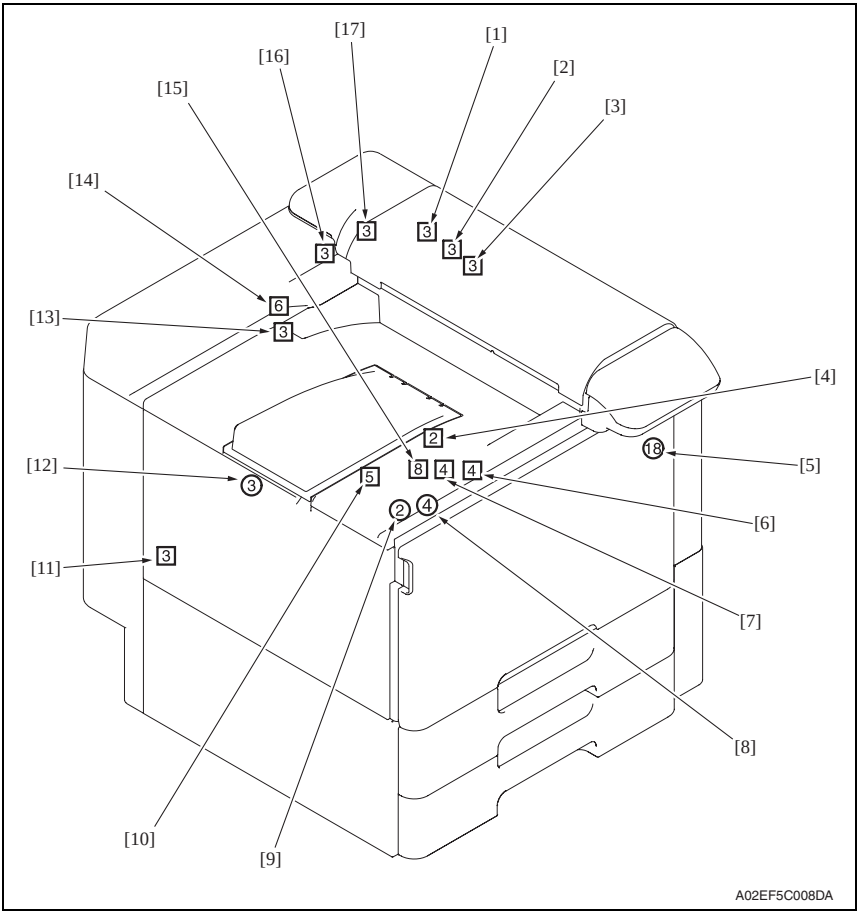
Description

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

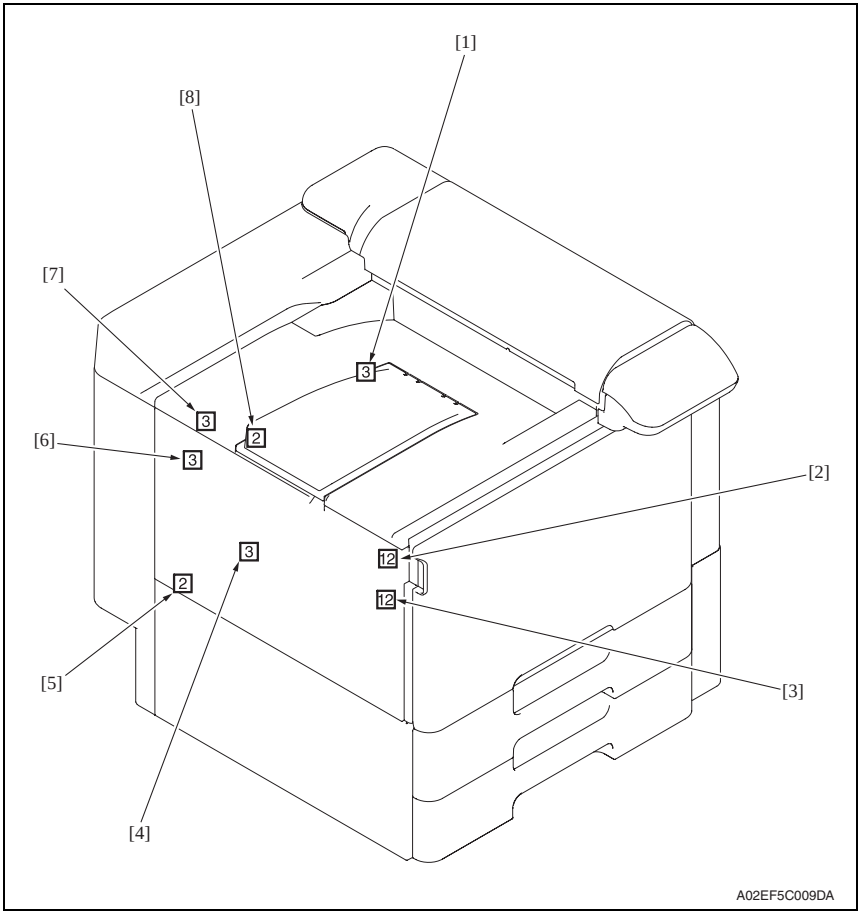
→ [1] Not possible to confirm by removing external cover.



No.	CN No.	Location	No.	CN No.	Location
[1]	CN10	E-6	[9]	CN15	D-11
[2]	CN2	E-1	[10]	CN13	E-9 to 10
[3]	CN4	E-2	[11]	CN11	E-8
[4]	CN8	D-5	[12]	CN7	E-5
[5]	CN5	E-3	[13]	CN9	E-6
[6]	CN3	E-1	[14]	CN6	E-3 to 4
[7]	CN12	D-9	[15]	CN39	J-8
[8]	CN14	D-11			



No.	CN No.	Location	No.	CN No.	Location
[1]	CN23	D-18	[10]	CN19	E-17 to 18
[2]	CN25	D-19	[11]	CN37	J-7 to 8
[3]	CN26	D-19	[12]	CN38	J-8
[4]	CN20	D-17	[13]	CN22	E-18
[5]	CN27	D-19 to 20	[14]	CN24	E-19
[6]	CN18	E-17	[15]	CN16	E-14
[7]	CN17	E-16	[16]	CN32	D-24
[8]	CN49	J-17	[17]	CN31	D-24
[9]	CN48	J-17			

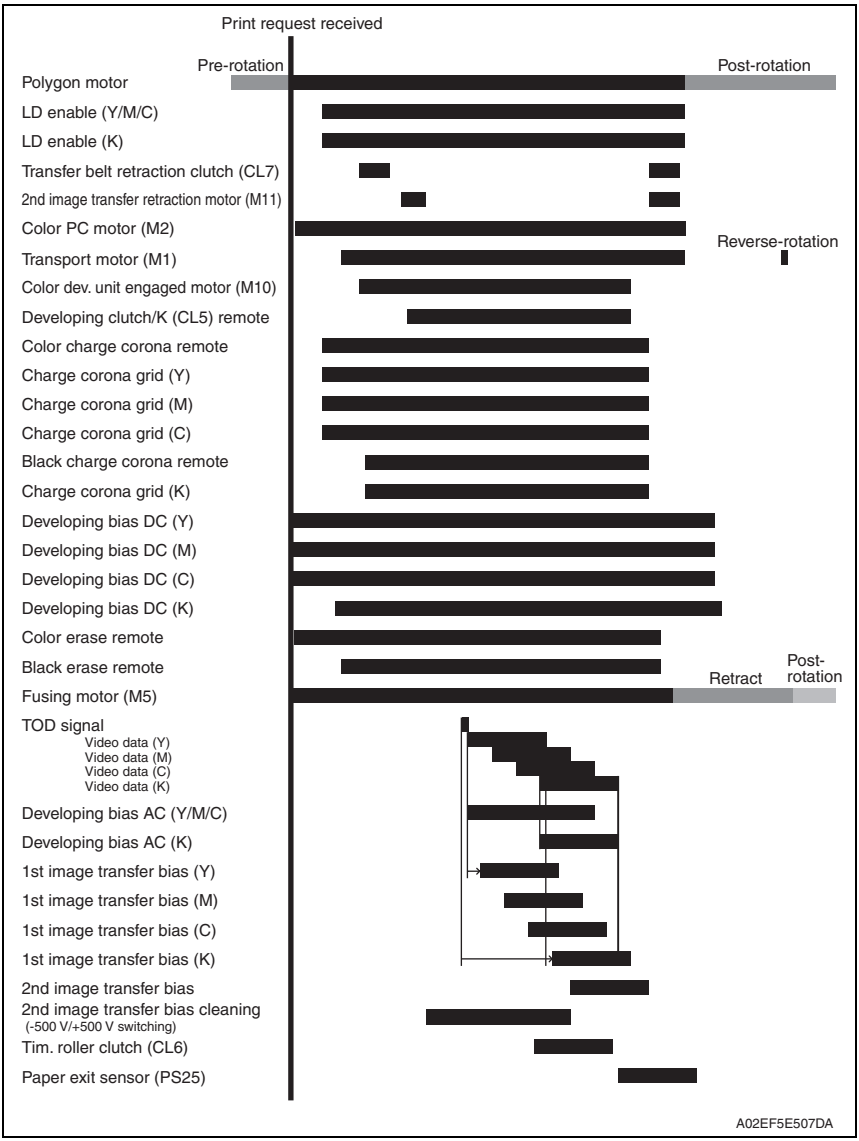


No.	CN No.	Location	No.	CN No.	Location
[1]	CN40	I-9	[5]	CN55	J-16
[2]	CN42	I-11	[6]	CN35	J-7
[3]	CN41	I-10	[7]	CN36	J-7
[4]	CN33	D-26 to 27	[8]	CN30	D-23

20. Timing chart

20.1 Main body

Color mode/A4 or 8 $^{1}/_{2}$ x 11/tray1



KONICA MINOLTA

SERVICE MANUAL

FIELD SERVICE

magicolor 8650 Standard controller

2007.11

KONICA MINOLTA BUSINESS TECHNOLOGIES, INC. Ver. 2.0

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 △1 to the left of the revised section.
  A number within △1 represents the number of times the revision has been made.

- To indicate clearly a section revised, show ▲1 in the lower outside section of the corresponding page.
  A number within ▲1 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
2007/11	2.0	△1	Description addition of function enhancement 1
2007/10	1.0	—	Issue of the first edition

CONTENTS

Standard controller

General

1. Controller specifications 1
1.1 Type 1
1.2 Supporting client specifications 2

Maintenances.

2. Firmware upgrade 3
2.1 Outline 3
2.2 Preparations for firmware rewriting by Windows Command Prompt 3
2.2.1 Service environment 3
2.2.2 Writing into the compact flash 3
2.3 Firmware rewriting by compact flash 6
2.3.1 Updating method 6
2.3.2 Action when data transfer fails 8
2.4 Updating the firmware with the Internet ISW 9
2.4.1 Outline 9
2.4.2 Service environment 9
2.4.3 Preparations for firmware rewriting 9
2.4.4 Firmware update procedure 12
2.4.5 Error code list for the Internet ISW 14
2.5 Firmware update by customer 17
2.5.1 Outline 17

Troubleshooting

3. Checking the system configuration 19
4. Status codes 19
5. Troubleshooting procedures 19
5.1 Unable to print over the network. 19

Blank Page

General

1. Controller specifications

1.1 Type

Type	Built-in type controller	
Print speed	35 prints/min (color/monochrome, A4 or 8 $^1/_2$ x 11 or Letter, 1-sided)	
First print time	5.9 sec. or less (monochrome, A4 or 8 $^1/_2$ x 11 or Letter)	
Resolution	Data processing	600 x 600 dpi
	Printing	Equivalent to 1800 dpi in main scanning direction x 600 dpi in sub scanning direction
Printer language	PCL5e/c emulation PCL XL Ver. 2.1 emulation PostScript 3 emulation (3016) XPS Ver. 1.0	
RAM	1024 MB	
Hard Disk	60 GB (Option)	
Host interface	Ethernet (10Base-T/100Base-TX/1000Base-T) USB 2.0/1.1	
Network protocol	TCP/IP(IPv4/IPv6), BOOTP, ARP, ICMP, DHCP, AutoIP, SNMP, FTP, LPR/LPD, RAW Socket, SMB over TCP/IP, IPP, HTTP, POP, SMTP, LDAP, NTP, SSL, IPX/SPX, AppleTalk, Bonjour, NetBEUI, WSD, IPsec, DNS, DynamicDNS	
Network print service	Pserver (NDS) ... NetWare 4.x, 5.x, 6.x Pserver (Bindery) ... NetWare 4.x NDPS ... NetWare 5.x, 6.x SMB, RAW port printing IPP 1.1 LPD	
Driver	PCL6 printer driver	• Windows NT4.0 (SP6a or later) • Windows 2000 Professional (SP3 or later) • Windows XP Home Edition/Professional • Windows XP Professional x64 • Windows Vista Home Basic /Home Premium /Ultimate /Business /Enterprise, Windows Vista Home Basic/ Home Premium /Ultimate /Business /Enterprise x64 edition • Windows Server 2003, Windows Server 2003 x64
	PS3 printer driver	• Windows 2000 Professional (SP3 or later) • Windows XP Home Edition/Professional • Windows XP Professional x64, • Windows Vista Home Basic /Home Premium /Ultimate /Business /Enterprise, Windows Vista Home Basic/ Home Premium /Ultimate /Business /Enterprise x64 edition • Windows Server 2003, Windows Server 2003 x64
Driver	PostScript PPD driver	• Macintosh OS 9.2 or later • Macintosh OS X 10.2.8/10.3/10.4
Utility	PageScope Web Connection	
Compatible paper size	Max. standard paper size A3 Wide (Long size paper: Width 210 mm to 297 mm x Legth 457.3 mm to 1200 mm)	
Operating environmental requirements	10 to 30 °C (50 to 86 °F) 15 to 85 %	

Fonts	PCL	Latin 80 fonts
	PS	Latin 137 fonts

1.2 Supporting client specifications

PC	IBM PC and its compatible, Macintosh		
OS	Server	Windows NT4.0 SP6/2000 SP3/2003 Server/2003 Server 64 bit/XP 64 bit	
	Client	Windows NT4.0 SP6/2000 SP3/XP/XP 64 bit Macintosh OS 9.2 or later, OS X 10.2, 10.3, 10.4 Macintosh OS 10.4 Intel	
Interface	With a network connection	Connection method	Ethernet 10Base-T/100Base-TX/ 1000Base-T
		Protocols	TCP/IP, NetBEUI, IPX/SPX (NetWare 4.x, 5.x, 6.x)
	With a local connection	USB 2.0/1.1	
Browser	PageScope Web Connection Web browsers: Microsoft Internet Explorer 6 or later recommended (JavaScript enabled, Cookies enabled) Microsoft XML Parser MSXML3.X must be installed when using Internet Explorer 5.5. Netscape Navigator 7.02 or later (JavaScript enabled, Cookies enabled) Mozilla Firefox 1.0 or later (JavaScript enabled, Cookies enabled) Macromedia® Flash® (If “Flash” is selected in View Mode, version 7.0 or later plugin is required.)		

NOTE

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

Maintenances.

2. Firmware upgrade

2.1 Outline

- There are two ways to update the firmware: One is by directly connecting with the main body using the compact flash, and the other is by downloading over a network using the Internet ISW.
  In addition, customers can upgrade the firmware using [Firmware Update] in the administrator setting.

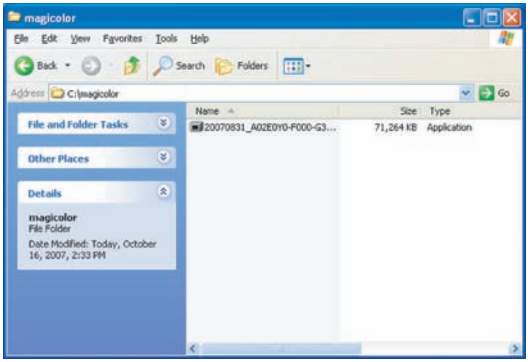
2.2 Preparations for firmware rewriting by Windows Command Prompt

2.2.1 Service environment

- OS: Windows 2000/XP
- Drive which enables writing/reading of compact flash
- Compact flash (service tool)

2.2.2 Writing into the compact flash

1. Put the data of firmware in the optional directory. (C:\magicolor in the below figure)

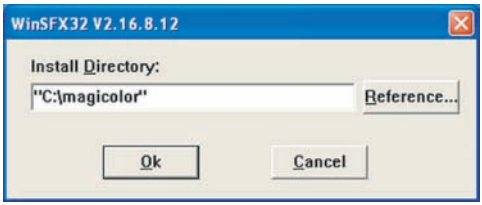


A02EF2C276DA

NOTE

- **The file name of firmware data consists of the “Release Date_Version_CHECKSUM-****.exe.”**

2. Double-click the firmware data, and specify the directory to be uncompressed, and then uncompress it.

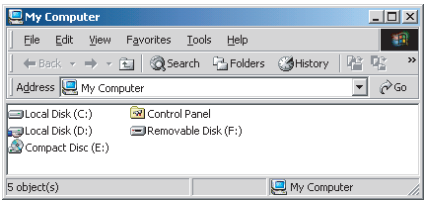


A02EF2C277DA

NOTE

- **When old firmware is still left in the specified directory to be uncompressed, delete it before uncompressing.**
- **When the firmware data is decompressed, "card_work" folder is created in the selected directory and the data is decompressed in this folder.**

3. Mount the compact flash on the PC, and check the drive name, which was recognized in the Windows. (F-drive in the following figure)

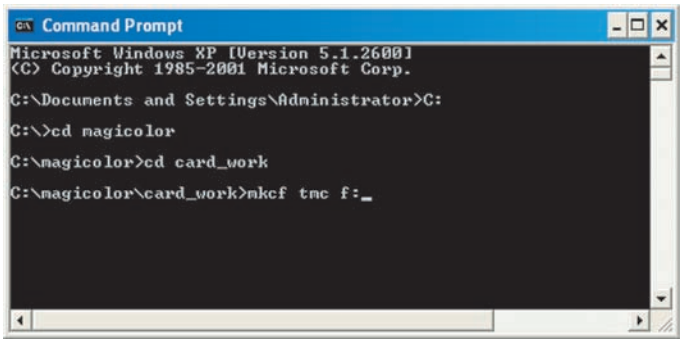


4036fs2623e0

4. Click [Start] → [Program] → [Accessories] → [Command Prompt] to open the command prompt.

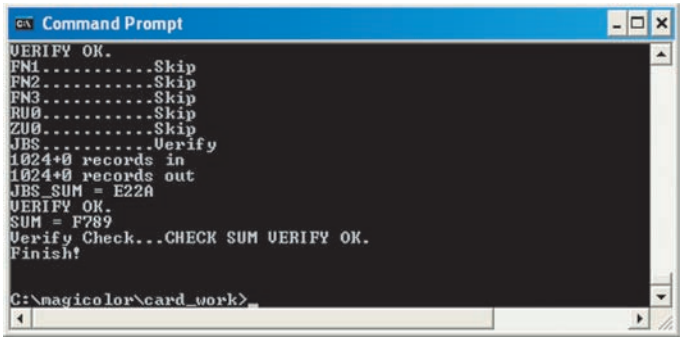
5. Use the command prompt to move into the uncompressed directory.

6. Specify the drive of compact flash, which was recognized through the procedure 3, and execute the “mkcf.bat.” (Input the C: \magicolor\card_work>mkcf tmc f (drive number): in the below figure, and push the “Enter”.)



A02EF2C278DA

7. Once the “mkcf.bat” is executed, data writing into the compact flash is started.
8. Upon completion of writing, CHECKSUM is executed. If CHECKSUM value is precisely matched, “VERIFY OK” appears.



A02EF2C279DA

9. Remove the compact flash from PC.

NOTE

- **When removing the compact flash, be sure to check if data is written as normal and then remove it according to the precise removing method.**

2.3 Firmware rewriting by compact flash

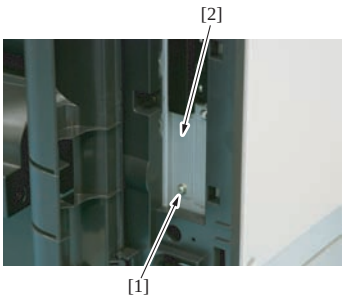
- The firmware is updated using the compact flash.

2.3.1 Updating method

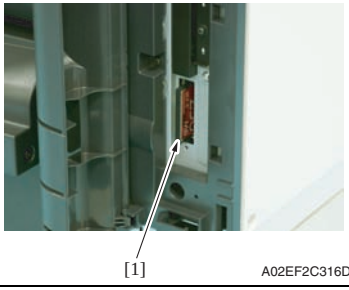
NOTE

- **NEVER remove or insert the compact flash card with the machine power turned ON.**

1. Turn OFF the power switch.
2. Open the rear right door.



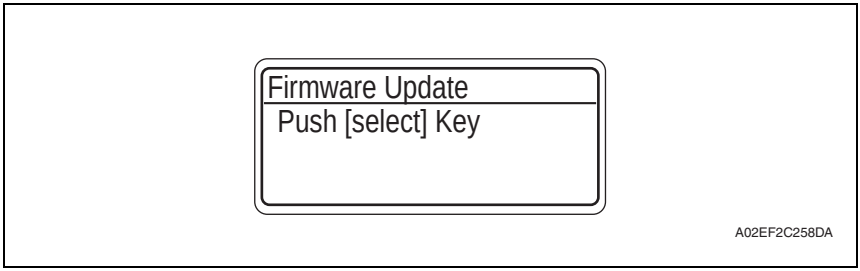
3. Remove the screw [1] and the metal blanking plate [2].



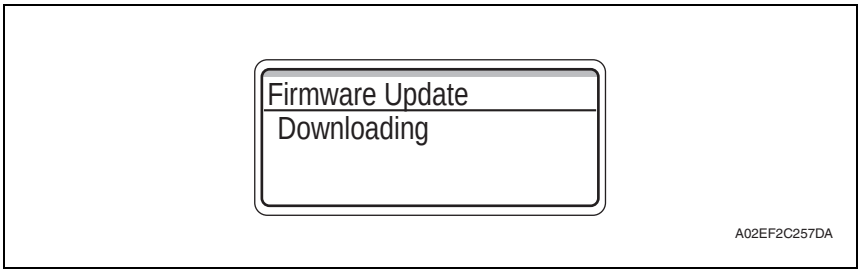
4. Insert the compact flash card [1] into the slot.

5. Turn ON the power switch.

6. Check the message and press the Menu/Select key to start the firmware rewrite.



7. While the firmware rewrite is in process, the following message appears and LED line blinks in blue.



8. On the control panel, check the message, Download Completed, which tells the firmware update has been completed successfully. (LED line lights up in blue.)
9. Turn OFF the power switch.
10. Remove the compact flash from the slot.
11. Turn ON the power switch.

NOTE

- **When turning ON the power switch for the first time after completing the firmware update, do not turn OFF the power switch until "Ready to Print" message or the message that prompts you to enter a serial number appears.**
- **When the message that prompts you to enter a serial number appears after turning ON the power switch, enter the serial number from [Service Mode] → [System settings] → [Enter Serial No.].**
- **If trouble code D3## appears after turning ON the power switch, irregularity in non-volatile data needs to be addressed.**

2.3.2 Action when data transfer fails

- If “Failed to Download” appears on the control panel, indicating that rewriting has been unsuccessful (in which case the Start key lights up red), take the following steps.

1. Perform the data rewriting procedure again.
2. If the procedure is abnormally terminated, change the compact flash for a new one and try another rewriting sequence.
3. If the procedure is still abnormally terminated, change the board and carry out data rewriting procedure.

MFP CONTROLLER	MFP board (MFPB)
PRINTER	Printer control board (PRCB)
FINISER	FS control board (FSCB) *1

⚠ *1: The optional finisher FS-519 or FS-609 is necessary for the above procedure.

2.4 Updating the firmware with the Internet ISW

2.4.1 Outline

- [Internet ISW] is the system where the firmware update instructions are sent to the main body via the control panel so that the main body will automatically receive the latest firmware data from the program server over a network. Using Internet ISW allows updating the firmware while CE is visiting a customer site without bringing the latest firmware data.

2.4.2 Service environment

The following conditions are necessary for using the Internet ISW function.

- The main body is connected to such a network environment that the firmware can be downloaded on the internet using the ftp or http protocol.

The “Internet ISW” will not operate under the following conditions.

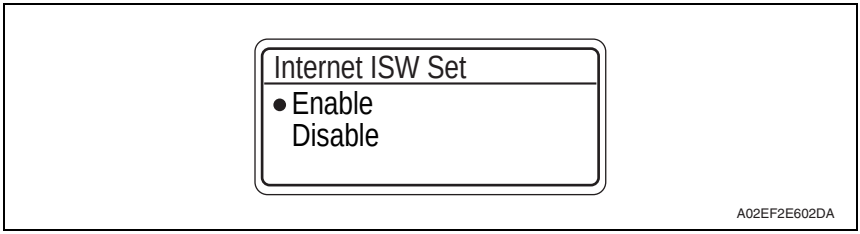
- Power switch is set to OFF.
- When the following setting is set to “ON”:
  [Admin. Settings] → [Security Settings] → [EnhancedSecurity]
- The main body has the job currently performing.

2.4.3 Preparations for firmware rewriting

- For using the Internet ISW, the network parameter, program server address as well as firewall address need to be set to the main body.
- For details of each setting item, refer to Adjustment/Setting “Internet ISW”.
  See P.241

A. Internet ISW Set

1. Call the Service Mode to the screen.
2. Select [Internet ISW Set] which is available from [Internet ISW].



3. Select [Enable], and press the Menu/Select key.

NOTE

- **Settings such as server setting, etc. will be available by selecting “Enable” on this setting.**
- **When the following setting is set to “ON”, “Enable” cannot be selected on this setting.**
  [Admin. Settings] → [Security Settings] → [EnhancedSecurity]

B. Protocol setting

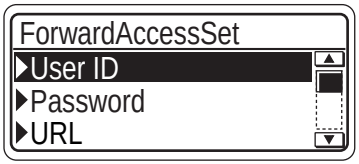
- **It performs the setting concerning the protocol (ftp or http) for connecting to the Internet ISW.**
- **When connecting to the program server using a proxy server, perform the setting for a proxy server.**

Step	Connecting by http	Connecting by ftp
0	Select [Internet ISW] which is available from [Service Mode].	
1	Data acquisition setting • Select [HTTP Settings] → [DataRetrievalSet] → [Enable].	Data acquisition setting • Select [FTP Settings] → [DataRetrievalSet] → [Enable].
2	Proxy Connection • For connecting via proxy server, select [ON].	
3	Proxy Server • For connecting via proxy server, set the proxy server address and the port number. *1.* Select the [Server Address], and set the proxy server address by IP addressing scheme or FQDN scheme. *2.* Select [Port Number], and set the port number for the proxy server from 1 through 65535.	
4	Proxy Auth. • Set the login name and the password which may be necessary for authentication when accessing to the proxy server. *1.* When Authentication is necessary for accessing to the proxy server, select [Auth. Settings], and select [ON]. *2.* Select [Auth. Login Name] and enter the login name with the operation keys. *3.* Select [Auth. Password] and enter the password with the operation keys.	ConnectionSetting • Perform the setting for accessing FTP server. *1.* Select [Port Number], and set the port number for FTP server from 1 through 65535. *2.* Select [Timeout], and set the time for the connection time out from 1 through 60. *3.* When connecting in PASV mode, select [PASV Mode], and select [Enable]. *PASV Mode: This mode is for transferring the file with FTP under the condition where communication is restricted such as inside the firewall. Since with PASV mode, the client with restriction sets the port number, data transmission port can be secured to enable the file transmission.
5	Connection Timeout • Select [ConnectionTimeout], and set the time for the connection time out between 30 and 300 seconds.	—

C. Forwarding access setting

- To make the access setting for the program server which stores the firmware data.

1. Select [Service Mode] → [Internet ISW].
2. Select [ForwardAccessSet], and press the Menu/Select key.



A02EF2E604DA

3. Select [User ID], and enter the user ID which is necessary for connecting to the program server with the operation keys, and press the Menu/Select key.
4. Select [Password], and enter the password which is necessary for connecting to the program server with the operation keys, and press the Menu/Select key.
5. Select [URL], and enter the directory which stores the program server address and the firmware with the operation keys, and press the Menu/Select key.

NOTE

- **Enter the URL which matches to the protocol to be used.**

When connecting to http		**http://(host name or IP address)/directory name**
	or	**https://(host name or IP address)/directory name**
When connecting to ftp		**ftp://(host name or IP address)/directory name**

6. Select [File Name], and enter the file name of the firmware data to be downloaded with the operation keys, and press the Menu/Select key.
7. Press the Cancel key to finish setting.

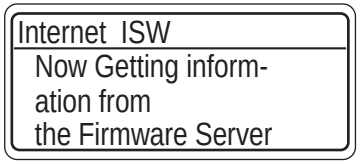
2.4.4 Firmware update procedure

NOTE

- **When performing the Internet ISW, ask the administrator for permission beforehand.**
- **DO NOT turn OFF the power switch while downloading.**

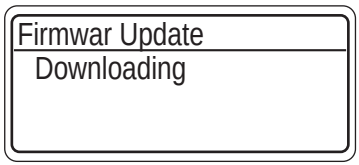
A. Update procedure

1. Select [Service Mode] → [Internet ISW] → [Download].
2. Select [Start] and press the Menu/Select key.
3. The message, [Rebooting. Please do not turn OFF power.], appears.
4. The machine starts rebooting itself. The control panel displays [Now initializing Please wait] to determine the machine configuration.
5. When connection is made, the control panel displays [Now Connecting to the Firmware Server].
6. While the machine is connected to the server, the message is displayed as shown in the following illustration.



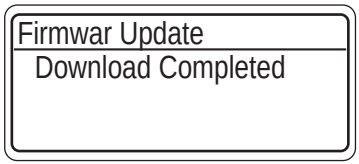
A02EF2C249DA

7. When the program starts running, the control panel displays [Now Downloading Program Data from the Firmware Server] and the download is started.
8. When the program download is successfully complete, the control panel displays [Push [select] Key].
9. Press the Menu/Select key on the control panel to start downloading the firmware data.
10. While downloading the firmware data, the control panel displays [Downloading].



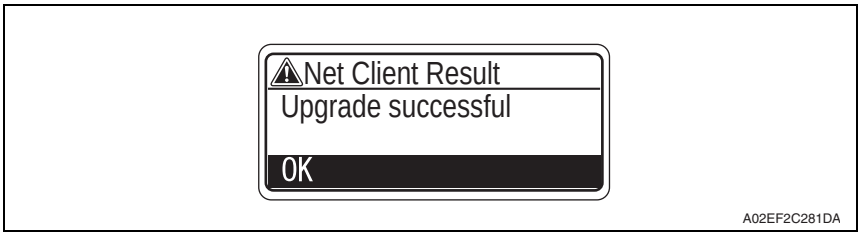
A02EF2C250DA

11. When the firmware download is complete, the control panel displays the message as shown in the following illustration.



A02EF2C251DA

12. When Internet ISW is complete successfully, the control panel displays the message as shown in the following illustration.



B. Completed or failed

(1) Firmware updated normally

1. When the Firmware is normally updated, restart the main body in auto or manual mode to display the outcome, and press the Menu/Select key to return to the main screen.

(2) Failing to update the firmware due to the network trouble

1. When updating failed to complete due to the trouble on connecting to the network, an error code and the message will be displayed.
2. Restart the main body in auto or manual mode, and press the Menu/Select key. It can be used with the firmware version before conducting updating.
3. Check the settings for the network by error codes, and try updating again.

NOTE

- **For error codes, refer to "Error code list for the Internet ISW".**
See P.14

(3) Firmware rewrite failure after firmware download is started

1. Upon starting the firmware rewrite, the main body ROM data is deleted.
If an error occurs after starting the firmware rewrite, the machine starts rebooting itself and displays the standby screen to wait for the restart instruction.
2. Press the Menu/Select key on the standby screen, and try reconnecting to the server.

NOTE

- **Return to the standby screen without fail after turning the power switch OFF/ON if the firmware is not updated.**
- **Firmware can be updated with the Compact flash with the power switch OFF.**

C. Confirming the firmware version

1. Call the Service Mode to the screen.
2. Select [Management List] which is available from [List Output], and print out the machine management list.
3. Check if the firmware version is updated.

2.4.5 Error code list for the Internet ISW

- When a trouble occurred while conducting the Internet ISW and it was not normally connected, the message on the status and the error code will be displayed on the control panel.
  When updating with CS Remote Care, the error code will be sent to the CS Remote Care center.

Error code Control panel	Description	Countermeasure
0x00000001	Illegal error on the control	• Check if the following setting is set to "Enable". [Service Mode] → [Internet ISW] → [Internet ISW Set] • Check the status of the following setting. [Service Mode] → [Internet ISW] → [ForwardAccessSet] • If the above process does not solve the problem, inform the corresponding error code to the KONICA MINOLTA.
0x00000010	Parameter error	• Check if the following setting is set to "Enable". [Service Mode] → [Internet ISW] → [Internet ISW Set] • If the above process does not solve the problem, inform the corresponding error code to KONICA MINOLTA.
0x00111000	Error concerning the network • Connection has been completed.	• Check the User's network environment. (LAN cable's connection) • Check the status of the following setting. [Service Mode] → [Internet ISW] → [ForwardAccessSet] • Check to see if the FTP server operates normally.
0x00111001	Error concerning the network • It cannot be connected to the server.	• Check the network environment of the User. • Check to see if the FTP server operates normally.
0x00111100	Error concerning the network • Communication timeout.	
0x00111101	Error concerning the network • Disconnection occurred	• Check the network environment of the User. • Check to see if the FTP server operates normally.
0x00111110	Error concerning the network • The network is not connected.	
0x00110010	Error concerning the network • Others	
0x00001###	FTP error • Reply code when it failed to be connected	• Check to see if FTP server normally operates. • Check the IP address, user's name, etc.

Error code Control panel	Description	Countermeasure
0x00002###	FTP error • Error reply code for the user command or pass command	• Check to see if FTP server operates normally.
0x00003###	FTP error • Error reply code for CWD command	
0x00004###	FTP error • Error reply code for the TYPE command.	• Check to see if FTP server operates normally.
0x00005###	FTP error • Error reply code for the PORT command.	
0x00006###	FTP error • Error reply code for the PASV command.	• Check to see if FTP server operates normally. • Set the PASV mode to “Disable”, and try it again.
0x00007###	FTP error • Error rely code for the RETR command.	• Check to see if FTP server operates normally. • Wait for about 30 minutes and try it again.
0x1000 0100	• It cannot be accepted because of the job currently being executed. • ISW being executed by other method.	• Wait for the current job to be completed and try it again.
0x10000102	• The Internet ISW is already being executed.	• Wait for the current Internet ISW to be completed.
0x10000103	• It failed to prohibit the job. (It failed to lock the operation.) → It failed to lock the job because the operation is already locked with PSWC, etc.	• Check if the following setting is set to “Enable”. [Service Mode] → [Internet ISW] → [Internet ISW Set] • If the above process does not solve the problem, inform the corresponding error code to the KONICA MINOLTA.
0x10000104	• There is no space for F/W data to be downloaded.	
0x10000106	• Check sum error	
0x10000107	File access error • The file downloaded has an error. • The header of the file which has been read has an error. • The size of the file to be downloaded is too large. • When it is identified to be the different type of F/W.	• Check to see if the downloaded F/W is of the correct type.

Error code Control panel	Description	Countermeasure
0x10000108	• The area F/W is stored is destroyed, and another ISW is necessary.	• Wait until ISW is automatically executed on MFP side.
0x20000000	The temporary error when running the subset • When starting the Internet ISW in a normal program, the rebooting will start and the Internet ISW will be executed with the subset program. During the process by the subset program, it has to be in the “Failed” status unless the Internet ISW is successfully conducted. This code is used temporarily to make it in error status.	

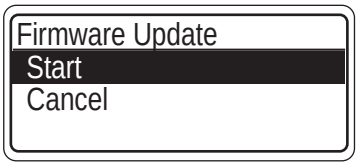
2.5 Firmware update by customer

2.5.1 Outline

- This machine allows the firmware update by customer, using the built-in FTP server feature.

A. Procedure

1. Store THAMESMC.bin file in any desired place in the PC.
2. Press the Menu/Select key on the control panel.
3. Select [Admin. Settings] and press the Menu/Select key.
4. Enter the administrator password and press the Menu/Select key.
5. Select [Firmware Update] and press the Menu/Select key.
6. Select [Start] and press the Menu/Select key.
   * The machine starts the setup for the firmware update.

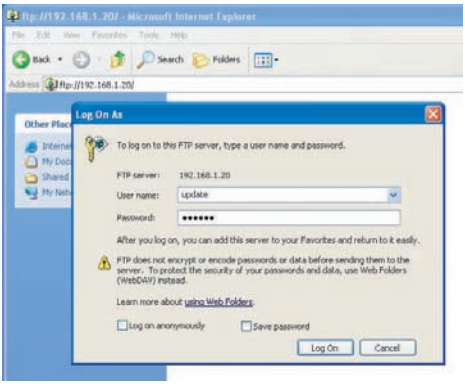


A02EF2C280DA

7. After the machine reboots itself, access and log in to the machine's FTP server from the PC.

NOTE

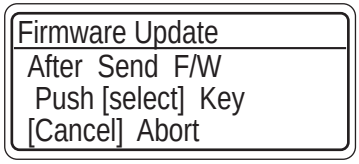
- **Log in with typing [update] for user name and [update] for password.**
- **When logging in via Internet Explorer ver. 6, perform as follows:**
  Enter "ftp://<Machine's IP address>" into the URL field.
  Select Login method from File menu to display the login screen.
  Enter the user name and password.



A02EF2C275DA

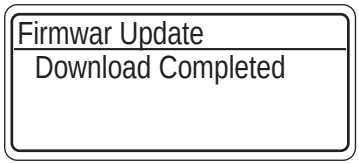
8. Forward the THAMESMC.bin file stored in step 1 to the FTP server.
   After completing the file transfer, start operation from the control panel.

9. Press the Menu/Select key on the control panel.
The machine starts downloading the data.



A02EF2C254DA

10. Make sure that the message “Download Completed” appears. Then, turn OFF and then turn ON the power switch.



A02EF2C251DA

11. After the reboot, press the Menu/Select key.



A02EF2C281DA

Troubleshooting

3. Checking the system configuration

- When a malfunction occurs, let the printer print a configuration page to check for system configuration.

1. Press the Menu/Select key.
2. Select [User Settings] → [Print Reports] → [Configuration].
3. Select 1-Sided Print or 2-Sided Print and press the Menu/Select key to produce an output of the list.

4. Status codes

Code	Description	Action
CA051	Standard controller configuration failure	Change the MFP board (MFPB).
CA052	Faulty controller hardware	Change the MFP board (MFPB).
CA053	Controller start failure	Change the MFP board (MFPB) if the problem occurs again when turning OFF the power switch and turn it ON again more than 10 seconds after.

See P.291 of the main body service manual.

5. Troubleshooting procedures

5.1 Unable to print over the network.

	Check		Possible Cause	Action	Remark
1	Is the print job displayed on the machine control panel?	Yes	An error on machine side (paper running out, toner running out, etc.)	Correct the error.	See “User’s Guide” of the machine.
			Waiting its turn	Check the machine control panel for jobs in print queue. Priority may be changed as necessary.	
			The job is locked.	Enter the password to unlock the job.	
			The correct division ID has not been entered.	Enter the correct division ID in the printer driver and try re-transmitting the job again. (access code)	
		No	Data is yet to be received.	Go to item 2.	

	Check		Possible Cause	Action	Remark
2	Is the response of Ping sent from the PC to the machine?	Yes	The print destination port setting is wrong.	Set the correct port.	See “User’s Guide”
			PC operates erratically temporarily.	Restart the PC.	
			Printer driver incorrectly installed	Uninstall the printer driver through the proper steps and then reinstall it properly.	See “User’s Guide.”
		No	Controller board (MFP Control Board) operates erratically temporarily.	Restart the controller board.	Turn OFF the Power Switch and turn it ON again more than 10 seconds after.
			Network cable is disconnected or a relay device is faulty.	Reconnect the cable and restart or change the faulty relay device.	Check with the controller network LED.
			IP address and/or subnet mask incorrectly set.	Set the correct IP address and subnet mask.	See “TCP/IP Setting” in Installation Guide.

KONICA MINOLTA

SERVICE MANUAL

FIELD SERVICE

PC-106/205

2007.10
KONICA MINOLTA BUSINESS TECHNOLOGIES, INC. Ver. 1.0

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
2007/10	1.0	—	Issue of the first edition

CONTENTS

PC-106/205

General

1. Product specifications 1

Maintenance

2. Periodical check 3
   2.1 Maintenance procedure (Periodical check parts) 3
      2.1.1 Replacing the separation roller assy 3
      2.1.2 Replacing the feed roller 5
      2.1.3 Replacing the pick-up roller 8
3. Other 11
   3.1 Disassembly/Adjustment prohibited items 11
   3.2 Disassembly/Assembly/Cleaning list (Other parts) 12
      3.2.1 Disassembly/Assembly parts list 12
      3.2.2 Cleaning parts list 12
   3.3 Disassembly/Assembly procedure 13
      3.3.1 Right door/Rear right cover/Lower right cover/Front right cover 13
      3.3.2 Rear cover/Left cover 13
   3.4 Cleaning procedure 14
      3.4.1 Separation roller 14
      3.4.2 Feed roller 15
      3.4.3 Pick-up roller 15
      3.4.4 Vertical transport roller 16

Adjustment/Setting

4. How to use the adjustment section 17
5. Mechanical adjustment 18
   5.1 Adjusting the paper reference position 18
      5.1.1 Centering 18
      5.1.2 Centering (Duplex) 20

Troubleshooting

6. Jam display 21
6.1 Misfeed display 21
6.1.1 Misfeed display resetting procedure 21
6.2 Sensor layout 22
6.3 Solution 23
6.3.1 Initial check items 23
6.3.2 Tray4 feed section/vertical transport section misfeed (PC-106/205) 24
6.3.3 Tray5 feed section/vertical transport section misfeed (PC-205) 25
7. Trouble code 26
7.1 Trouble code display 26
7.2 Trouble code list 26
7.3 Solution 27
7.3.1 C0206: Tray4 lift-up failure
C0208: Tray5 lift-up failure 27

General

1. Product specifications

A. Type

Name	2 way paper feed cabinet
Type	Front loading type 2 way paper feed device
Installation	Desk type
Document alignment	Center

B. Paper

Type	Size	Capacity	
		Tray 4	Tray 5
Plain paper (60 to 90 g/m² (16 to 24 lb))	A5S to A3, 5-1/2 x 8-1/2S/StatementS to 11 x 17	500 sheets	500 sheets
Thick paper 1 (91 to 150 g/m² (24.25 to 40 lb))		150 sheets	150 sheets
Thick paper 2 (151 to 209 g/m² (40 to 55.5 lb))			
Thick paper 3 (210 to 256 g/m² (55.75 to 68 lb))			

C. Machine specifications

Power requirements	DC 24 V ± 10 % (supplied from the main body)
	DC 5 V ± 5 %
Max. power consumption	15 W or less
Dimensions	600 mm (W) x 578 mm (D) x 301 mm (H) 23.5 inch (W) x 22.75 inch (D) x 11.75 inch (H)
Weight	PC-106: 24.0 kg (53 lb) PC-205: 28.0 kg (61.75 lb)

D. Operating environment

Conforms to the operating environment of the main body.

NOTE

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

Blank Page

Maintenance

2. Periodical check

2.1 Maintenance procedure (Periodical check parts)

2.1.1 Replacing the separation roller assy

A. Periodically replaced parts/cycle

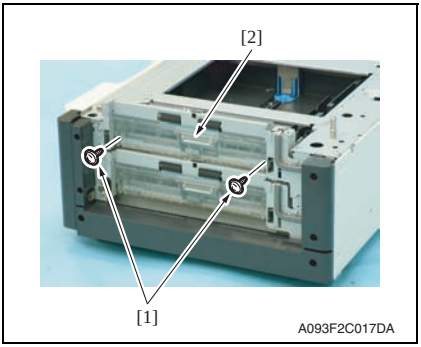
- Separation roller assy: Every 300,000 prints

NOTE

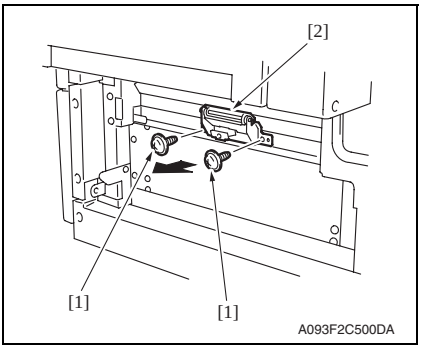
- **Replace the separation roller assy, feed roller and pick-up roller at the same time.**

B. Replacing procedure

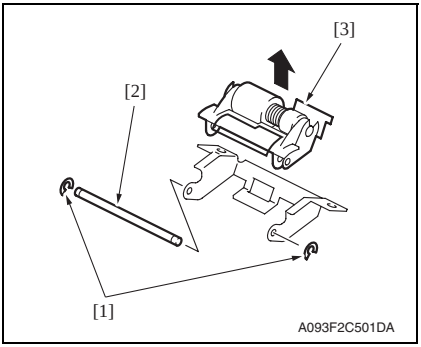
1. Remove the right door.
See P.13



2. Remove two screws [1] and remove the jam access cover [2].



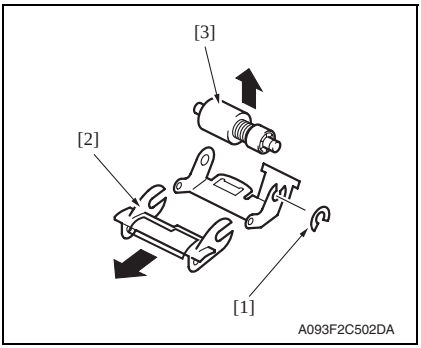
3. Remove two screws [1] and remove the paper separation roller mounting bracket assy [2].



4. Remove two C-rings [1] and the shaft [2], and remove the paper separation roller fixing bracket assy [3].

NOTE

- **Be careful not to lose spring at this time.**

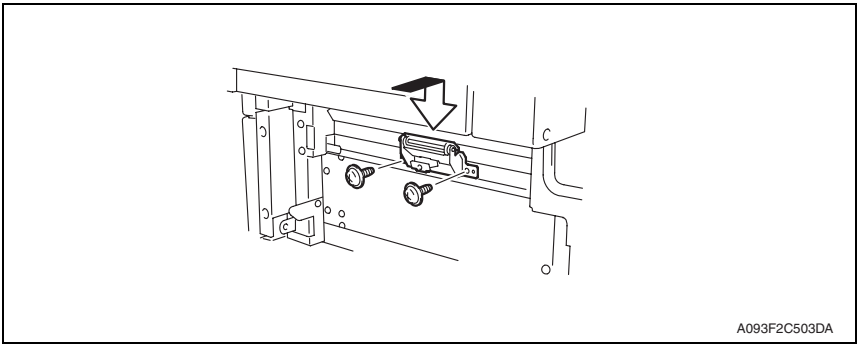


5. Remove the C-ring [1], the guide [2], and remove the separation roller assy [3].

6. Repeat steps 1 to 5 similarly for the paper feed tray 5.

NOTE

- **Install the separation roller assy while pressing the holder down so that it aligns to the metal bracket of the machine.**
- **Make sure that the separation roller assy is not tilted to the right or left when installed.**



2.1.2 Replacing the feed roller

A. Periodically replaced parts/cycle

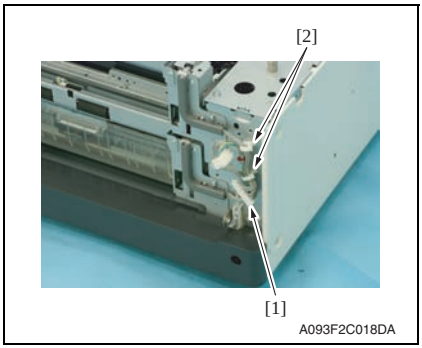
- Feed roller: Every 300,000 prints

NOTE

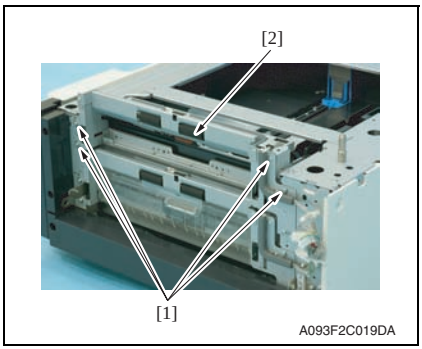
- **Replace the separation roller assy, feed roller and pick-up roller at the same time.**

B. Replacing procedure

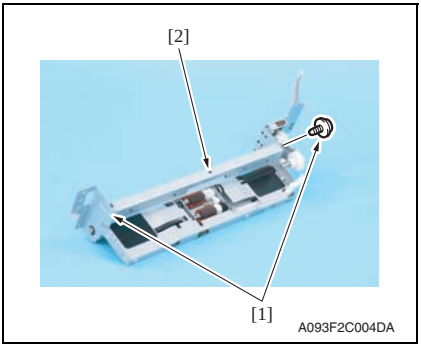
1. Remove the rear right cover. (Remove the right lower cover for 4th row.)
See P.13
2. Remove the paper feed tray 4. (Remove the paper feed tray 5 from 4th row.)
3. Remove the paper separation roller mounting bracket assy.
See the procedures 1 to 3 in P.3 “Replacing the separation roller assy.”



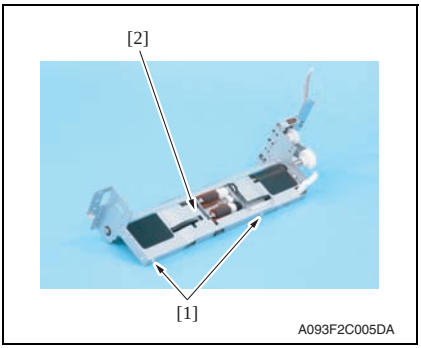
4. Disconnect the connector [1] and remove the harness from two wire saddles [2].



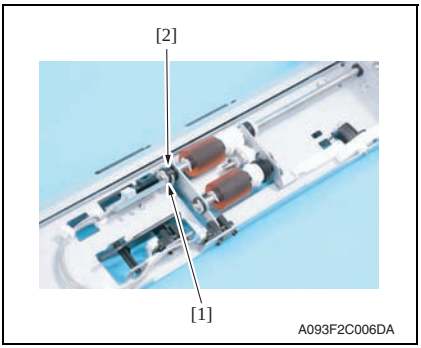
5. Remove four screws [1] and remove the feed unit [2].



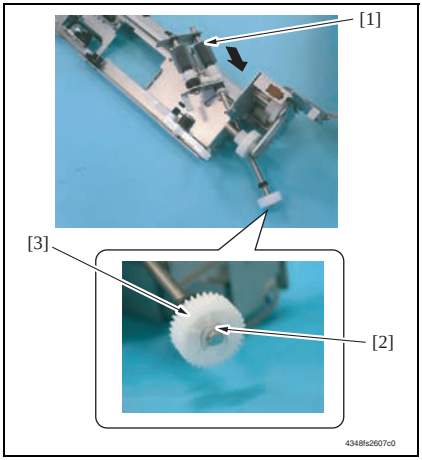
6. Remove two screws [1] and remove the mounting frame [2] for the paper separation roller mounting bracket assy.



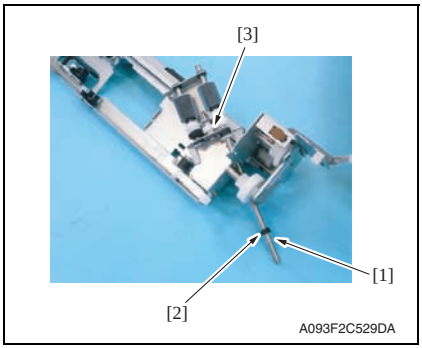
7. Remove two screws [1] and remove the feed roller cover [2].



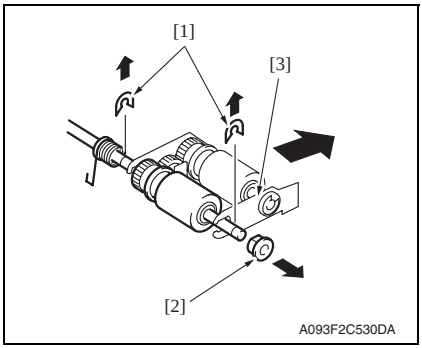
8. Remove the C-ring [1] and remove the bushing [2].



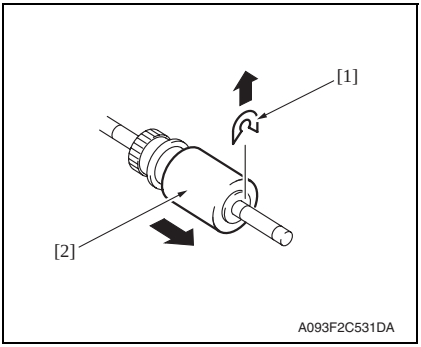
9. Shift the shaft assy [1] in the orientation as shown on the left, and remove the C-ring [2] and the gear [3].



10. Remove the C-ring [1], the bushing [2], and remove the shaft assy [3].



11. Remove two E-rings [1] and the bushing [2], and remove the pick-up roller fixing bracket assy [3].



12. Remove the C-ring [1] and remove the feed roller [2].

13. Repeat steps 1 to 12 similarly for the paper feed tray 5.

2.1.3 Replacing the pick-up roller

A. Periodically replaced parts/cycle

- Pick-up roller: Every 300,000 prints

NOTE

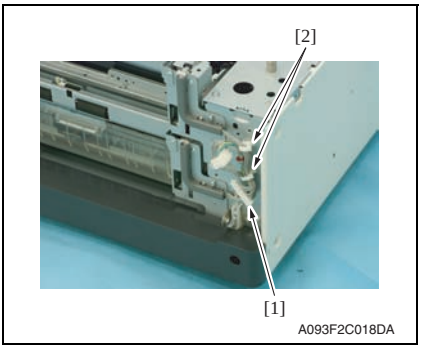
- **Replace the separation roller assy, feed roller and pick-up roller at the same time.**

B. Replacing procedure

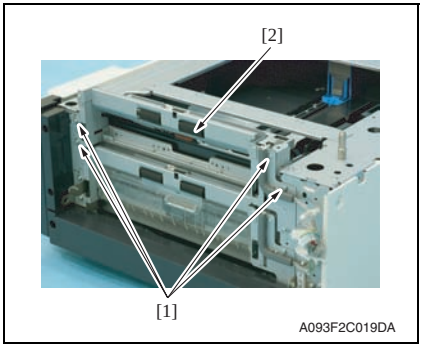
1. Remove the rear right cover. (Remove the right lower cover for 4th row.)
See P.13

2. Remove the paper feed tray 4. (Remove the paper feed tray 5 from 4th row.)

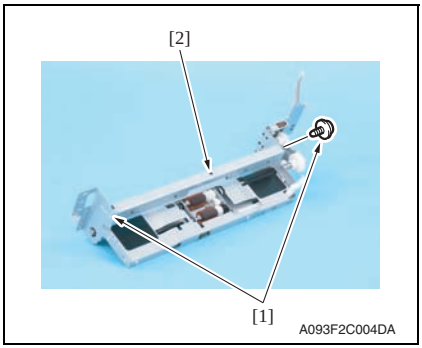
3. Remove the separation roller mounting bracket assy.
See the procedures 1 to 3 in P.3 “Replacing the separation roller assy.”



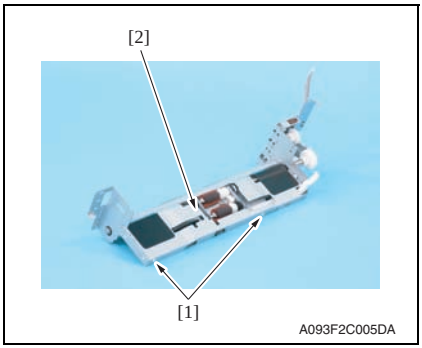
4. Disconnect the connector [1] and remove the harness from two wire saddles [2].



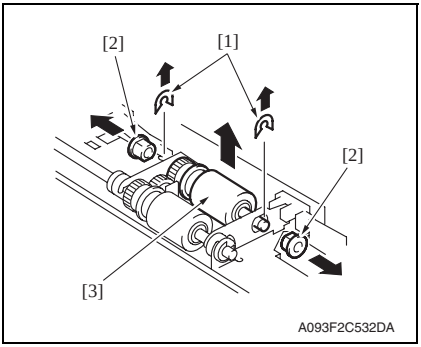
5. Remove four screws [1] and remove the feed unit [2].



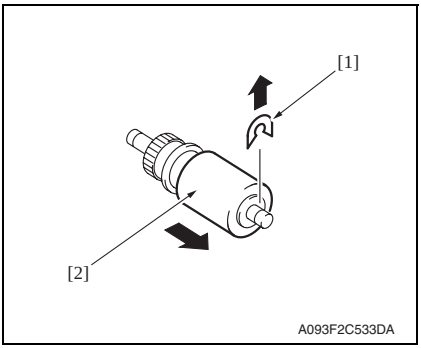
6. Remove two screws [1] and remove the mounting frame [2] for the paper separation roller mounting bracket assy.



7. Remove two screws [1] and remove the feed roller cover [2].



8. Remove two C-rings [1], two bushings [2], and remove the pick-up roller assy [3].



9. Remove the C-ring [1] and remove the pick-up roller [2].

10. Repeat steps 1 to 9 similarly for the paper feed tray 5.

3. Other

3.1 Disassembly/Adjustment prohibited items

A. Paint-locked screws

NOTE

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

B. Red-painted screws

NOTE

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

C. Variable resistors on board

NOTE

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

D. Removal of PWBs

⚠ CAUTION

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

3.2 Disassembly/Assembly/Cleaning list (Other parts)

3.2.1 Disassembly/Assembly parts list

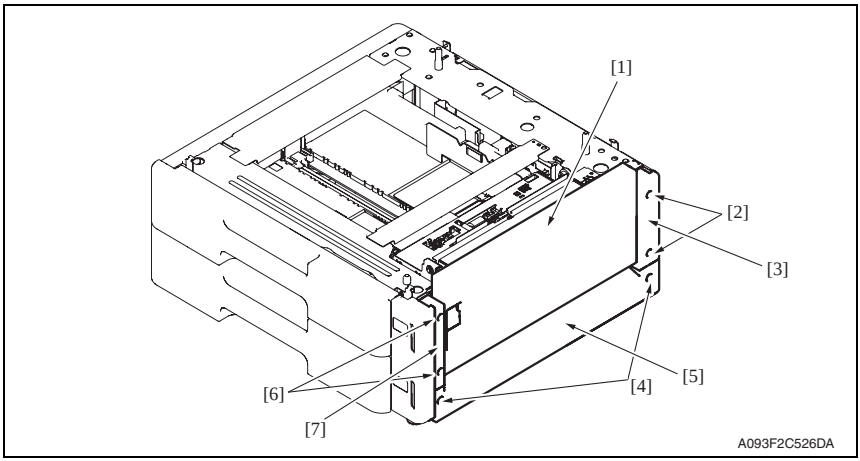
No.	Section	Part name	Ref. page
1	Exterior parts	Right door	P.13
2		Rear right cover	P.13
3		Lower right cover	P.13
4		Front right cover	P.13
5		Rear cover	P.13
6		Left cover	P.13

3.2.2 Cleaning parts list

No.	Section	Part name	Ref. page
1	Feed section	Separation roller	P.14
2		Feed roller	P.15
3		Pick-up roller	P.15
4	Transport section	Vertical transport roller	P.16

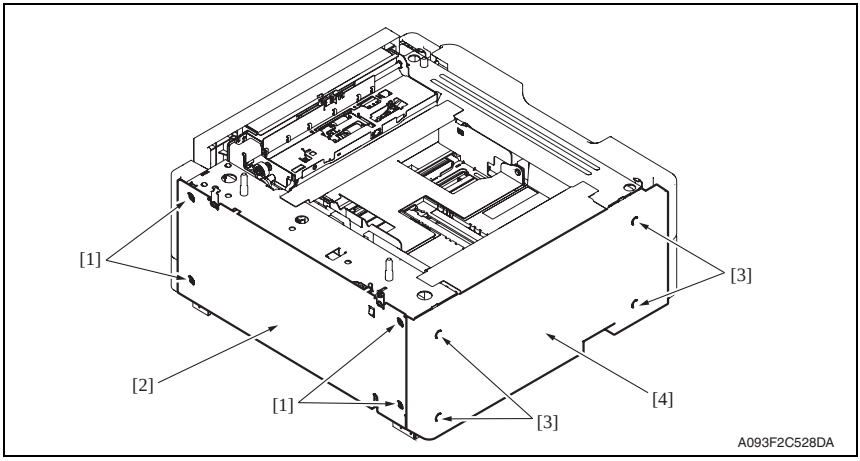
3.3 Disassembly/Assembly procedure

3.3.1 Right door/Rear right cover/Lower right cover/Front right cover



1. Open the right door [1].
2. Remove the right door [1].
3. Remove two screws [2] and remove the rear right cover [3].
4. Remove two screws [4] and remove the lower right cover [5].
5. Remove two screws [6] and remove the front right cover [7].

3.3.2 Rear cover/Left cover



1. Remove four screws [1] and remove the rear cover [2].
2. Remove four screws [3] and remove the left cover [4].

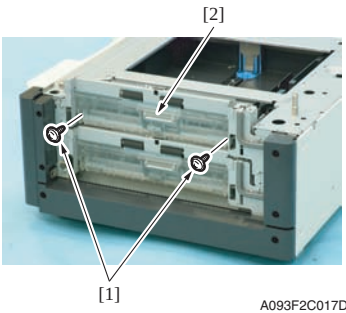
3.4 Cleaning procedure

NOTE

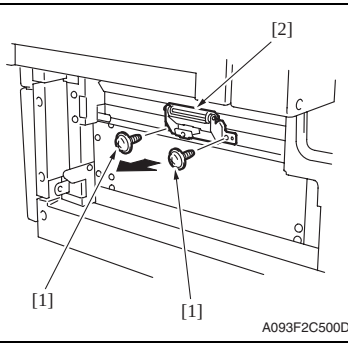
- **The alcohol described in the cleaning procedure represents the isopropyl alcohol.**

3.4.1 Separation roller

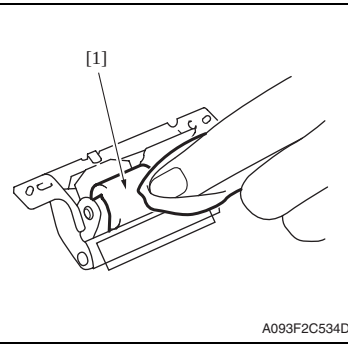
1. Remove the right door.
See P.13



2. Remove two screws [1] and remove the jam access cover [2].



3. Remove two screws [1] and remove the separation roller mounting bracket assy [2].

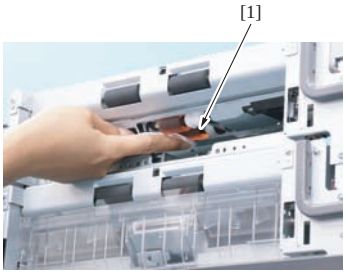


4. Using a cleaning pad dampened with alcohol, wipe the separation roller [1] clean of dirt.

5. Repeat steps 1 to 4 similarly for the paper feed tray 5.

3.4.2 Feed roller

1. Remove the paper feed tray 4. (remove the paper feed tray 5 from 4th row.)
2. Remove the separation roller mounting bracket assy.
See the procedures 1 to 3 in P.14 “Cleaning of the separation roller.”



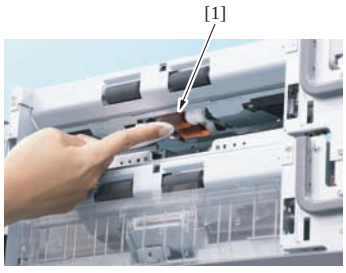
A093F2C008DA

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

4. Repeat steps 1 to 3 similarly for the paper feed tray5.

3.4.3 Pick-up roller

1. Remove the paper feed tray 4. (remove the paper feed tray 5 from 4th row.)
2. Remove the separation roller mounting bracket assy.
See the procedures 1 to 3 in P.14 “Cleaning of the separation roller.”



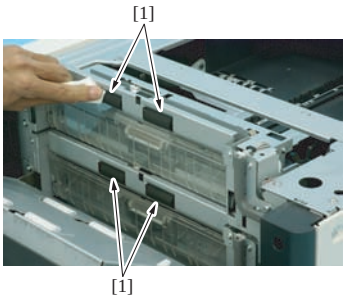
A093F2C007DA

3. Using a cleaning pad dampened with alcohol, wipe the pick-up roller [1] clean of dirt.

4. Repeat steps 1 to 3 similarly for the paper feed tray 5.

3.4.4 Vertical transport roller

1. Open the right door.



2. Using a cleaning pad dampened with alcohol, wipe the vertical transport roller [1] clean of dirt.

Adjustment/Setting

4. How to use the adjustment section

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

Advance checks

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

- The power supply voltage meets the specifications.
- The power supply is properly grounded.
- The machine shares the power supply with any other machine that draws large current intermittently (e.g., elevator and air conditioner that generate electric noise).
- The installation site is environmentally appropriate: high temperature, high humidity, direct sunlight, ventilation, etc.; levelness of the installation site.
- The defective image attributes to the data itself which is sent from the PC to the printer.
- The density is properly selected.
- 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.**

5. Mechanical adjustment

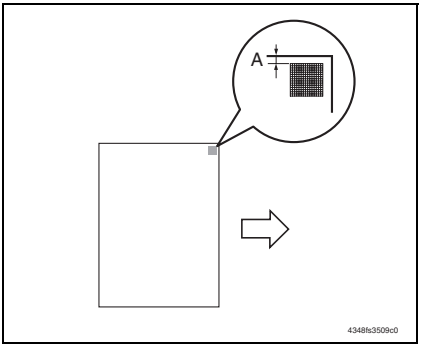
5.1 Adjusting the paper reference position

NOTE

- **Make this adjustment after any of the following procedures has been performed.**
  When the PH unit has been replaced.
  When the image on the print is offset in the sub scan direction.
  When a faint image occurs on the leading edge of the image.

5.1.1 Centering

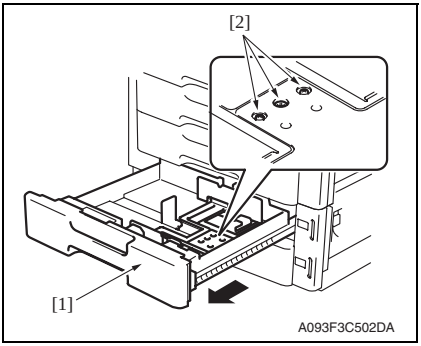
1. Call the Service Mode to the screen.
   See P.202 of the main body service manual.
2. Select [MachineAdjustment] → [Printer Area] → [Centering] → [Tray 4].
3. Press the Menu/Select key.
4. Select [Print] and press the Menu/Select key to let the machine produce a test print.



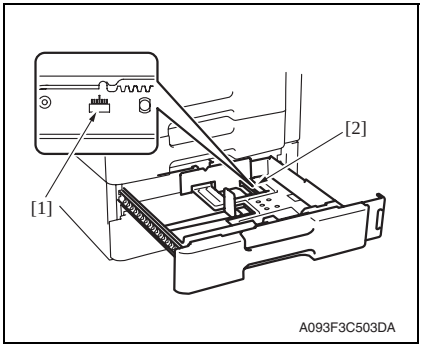
5. Measure the width of printed reference line A.
   Specification: 3.0 mm ± 1.0 mm
6. If the measured width A falls outside the specified range, enter the correction value using the ▲ or ▼ keys.
7. Produce another test print and check to see if width A falls within the specified range.

NOTE

- **If the use of the ▲ or ▼ keys does not allow the measurement to fall within the specified range, perform the following steps.**



8. Slide out the drawer [1] and unload paper from it.
9. Loosen three screws [2] at the center of the paper lifting plate.



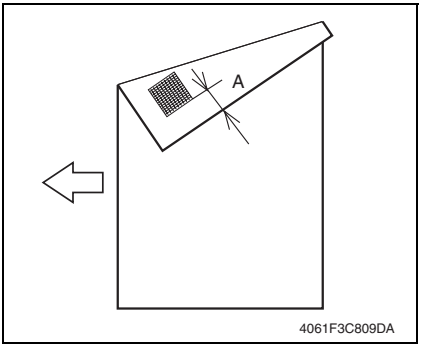
10. Watching the graduations [1] provided in the drawer, move the edge guide [2] in the rear.

- If width A is greater than the specified value, move the edge guide toward the front.
- If width A is smaller than the specified value, move the edge guide toward the rear.

11. Perform another test print and check the reference deviation.
12. Repeat the adjustment until the reference line falls within the specified range.
13. Tighten the adjustment screw.
14. Repeat steps 1 to 13 similarly for the paper feed tray 5.
15. Press the Menu/Select key.
16. Turn OFF the power switch, then wait for 10 sec. or more and turn ON the power switch.

5.1.2 Centering (Duplex)

1. Call the Service Mode to the screen.
   See P.202 of the main body service manual.
2. Select [MachineAdjustment] → [Printer Area] → [Centering(Duplex)] → [Tray 4].
3. Press the Menu/Select key
4. Select [Print] and press the Menu/Select key to let the machine produce a test print.



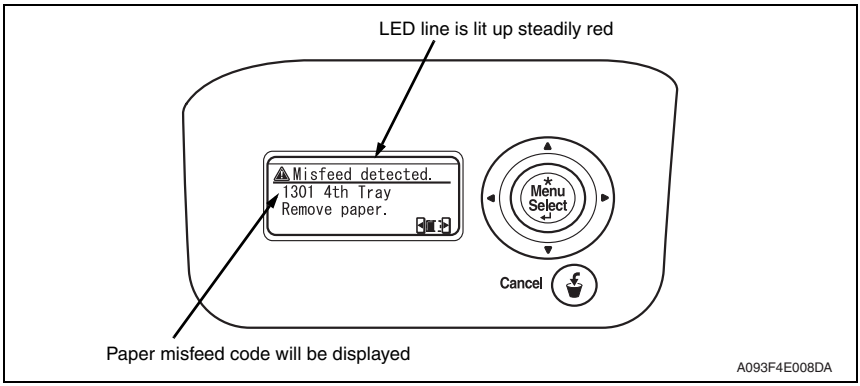
5. Measure the width of printed reference line A.
   Specification: 3.0 mm ± 2.0 mm
6. If the measured width A falls outside the specified range, enter the correction value using the ▲ or ▼ keys.
7. Produce another test print and check to see if width A falls within the specified range.
8. Repeat steps 1 to 7 similarly for the paper feed tray 5.
9. Press the Menu/Select key.
10. Turn OFF the power switch, then wait for 10 sec. or more and turn ON the power switch.

Troubleshooting

6. Jam display

6.1 Misfeed display

- When a paper misfeed occurs, the LED line lights up red steadily and the misfeed message is displayed on the control panel of the machine.

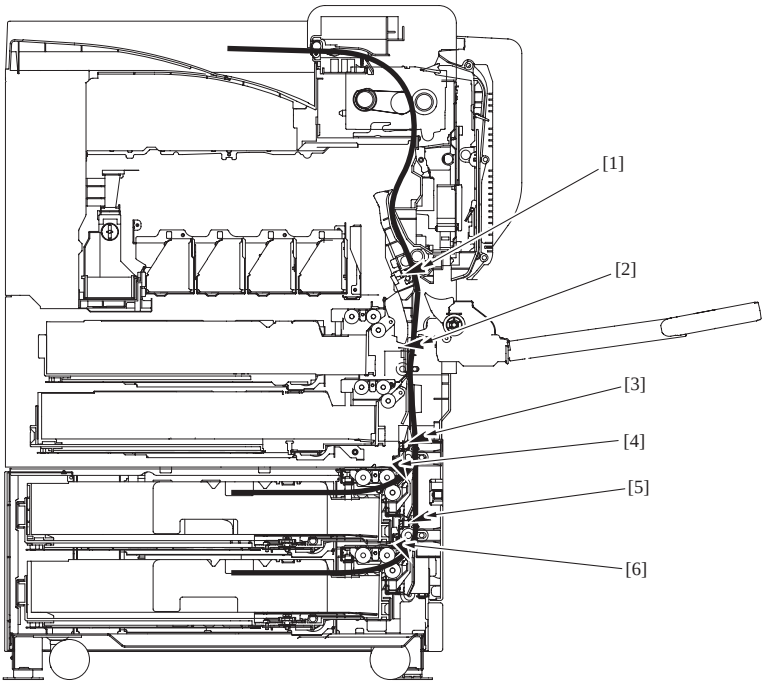


Code	Misfeed location	Misfeed access location	Action
1301	Tray 4 feed section	Right door	P.24
2001	Tray 4 paper vertical transport section	Vertical transport door	
1401	Tray 5 feed section	Right door	P.25
2001	Tray 5 paper vertical transport section	Vertical transport door	

6.1.1 Misfeed display resetting procedure

- Open the corresponding door, clear the sheet of paper misfed, and close the door.

6.2 Sensor layout



[1] Sensor in front of tim. roller (PS23)

[2] Paper feed tray 3 vertical transport sensor (PS16)

[3] Tray4 vertical transport sensor (PS117)

[4] Tray4 paper feed sensor (PS116)

[5] Tray5 vertical transport sensor (PS126)

[6] Tray5 paper feed sensor (PS125)

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 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.

6.3.2 Tray4 feed section/vertical transport section misfeed (PC-106/205)

A. Detection timing

Type	Description
Tray4 feed section/ vertical transport section misfeed detection	The leading edge of the paper does not block the tray4 vertical transport sensor (PS117) even after the set period of time has elapsed after the tray4 paper feed motor (M122) is energized.
	The paper feed tray 3 vertical transport sensor (PS16) is not blocked even after the lapse of a given period of time after the tray4 vertical transport sensor (PS117) has been blocked by a paper.
Tray4 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 4 paper feed.
Tray4 detection of paper remaining	The tray4 vertical transport sensor (PS117) is blocked when the power switch is set to ON, a door or cover is opened and closed, or a misfeed or malfunction is reset.
	The tray4 paper feed sensor (PS116) is blocked when the power switch is set to ON, a door or cover is opened and closed, or a misfeed or malfunction is reset.
Misfeed detected as a result of delayed deactivation of sensor	The tray4 vertical transport sensor (PS117) is not unblocked even after the lapse of a given period of time after PS117 has been blocked by a paper.

B. Action

Relevant electrical parts	
Tray4 paper feed sensor (PS116) Tray4 vertical transport sensor (PS117) Paper feed tray 3 vertical transport sensor (PS16) Tray4 paper feed motor (M122) Sensor in front of tim. roller (PS23)	PC control board (PCCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Initial check items	—	—
2	PS23 I/O check	PRCB CN1PRCB-3 (ON)	magicolor 8650 D-18
3	PS116 I/O check	PCCB PJ6PCCB-8 (ON)	PC-106, PC-205 B-1 to 2
4	PS117 I/O check	PCCB PJ6PCCB-11 (ON)	PC-106, PC-205 B-2
5	PS16 I/O check	PRCB CN9PRCB-11 (ON)	magicolor 8650 D-10
6	M122 operation check	PCCB PJ5PCCB-1 to 4	PC-106, PC-205 B-2 to 3
7	PCCB replacement	—	—

6.3.3 Tray5 feed section/vertical transport section misfeed (PC-205)

A. Detection timing

Type	Description
Tray5 feed section/ vertical transport section misfeed detection	The leading edge of the paper does not block the tray5 vertical transport sensor (PS126) even after the set period of time has elapsed after the tray5 paper feed motor (M123) is energized.
	The tray4 vertical transport sensor (PS117) is not blocked even after the lapse of a given period of time after the tray5 vertical transport sensor (PS126) has been blocked by a paper.
Tray5 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 timing roller at tray 5 paper feed.
Tray5 detection of paper remaining	The tray5 vertical transport sensor (PS126) is blocked when the power switch is set to ON, a door or cover is opened and closed, or a misfeed or malfunction is reset.
	The tray5 paper feed sensor (PS125) is blocked when the power switch is set to ON, a door or cover is opened and closed, or a misfeed or malfunction is reset.
Misfeed detected as a result of delayed deactivation of sensor	The tray5 vertical transport sensor (PS126) is not unblocked even after the lapse of a given period of time after PS126 has been blocked by a paper.

B. Action

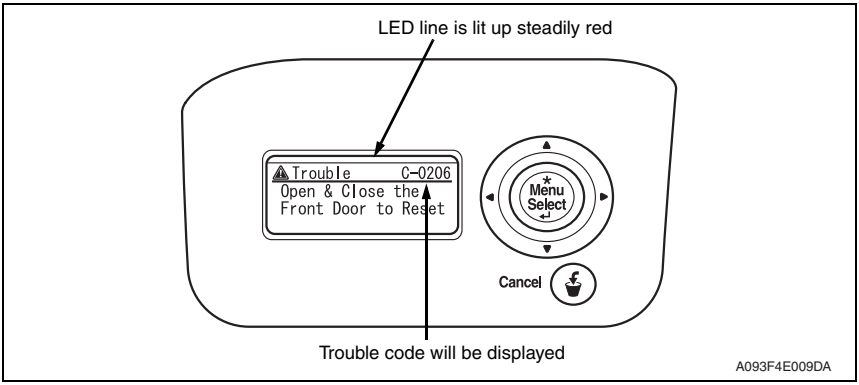
Relevant electrical parts	
Tray5 paper feed sensor (PS125) Tray5 vertical transport sensor (PS126) Tray4 vertical transport sensor (PS117) Tray5 paper feed motor (M123) Sensor in front of tim. roller (PS23)	PC control board (PCCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Initial check items	—	—
2	PS23 I/O check	PRCB CN1PRCB-3 (ON)	magicolor 8650 D-18
3	PS125 I/O check	PCCB PJ10PCCB-8 (ON)	PC-205 G-5
4	PS126 I/O check	PCCB PJ11PCCB-2 (ON)	PC-205 G-5
5	PS117 I/O check	PCCB PJ6PCCB-11 (ON)	PC-106, PC-205 B-2
6	M123 operation check	PCCB PJ9PCCB-1 to 4	PC-205 G-6
7	PCCB replacement	—	—

7. Trouble code

7.1 Trouble code display

- The machine's CPU performs a self-diagnostics function that, on detecting a malfunction, displays the corresponding malfunction code on the control panel.



7.2 Trouble code list

Code	Item	Description
C0206	Tray4 lift-up failure	• The lift-up upper sensor is not blocked even after the set period of time has elapsed after the paper lift-up operation for the drawer began.
C0208	Tray5 lift-up failure	

- Open and close the front door, or turn OFF the power switch. Then, wait for 10 sec. or more and turn ON the power switch to reset the malfunction display.

7.3 Solution

7.3.1 C0206: Tray4 lift-up failure
C0208: Tray5 lift-up failure

Relevant electrical parts	
Tray4 lift-up motor (M124) Tray5 lift-up motor (M125) Tray4 upper limit sensor (PS114) Tray5 upper limit sensor (PS123)	PC control board (PCCB) MFP board (MFPB) DC power supply (DCPU)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Check the motor and sensor connectors for proper connection, and correct as necessary.	—	—
2	Check the connector of each motor for proper drive coupling, and correct as necessary.	—	—
3	Check the DCPU connector for proper connection, and correct as necessary.	—	—
4	PS114 I/O check	PCCB PJ6PCCB-3 (ON)	PC-106, PC-205 B-1
5	PS123 I/O check	PCCB PJ10PCCB-3 (ON)	PC-205 G-4
6	M124 operation check	PCCB PJ4PCCB-4 to 5	PC-106, PC-205 B-3 to 4
7	M125 operation check	PCCB PJ8PCCB-12 to 13	PC-205 G-1
8	PCCB replacement	—	—
9	MFPB replacement	—	—
10	DCPU replacement	—	—

Blank Page

KONICA MINOLTA

SERVICE MANUAL

FIELD SERVICE

PC-406

2007.10

KONICA MINOLTA BUSINESS TECHNOLOGIES, INC. Ver. 1.0

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
2007/10	1.0	—	Issue of the first edition

CONTENTS

PC-406

General

1. Product specification 1

Maintenance

2. Periodical check 3
2.1 Maintenance procedure (Periodical check parts) 3
2.1.1 Replacing the separation roller assy 3
2.1.2 Replacing the feed roller 5
2.1.3 Replacing the pick-up roller 8
3. Other 10
3.1 Disassembly/Adjustment prohibited items 10
3.2 Disassembly/Assembly/Cleaning list (Other parts) 11
3.2.1 Disassembly/Assembly parts list 11
3.2.2 Cleaning parts list 11
3.3 Disassembly/Assembly procedure 12
3.3.1 Right door/Rear right cover/Lower right cover/Front right cover 12
3.3.2 Rear cover/Left cover 12
3.3.3 Drawer 13
3.3.4 Wire 14
3.4 Cleaning procedure 18
3.4.1 Separation roller 18
3.4.2 Feed roller 18
3.4.3 Pick-up roller 19
3.4.4 Vertical transport roller 20

Adjustment/Setting

4. How to use the adjustment section 21
5. Mechanical adjustment 22
5.1 Adjusting the paper reference position 22
5.1.1 Centering 22
5.1.2 Centering (Duplex) 24
5.2 Shifter movement timing belt adjustment 25

Troubleshooting

6. Jam display 27
6.1 Misfeed display 27
6.1.1 Misfeed display resetting procedure 27
6.2 Sensor layout 28
6.3 Solution 29
6.3.1 Initial check items 29
6.3.2 LCT paper feed section/vertical transport section misfeed 30
7. Trouble code 31
7.1 Trouble code display 31
7.2 Trouble code list 32
7.3 Solution 34
7.3.1 C0001: LCT communication error 34
7.3.2 C0209: LCT elevator motor failure 34
7.3.3 C0210: LCT lift failure 35
7.3.4 C0212: LCT lock release failure 35
7.3.5 C0213: LCT shift gate operation failure 36
7.3.6 C0214: LCT shift failure 36
7.3.7 C0215: LCT shift motor failure 37

General

1. Product specification

A. Type

Name	Large capacity cabinet
Type	Front loading type LCC
Installation	Desk type
Document alignment	Center

B. Paper

Type	Size	Capacity
Plain paper (60 to 90 g/m^2 (16 to 24 lb))	A4, 8-$^1/_2$ x 11, Letter	2,500 sheets
Thick paper 1 (91 to 150 g/m^2 (24.25 to 40 lb))		1,000 sheets
Thick paper 2 (151 to 209 g/m^2 (40 to 55.5 lb))		
Thick paper 3 (210 to 256 g/m^2 (55.75 to 68 lb))		

C. Machine specifications

Power requirements	DC 24 V ± 10% (supplied from the main body)
	DC 5 V ± 5%
Max. power consumption	45 W or less
Dimensions	600 mm (W) x 578 mm (D) x 301 mm (H) 23.5 inch (W) x 22.75 inch (D) x 11.75 inch (H)
Weight	28.0 kg (61.75 lb)

D. Operating environment

Conforms to the operating environment of the main body.

NOTE

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

Blank Page

Maintenance

2. Periodical check

2.1 Maintenance procedure (Periodical check parts)

2.1.1 Replacing the separation roller assy

A. Periodically replaced parts/cycle

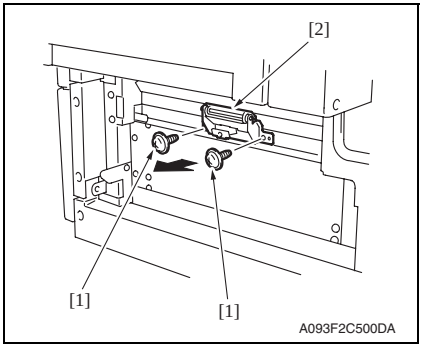
- Separation roller assy: Every 300,000 prints

NOTE

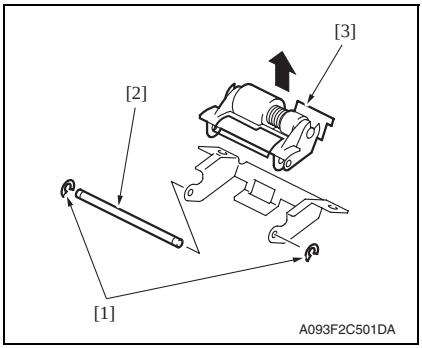
- **Replace the separation roller assy, feed roller and pick-up roller at the same time.**

B. Replacing procedure

1. Remove the right door.
See P.12



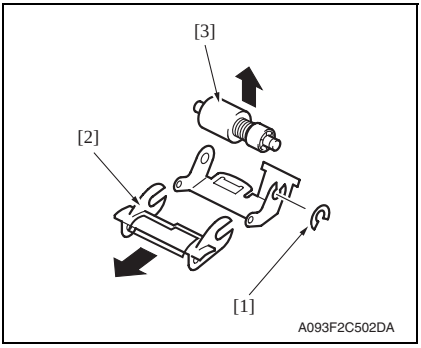
2. Remove two screws [1] and remove the separation roller mounting bracket assy [2].



3. Remove two C-rings [1] and the shaft [2], and remove the separation roller fixing bracket assy [3].

NOTE

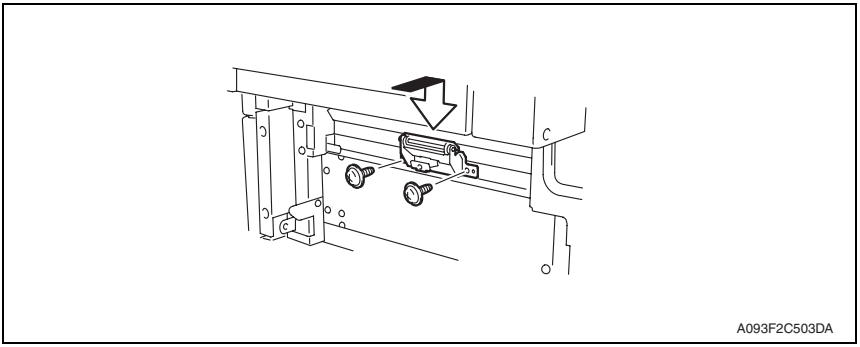
- **Be careful not to lose spring at this time.**



4. Remove the C-ring [1], the guide [2], and remove the separation roller assy [3].

NOTE

- **Install the separation roller assy while pressing the holder down so that it aligns to the metal bracket of the machine.**
- **Make sure that the separation roller assy is not tilted to the right or left when installed.**



2.1.2 Replacing the feed roller

A. Periodically replaced parts/cycle

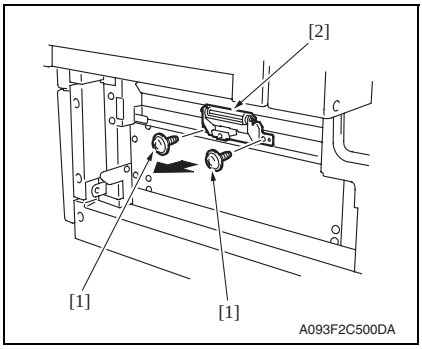
- Feed roller: Every 300,000 prints

NOTE

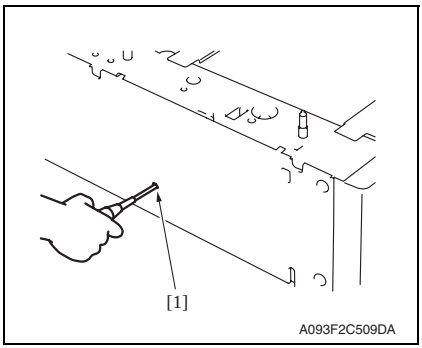
- **Replace the separation roller assy, feed roller and pick-up roller at the same time.**

B. Replacing procedure

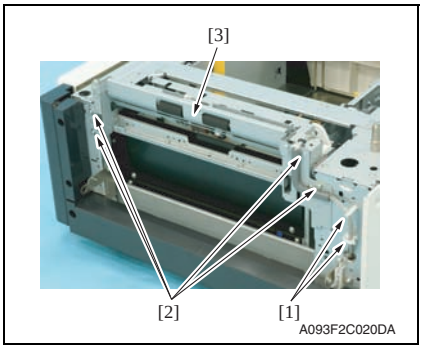
1. Remove the right door.
See P.12
2. Remove the rear cover and the rear right cover.
See P.12



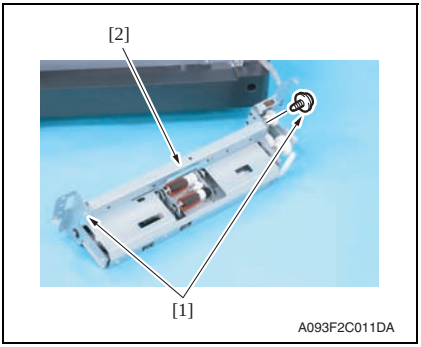
3. Remove two screws [1] and separation roller mounting bracket assy [2].



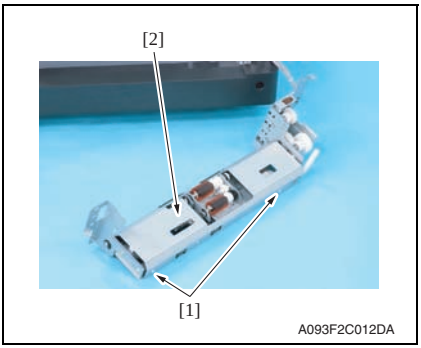
4. Insert a driver into the hole [1] at the back of the feed tray and pull out the paper feed tray.



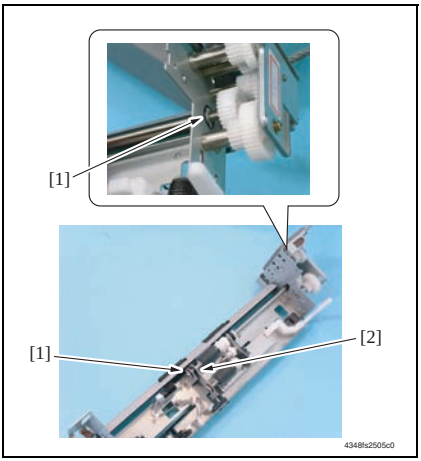
5. Remove two wire saddles [1] and four screws [2], and remove the paper feed unit [3].



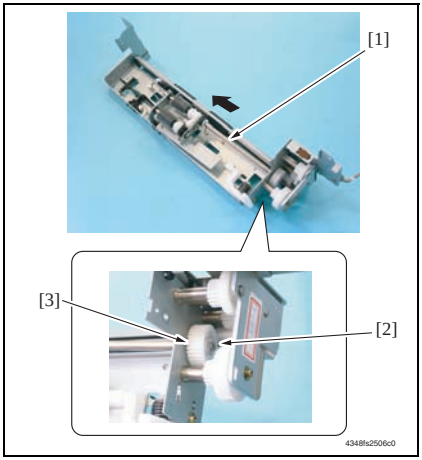
6. Remove two screws [1] and remove the mounting frame [2] for the separation roller mounting bracket assy.



7. Remove two screws [1] and remove the paper feed roller cover [2].

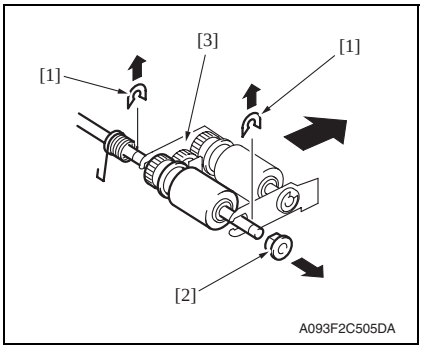


8. Remove two C-rings [1] and remove the bushing [2].

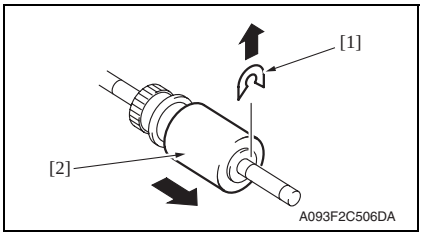


9. Shift the shaft assy [1] in the orientation as shown on the left, and remove the C-ring [2] and the gear [3].

10. Remove the shaft assy [1].



11. Remove two E-rings [1] and the bushing [2], and remove the pick-up roller fixing bracket assy [3].



12. Remove the C-ring [1] and remove the feed roller [2].

2.1.3 Replacing the pick-up roller

A. Periodically replaced parts/cycle

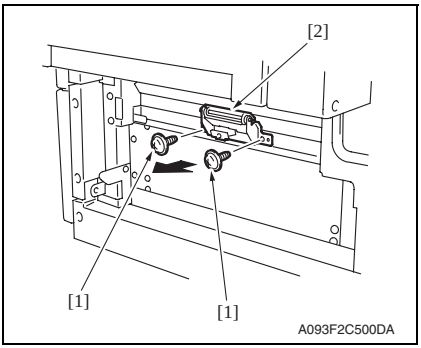
- Pick-up roller: Every 300,000 prints

NOTE

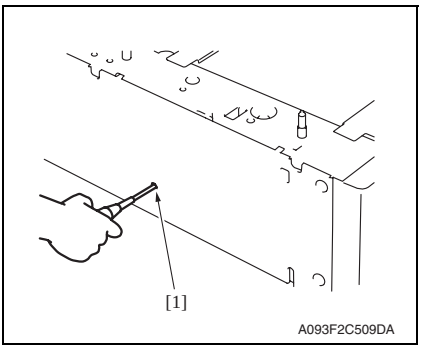
- **Replace the separation roller assy, feed roller and pick-up roller at the same time.**

B. Replacing procedure

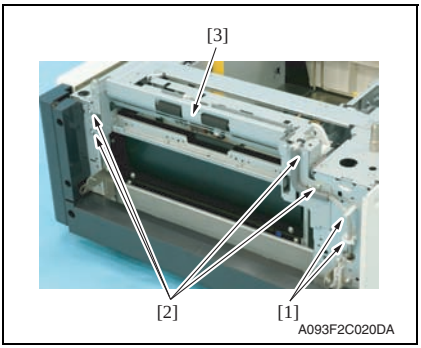
1. Remove the right door.
See P.12
2. Remove the rear cover and the rear right cover.
See P.12



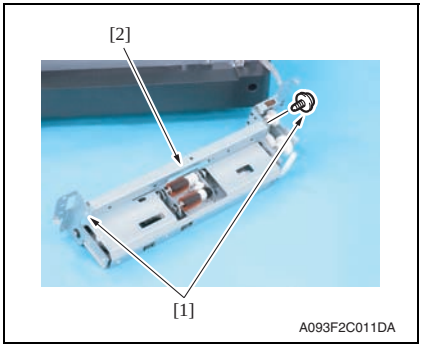
3. Remove two screws [1] and separation roller mounting bracket assy [2].



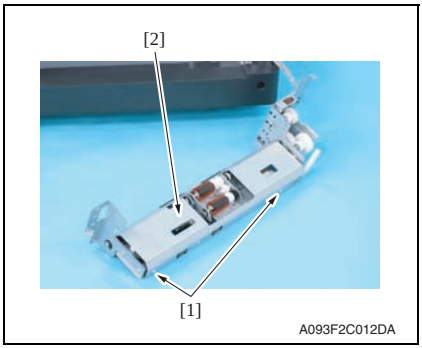
4. Insert a driver into the hole [1] at the back of the feed tray and pull out the paper feed tray.



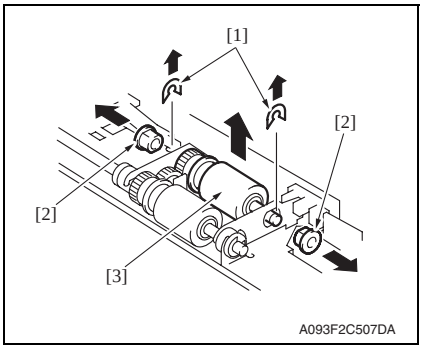
5. Remove two wire saddles [1] and four screws [2], and remove the paper feed unit [3].



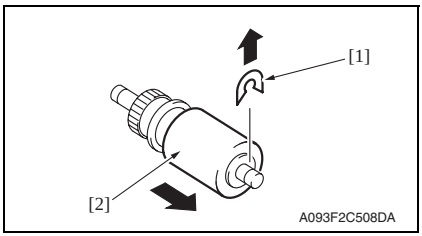
6. Remove two screws [1] and remove the mounting frame [2] for the separation roller mounting bracket assy.



7. Remove two screws [1] and remove the paper feed roller cover [2].



8. Remove two C-rings [1], two bushings [2], and the pick-up roller assy [3].



9. Remove the C-ring [1] and remove the pick-up roller [2].

3. Other

3.1 Disassembly/Adjustment prohibited items

A. Paint-locked screws

NOTE

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

B. Red-painted screws

NOTE

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

C. Variable resistors on board

NOTE

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

D. Removal of PWBs

⚠ CAUTION

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

3.2 Disassembly/Assembly/Cleaning list (Other parts)

3.2.1 Disassembly/Assembly parts list

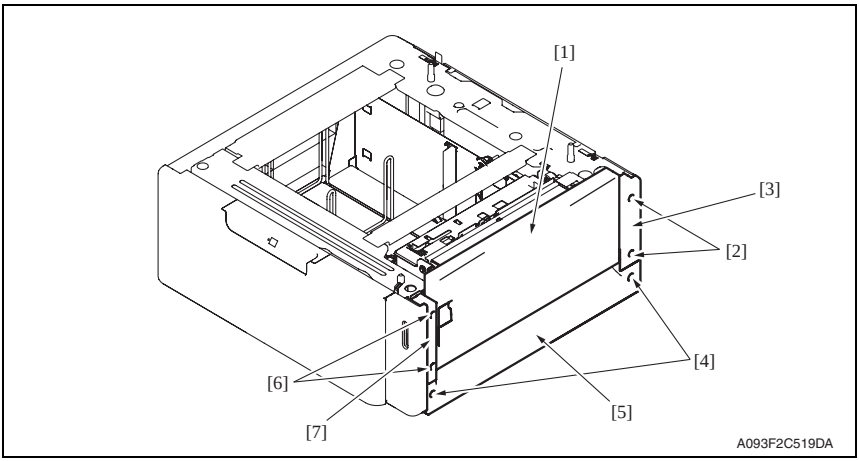
No.	Section	Part name	Ref. page
1	Exterior parts	Right door	P.12
2		Rear right cover	P.12
3		Lower right cover	P.12
4		Front right cover	P.12
5		Rear cover	P.12
6		Left cover	P.12
7	Unit	Drawer	P.13
8	Other	Wire	P.14

3.2.2 Cleaning parts list

No.	Section	Part name	Ref. page
1	Feed section	Separation roller	P.18
2		Feed roller	P.18
3		Pick-up roller	P.19
4	Transport section	Vertical transport roller	P.20

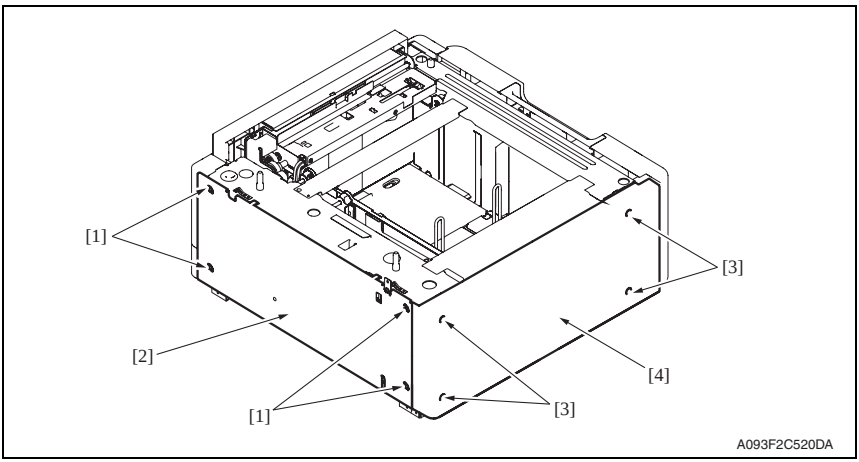
3.3 Disassembly/Assembly procedure

3.3.1 Right door/Rear right cover/Lower right cover/Front right cover



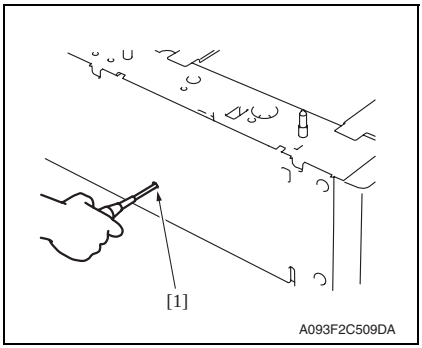
1. Open the right door [1].
2. Remove the right door [1].
3. Remove two screws [2] and remove the rear right cover [3].
4. Remove two screws [4] and remove the lower right cover [5].
5. Remove two screws [6] and remove the front right cover [7].

3.3.2 Rear cover/Left cover



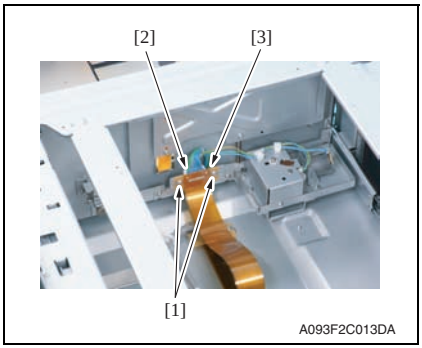
1. Remove four screws [1] and remove the rear cover [2].
2. Remove four screws [3] and remove the left cover [4].

3.3.3 Drawer

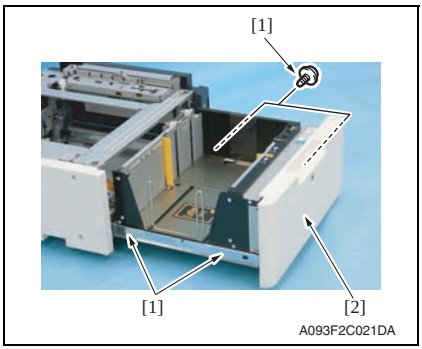


1. Insert a driver into the hole [1] at the back of the feed tray and pull out the paper feed tray.

2. Remove the paper.



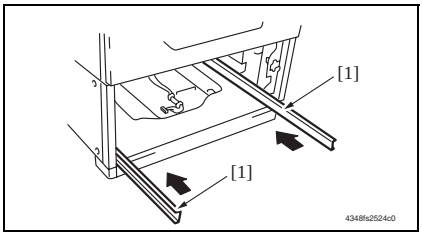
3. Remove two screws [1], the connector [2], and remove the connector board [3].



4. Remove four screws [1] and remove the drawer [2].

NOTE

- **When removing the drawer, be careful not to drop the drawer from the guide rails.**

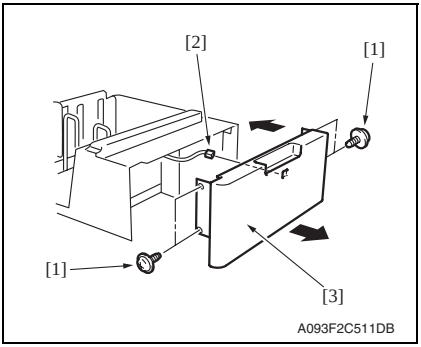


⚠ CAUTION

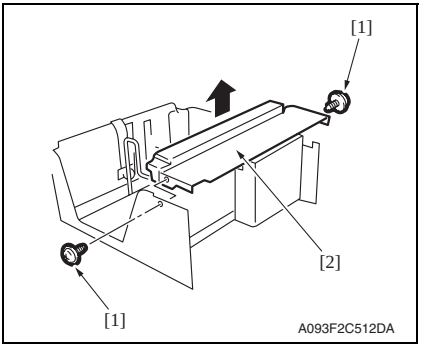
- **To prevent injuries, slide the guide rail [1] into the machine.**

3.3.4 Wire

1. Remove the drawer.
See P.13



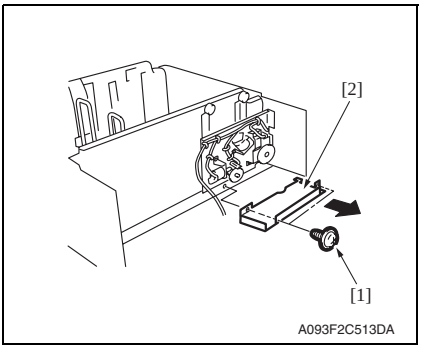
2. Remove four screws [1] and disconnect the connector [2], and remove the front cover assy [3].



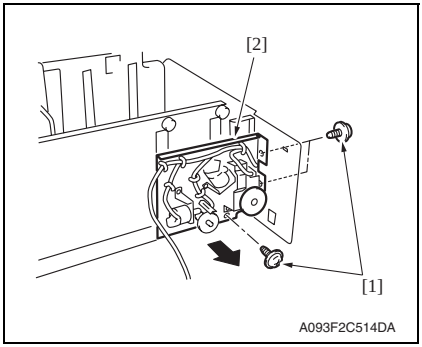
3. Remove two screws [1] and the inner cover assy [2].

NOTE

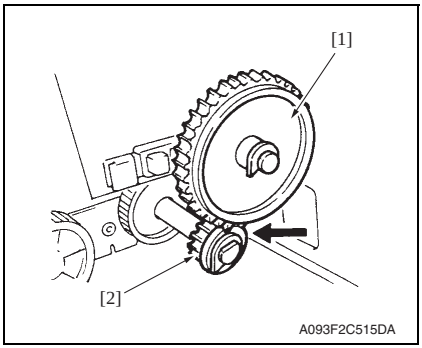
- **Do not peel off pulley protective mylar sheet.**



4. Remove two screws [1] and remove the driver cover [2].

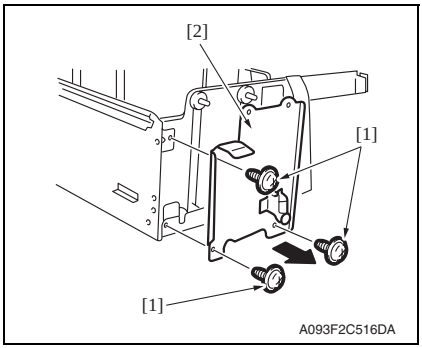


5. Remove three screws [1] and remove the driver mounting plate assy [2].

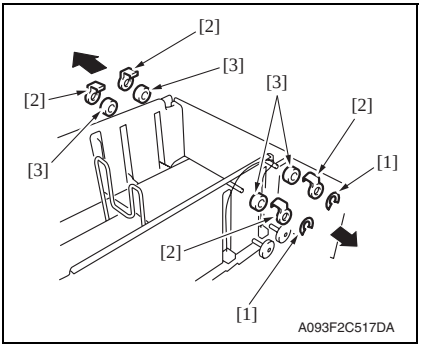


NOTE

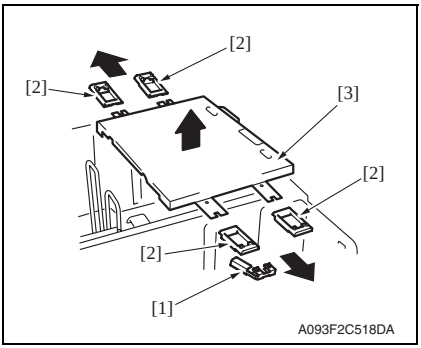
- **When assembling, be sure to engage rib of gear 1 [1] with convex section of gear 2 [2].**



6. Remove three screws [1] and remove the reinforcement bracket assy [2].



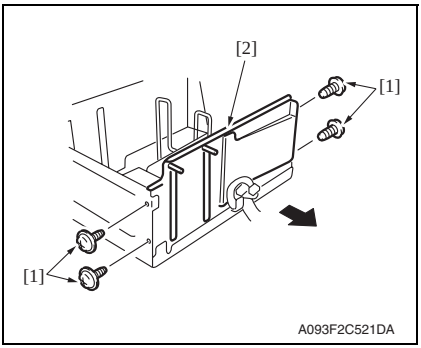
7. Remove two C-clips [1].
8. Remove four pulley covers [2].
9. Unhook four pulleys [3].



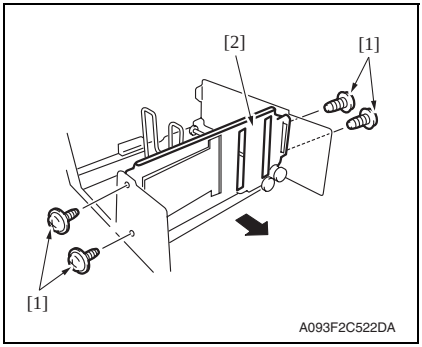
10. Remove the ground plate [1].
11. Remove four cable holding jigs [2] and remove the main drawer [3].

NOTE

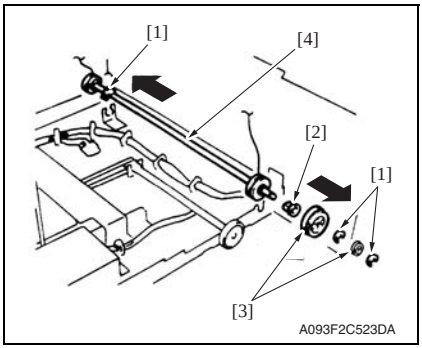
- **Use care not to bend the wires.**



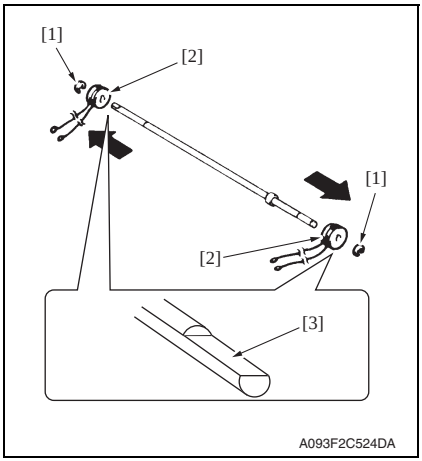
12. Remove four screws [1] and remove the rear trailing edge assy [2].



13. Remove four screws [1] and remove the front trailing edge assy [2].



14. Remove three C-rings [1], the bushing [2], and two gears [3].
15. Remove the feed drum assy [4].



16. Remove two C-rings [1] and the feed drum [2].

NOTE

- **Take care not to lose fixing pins.**
- **When reinstalling the feed drum, check that the direction of the wire coming from both feed drums are the same.**
- **Install so that cut parts [3] at both ends of shaft face up.**

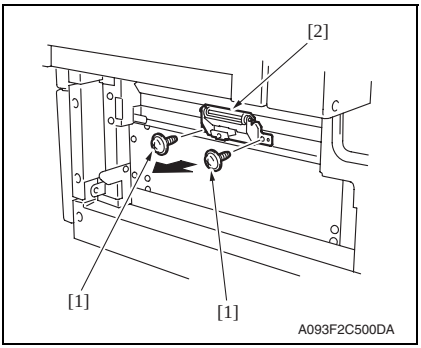
3.4 Cleaning procedure

NOTE

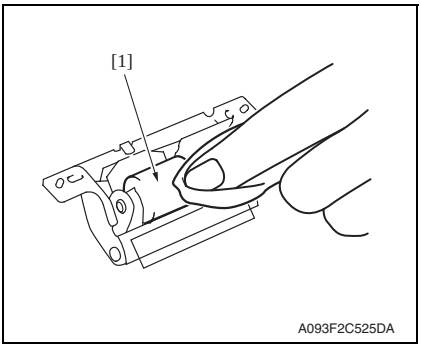
- **The alcohol described in the cleaning procedure represents the isopropyl alcohol.**

3.4.1 Separation roller

1. Remove the right door.
See P.12

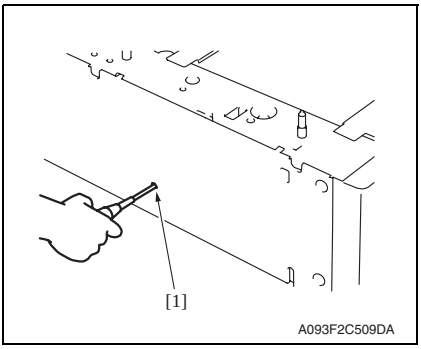


2. Remove two screws [1] and separation roller mounting bracket assy [2].

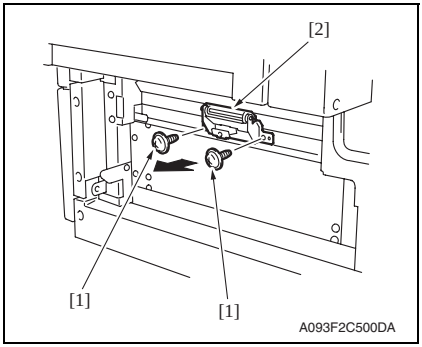


3. Using a cleaning pad dampened with alcohol, wipe the separation roller [1] clean of dirt.

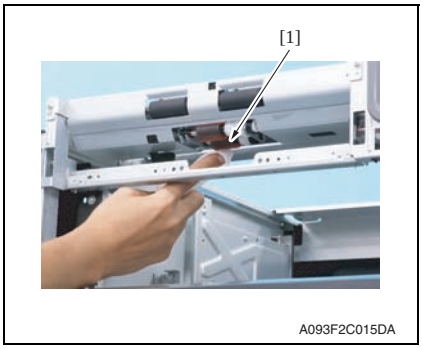
3.4.2 Feed roller



1. Insert a driver into the hole [1] at the back of the feed tray and pull out the paper feed tray.

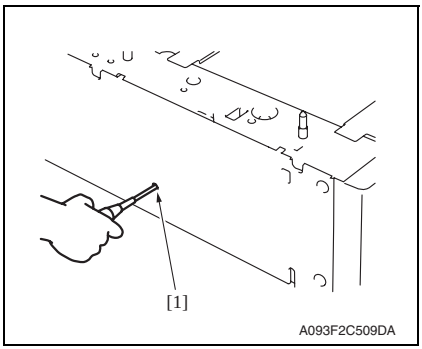


2. Remove two screws [1] and separation roller mounting bracket assy [2].

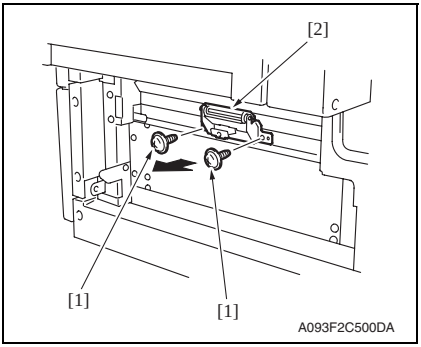


3. Using a cleaning pad dampened with alcohol, wipe the feed roller [1] clean of dirt.

3.4.3 Pick-up roller



1. Insert a driver into the hole [1] at the back of the feed tray and pull out the paper feed tray.



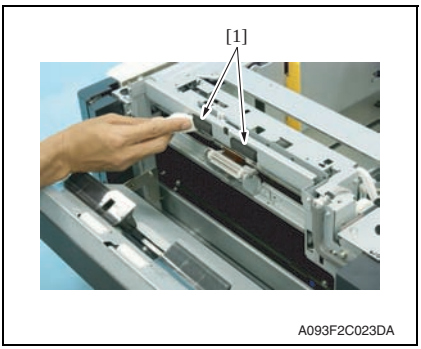
2. Remove two screws [1] and separation roller mounting bracket assy [2].



3. Using a cleaning pad dampened with alcohol, wipe the pick-up roller [1] clean of dirt.

3.4.4 Vertical transport roller

1. Open the right door.



2. Using a cleaning pad dampened with alcohol, wipe the vertical transport roller [1] clean of dirt.

Adjustment/Setting

4. How to use the adjustment section

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

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

- The power supply voltage meets the specifications.
- The power supply is properly grounded.
- The machine shares the power supply with any other machine that draws large current intermittently (e.g., elevator and air conditioner that generate electric noise).
- The installation site is environmentally appropriate: high temperature, high humidity, direct sunlight, ventilation, etc.; levelness of the installation site.
- The defective image attributes to the data itself which is sent from the PC to the printer.
- The density is properly selected.
- 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.**

5. Mechanical adjustment

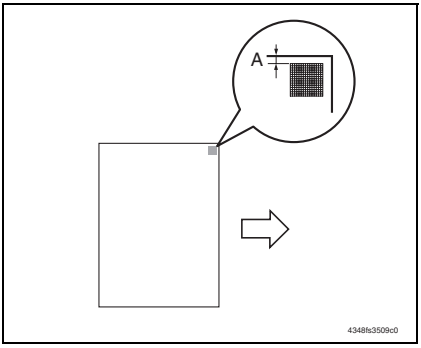
5.1 Adjusting the paper reference position

NOTE

- **Make this adjustment after any of the following procedures has been performed.**
  When the PH unit has been replaced.
  When the image on the print is offset in the sub scan direction.
  When a faint image occurs on the leading edge of the image.

5.1.1 Centering

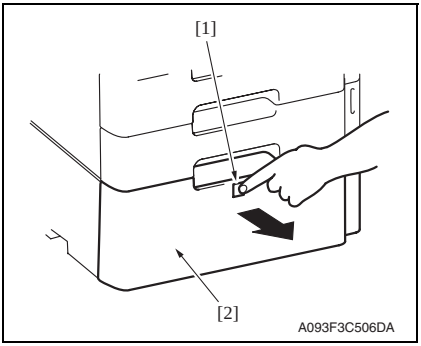
1. Call the Service Mode to the screen.
   See P.202 of the main body service manual.
2. Select [MachineAdjustment] → [Printer Area] → [Centering] → [Tray 4].
3. Press the Menu/Select key.
4. Select [Print] and press the Menu/Select key to let the machine produce a test print.



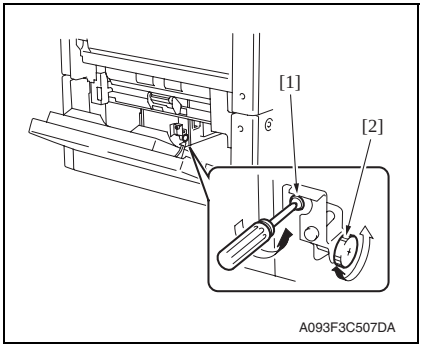
5. Measure the width of printed reference line A.
   Specification: 3.0 mm ± 1.0 mm
6. If the measured width A falls outside the specified range, enter the correction value using the ▲ or ▼ keys.
7. Produce another test print and check to see if width A falls within the specified range.

NOTE

- **If the use of the ▲ or ▼ keys does not allow the measurement to fall within the specified range, perform the following steps.**



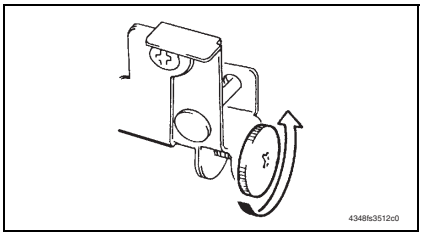
8. Press the drawer release button [1] and then slide out the drawer [2] from the paper feed cabinet.



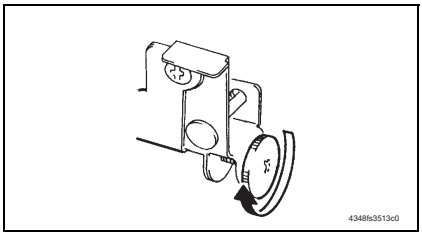
9. Open the right door.
10. Loosen the adjustment screw [1] and turn screw D [2] to make the adjustment.

NOTE

- **Do not damage the passage surface of the right door.**



- If width A is greater than the specified value:
  Turn screw D counterclockwise.

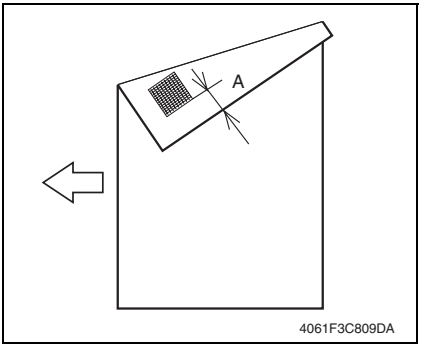


- If width A is smaller than the specified value:
  Turn screw D clockwise.

11. Perform another test print and check the reference deviation.
12. Repeat the adjustment until the reference line falls within the specified range.
13. Tighten the adjustment screw.
14. Press the Menu/Select key.
15. Turn OFF the power switch, then wait for 10 sec. or more and turn ON the power switch.

5.1.2 Centering (Duplex)

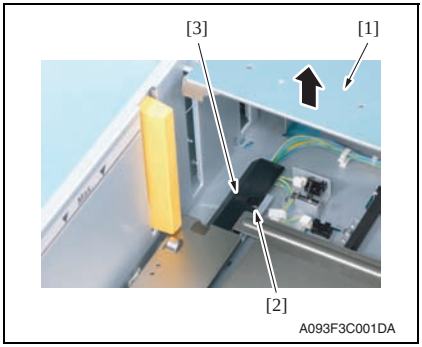
1. Call the Service Mode to the screen.
   See P.202 of the main body service manual.
2. Select [MachineAdjustment] → [Printer Area] → [Centering(Duplex)] → [Tray 4].
3. Press the Menu/Select key
4. Select [Print] and press the Menu/Select key to let the machine produce a test print.



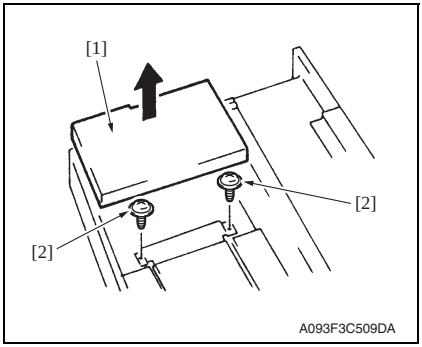
5. Measure the width of printed reference line A.
   Specification: 3.0 mm ± 2.0 mm
6. If the measured width A falls outside the specified range, enter the correction value using the ▲ or ▼ keys.
7. Produce another test print and check to see if width A falls within the specified range.
8. Press the Menu/Select key.
9. Turn OFF the power switch, then wait for 10 sec. or more and turn ON the power switch.

5.2 Shifter movement timing belt adjustment

1. Remove the drawer.
See P.13



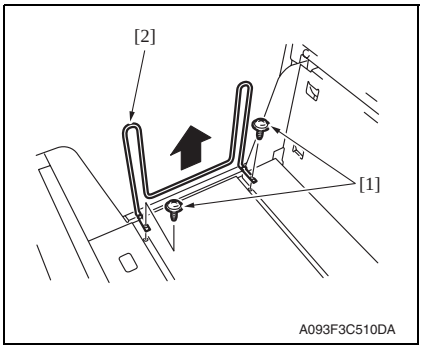
2. While raising the main tray [1], remove the screw [2] and the connector cover [3].



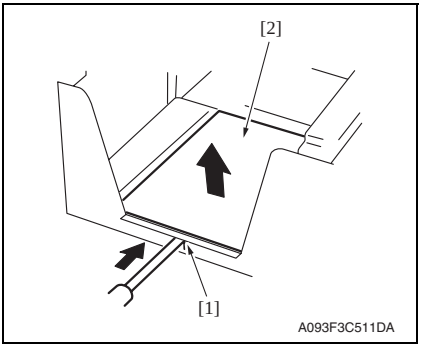
3. While raising the main tray [1], remove two screws [2] that hold the shift tray in position.

NOTE

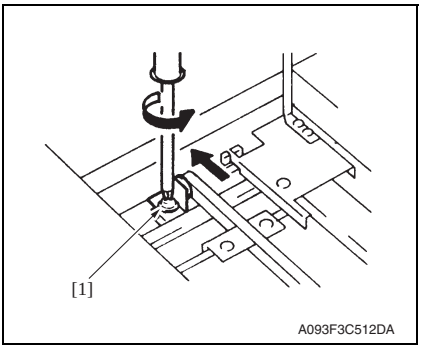
- **When reinstalling, use caution because the wire of the main tray [1] comes off easily.**



4. Remove two screws [1] and remove the shifter [2].



5. Push the tab [1] of the shift tray [2] as shown on the left and release the lock.
6. Remove the shift tray [2].



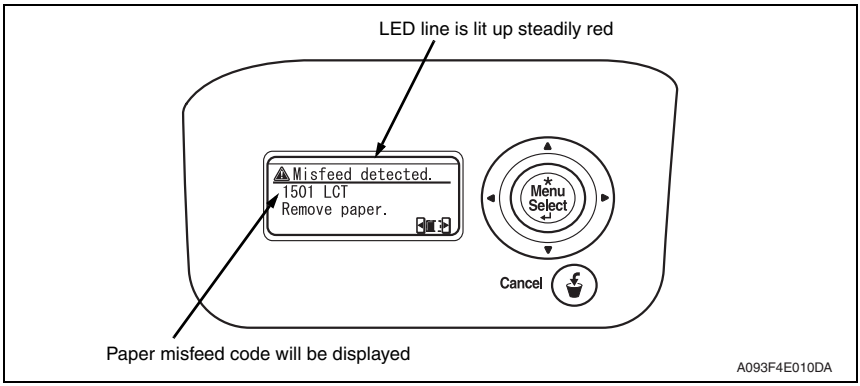
7. Loosen the screw [1] fixing the tension pulley assy as shown on the left and move it in the direction of the arrow.
8. After moving the shifter, tighten the fixing screw [1].

Troubleshooting

6. Jam display

6.1 Misfeed display

- When a paper misfeed occurs, the LED line lights up red steadily and the misfeed message is displayed on the control panel of the machine.

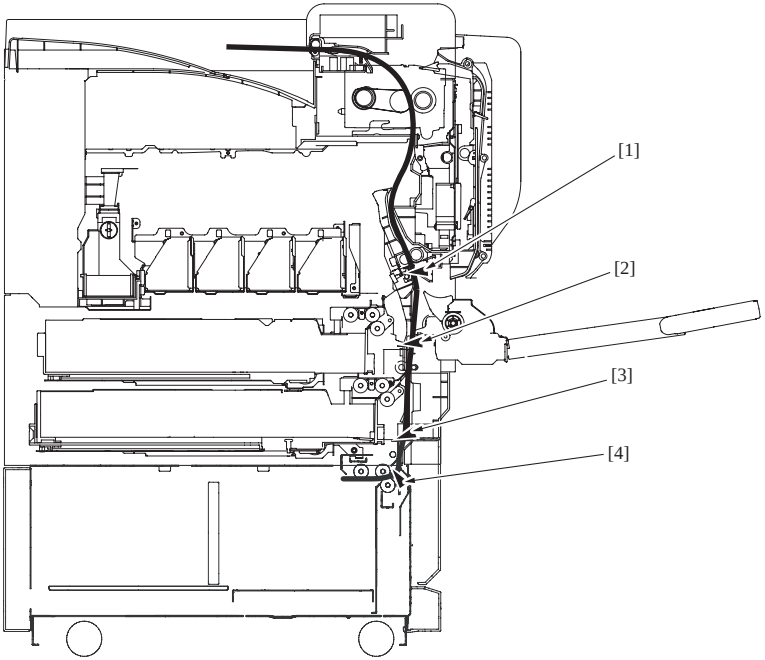


Code	Misfeed location	Misfeed access location	Action
1501	LCT paper feed section	Right door	P.30
2001	LCT paper vertical transport section	Vertical transport door	

6.1.1 Misfeed display resetting procedure

- Open the corresponding door, clear the sheet of paper misfed, and close the door.

6.2 Sensor layout



[1]	Sensor in front of tim. roller	PS23	[3]	Vertical transport sensor	PS2
[2]	Paper feed tray 3 vertical transport sensor	PS16	[4]	Paper feed sensor	PS1

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 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.

6.3.2 LCT paper feed section/vertical transport section misfeed

A. Detection timing

Type	Description
LCT paper feed section misfeed detection	The leading edge of the paper does not block the paper feed sensor (PS1) or the vertical transport sensor (PS2) even after the set period of time has elapsed after the paper feed motor (M1) is energized.
LCT vertical transport section misfeed detection	The paper feed tray 3 vertical transport sensor (PS16) is not blocked even after the lapse of a given period of time after the vertical transport sensor (PS2) has been blocked by a paper.
LCT 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 timing roller at LCT paper feed.
LCT detection of paper remaining	The vertical transport sensor (PS2) is blocked when the power switch is set to ON, a door or cover is opened and closed, or a misfeed or malfunction is reset.
	The paper feed sensor (PS1) is blocked when the power switch is set to ON, a door or cover is opened and closed, or a misfeed or malfunction is reset.
Misfeed detected as a result of delayed deactivation of sensor	The paper feed sensor (PS1) is not unblocked even after the lapse of a given period of time after PS1 has been blocked by a paper.
	The vertical transport sensor (PS2) is not unblocked even after the lapse of a given period of time after PS2 has been blocked by a paper.

B. Action

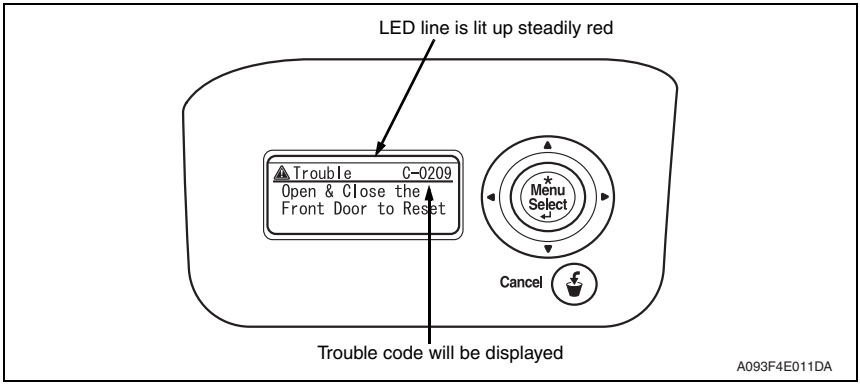
Relevant electrical parts	
Paper feed sensor (PS1) Vertical transport sensor (PS2) Paper feed tray 3 vertical transport sensor (PS16) Paper feed motor (M1) Sensor in front of tim. roller (PS23)	PC control board (PCCB) MFP board (MFPB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Initial check items	—	—
2	PS23 I/O check	PRCB CN1PRCB-3 (ON)	magicolor 8650 D-18
3	PS1 I/O check	PCCB PJ5PCCB-2 (ON)	PC-406 F-9
4	PS2 I/O check	PCCB PJ5PCCB-5 (ON)	PC-406 F-9
5	PS16 I/O check	PRCB CN9PRCB-11 (ON)	magicolor 8650 D-10
6	M1 operation check	PCCB PJ6PCCB-1 to 4	PC-406 F-10
7	PCCB replacement	—	—
8	MFPB replacement	—	—

7. Trouble code

7.1 Trouble code display

- The machine's CPU performs a self-diagnostics function that, on detecting a malfunction, displays the corresponding malfunction code on the control panel.



7.2 Trouble code list

Code	Item	Description
C0001	LCT communication error	• Due to a software malfunction, etc., the time on the watchdog timer has run out and a reset is performed.
C0209	LCT elevator motor failure	• The elevator motor pulse sensor (PS10) cannot detect both edges of H/L even after the set period of time has elapsed while the elevator motor (M5) is turning backward/forward (raise/lower).
C0210	LCT lift failure	• The lift-up upper sensor (PS4) is not blocked even after the set period of time has elapsed after the paper lift-up operation began. • The lift-up upper sensor (PS4) is not blocked even after the set pulse is detected by the elevator motor pulse sensor (PS10) after the paper lift-up operation began. • The lift-up lower sensor (PS13) is not unblocked even after the set pulse is detected by the elevator motor pulse sensor (PS10) after the paper lift-up operation began. • The lift-up upper sensor (PS4) is not blocked even after the set period of time has elapsed after the paper lift-up operating. • The lift-up lower sensor (PS13) is not blocked even after the set period of time has elapsed after the paper lift-down operation began. • The lift-up lower sensor (PS13) is not blocked even after the set pulse is detected by the elevator motor pulse sensor (PS10) after the paper lift-down operation began. • The lift-up upper sensor (PS4) is not unblocked even after the set pulse is detected by the elevator motor pulse sensor (PS10) after the paper lift-down operation began. • The lower over run sensor (PS7) is blocked while the paper lift-down operating.
C0212	LCT ejection failure	• The drawer cannot be determined to be out of position even after the set period of time has elapsed after the tray lock solenoid (SD1) is energized after the lowering operation is finished.
C0213	LCT shift gate malfunction	• The division board position sensor (PS14) cannot be set to L even after the set period of time has elapsed after the operation of the division board position motor (M3) began with the division board position sensor (PS14) set to L.

Code	Item	Description
C0214	LCT shifting failure	• The shift tray stop sensor (PS11) is not blocked even after the set period of time has elapsed after the shift operation began (shift to the right). • The shift tray stop sensor (PS11) is not blocked even after the set pulse is detected by the shift motor pulse sensor (PS8) after the shift operation began (shift to the right). • The shift tray home sensor (PS12) is not unblocked even after the set pulse is detected by the shift motor pulse sensor (PS8) after the shift operation began (shift to the right). • The shift tray home sensor (PS12) is not blocked even after the set period of time has elapsed after the return operation began (shift to the left). • The shift tray home sensor (PS12) is not blocked even after the set pulse is detected by the shift motor pulse sensor (PS8) after the return operation began (shift to the left). • The shift tray stop sensor (PS11) is not unblocked even after the set pulse is detected by the shift motor pulse sensor (PS8) after the return operation began (shift to the left).
C0215	LCT shift motor malfunction	• The shift motor pulse sensor (PS8) cannot detect both edges of H/L even after the set period of time has elapsed while the shift motor (M4) is turning backward/forward (raise/lower).

- Open and close the front door, or turn OFF the power switch. Then, wait for 10 sec. or more and turn ON the power switch to reset the malfunction display.

7.3 Solution

7.3.1 C0001: LCT communication error

Relevant electrical parts	
PC control board (PCCB)	

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Turn OFF the power switch, wait for 10 sec. or more, and turn ON the power switch.	—	—
2	PCCB replacement	—	—

7.3.2 C0209: LCT elevator motor failure

Relevant electrical parts	
Elevator motor (M5) Elevator motor pulse sensor (PS10)	Relay board (REYB) PC control board (PCCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Check the motor and sensor connectors for proper connection, and correct as necessary.	—	—
2	Check the connector of motor for proper drive coupling, and correct as necessary.	—	—
3	PS10 I/O check	REYB PJ2REYB<A>-5 (ON)	PC-406 K-5
4	M5 operation check	REYB PJ2REYB<B>-6 to 7	PC-406 K-6 to 7
5	REYB replacement	—	—
6	PCCB replacement	—	—

7.3.3 C0210: LCT lift failure

Relevant electrical parts	
Lift-up upper sensor (PS4) Lift-up lower sensor (PS13) Elevator motor pulse sensor (PS10) Lower over run sensor (PS7)	PC control board (PCCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Check the sensor connectors for proper connection, and correct as necessary.	—	—
2	PS4 I/O check	PCCB PJ5PCCB-12 (ON)	PC-406 F-8
3	PS13 I/O check	REYB PJ2REYB<A>-9 (ON)	PC-406 K-3
4	PS10 I/O check	REYB PJ2REYB<A>-5 (ON)	PC-406 K-5
5	PS7 I/O check	REYB PJ2REYB<A>-2 (ON)	PC-406 K-6
6	PCCB replacement	—	—

7.3.4 C0212: LCT lock release failure

Relevant electrical parts	
Tray lock solenoid (SD1)	PC control board (PCCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Check the SD1 connector for proper connection, and correct as necessary.	—	—
2	SD1 operation check	PCCB PJ7PCCB-4 (ON)	PC-406 F-10
3	PCCB replacement	—	—

7.3.5 C0213: LCT shift gate operation failure

Relevant electrical parts	
Division board position sensor (PS14) Division board position motor (M3)	PC control board (PCCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Check the motor and sensor connectors for proper connection, and correct as necessary.	—	—
2	Check the connector of motor for proper drive coupling, and correct as necessary.	—	—
3	PS14 I/O check	REYB PJ2REYB<B>-1 (ON)	PC-406 K-7
4	M3 operation check	REYB PJ2REYB<B>-2 to 3	PC-406 K-7
5	PCCB replacement	—	—

7.3.6 C0214: LCT shift failure

Relevant electrical parts	
Shift motor pulse sensor (PS8) Shift tray stop sensor (PS11) Shift tray home sensor (PS12)	PC control board (PCCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Check the sensor connectors for proper connection, and correct as necessary.	—	—
2	PS8 I/O check	REYB PJ2REYB<A>-3 (ON)	PC-406 K-6
3	PS11 I/O check	REYB PJ2REYB<A>-7 (ON)	PC-406 K-4
4	PS12 I/O check	REYB PJ2REYB<A>-8 (ON)	PC-406 K-4
5	PCCB replacement	—	—

7.3.7 C0215: LCT shift motor failure

Relevant electrical parts	
Shift motor (M4) Shift motor pulse sensor (PS8)	PC control board (PCCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Check the motor and sensor connectors for proper connection, and correct as necessary.	—	—
2	Check the connector of motor for proper drive coupling, and correct as necessary.	—	—
3	PS8 I/O check	REYB PJ2REYB<A>-3 (ON)	PC-406 K-6
4	M4 operation check	REYB PJ2REYB<B>-4 to 5	PC-406 K-7
5	PCCB replacement	—	—

Blank Page

KONICA MINOLTA

SERVICE MANUAL

FIELD SERVICE

FS-519/PK-515 /OT-602

2007.10

KONICA MINOLTA BUSINESS TECHNOLOGIES, INC. Ver. 1.0

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
2007/10	1.0	—	Issue of the first edition

CONTENTS

FS-519/PK-515/OT-602

General

1. Product specifications 1
1.1 FS-519 1
1.2 PK-515 4
1.3 OT-602 5

Maintenance

2. Periodical check 7
2.1 Maintenance procedure (Periodical check parts) 7
2.1.1 Replacing the paddles 7
2.1.2 Replacing the cleaning pad 10
2.1.3 Lubricating the worm gear and replacing the cover film 11
2.1.4 Cleaning of the rollers and rolls 14
2.1.5 Cleaning of the paddles 16
3. Other 17
3.1 Disassembly/adjustment prohibited items 17
3.2 Precautions to be observed when option configuration is changed 18
3.2.1 Setting the exit tray detection position 18
3.3 Disassembly/Assembly/Cleaning list (Other parts) 19
3.3.1 Disassembly/Assembly parts list 19
3.4 Disassembly/Assembly procedure 20
3.4.1 Finisher unit right front cover 20
3.4.2 Finisher unit left front cover 20
3.4.3 Finisher unit rear cover 20
3.4.4 Finisher unit upper cover 21
3.4.5 Front door 21
3.4.6 Middle guide 22
3.4.7 Intake cover 23
3.4.8 Tray unit front cover/Tray unit rear cover/Connector cover 23
3.4.9 Tray 1/Tray 2 24
3.4.10 Output tray (OT-602): Option 24
3.4.11 Tray unit 25
3.4.12 Finisher unit 28
3.4.13 Changing the height of the stand table 29

3.4.14 Height and angle adjustment of stand table 34
3.4.15 Stapler unit 36
3.4.16 Punch kit (PK-515): Option 37
3.4.17 Exit roller motor/Storage paddle drive clutch/Exit upper roller/ Storage paddle 38
3.4.18 Exit paddle drive clutch/Exit lower roller 43
3.4.19 Aligning section 46
3.4.20 Elevator motor/Timing belt 49
3.4.21 Shutter drive gear 55
3.4.22 Duplex guide solenoid 56
3.4.23 FS control board 58

Adjustment/Setting

4. How to use the adjustment section 59
5. Finisher operations 60
5.1 Punch Stop Position (PK-515) 60
5.2 Punch Reg. Loop (PK-515) 61
5.3 Punch Option 61
5.3.1 Punch Kit type 61
5.3.2 # of Punch-Holes 61
6. Mechanical adjustment 62
6.1 Punch hole deviance adjustment (PK-515) 62
6.2 Staple position adjustment 63
6.3 Staple home position sensor position adjustment 65
6.4 Adjustment of clearance between stapler and FD stopper 66

Troubleshooting

7. Jam display 67
7.1 Misfeed display 67
7.1.1 Misfeed display resetting procedure 67
7.2 Sensor layout 68
7.3 Solution 69
7.3.1 Initial check items 69
7.3.2 Solution when paper curl occurs 69
7.3.3 Transport section misfeed 70
7.3.4 Exit section misfeed 71
7.3.5 Finisher bundle exit misfeed 71
7.3.6 Finisher staple misfeed 72
7.3.7 Finisher punch misfeed (PK-515) 72

8. Malfunction code 73
8.1 Trouble code 73
8.2 Solution 75
8.2.1 C1004: FNS communication error 75
8.2.2 C1183: Elevator motor ascent/descent drive failure 75
8.2.3 C1190: Aligning plate 1 drive failure 76
8.2.4 C1191: Aligning plate 2 drive failure 76
8.2.5 C11A0: Paper holding drive failure 77
8.2.6 C11A1: Exit roller pressure/retraction failure 77
8.2.7 C11A3: Shutter drive failure 78
8.2.8 C11B0: Staple unit CD drive failure 78
8.2.9 C11B2: Staple drive failure 79
8.2.10 C11C0: Punch cam motor unit failure 79
8.2.11 C1301: Finishing option cooling fan motor failure 80
8.2.12 CC155: Finisher ROM failure 80

Blank Page

General

1. Product specifications

1.1 FS-519

A. Type

Name	Multi staple finisher built into the printer
Installation	Installed in the printer
Document alignment	Center
Consumables	Staples

B. Functions

Modes	Sort, group, sort offset, group offset, sort stable, and punch (when PK-515 is mounted)

C. Paper

(1) Non sort/sort/group

Type	Size	Weight	Max. capacity		
Plain paper Recycled paper	A6S, A5S/A5, B5S/B5, B6S, A4S/A4, B4, A3, A3Wide 5-1/2 x 8-1/2S/5-1/2 x 8-1/2, 8-1/2 x 11S/8-1/2 x 11, 8-1/2 x 14, 11 x 17, 12-1/4 x 18 StatementS/Statement, LetterS/Letter, Legal Max. 311.15 mm x 457.2 mm 12.25 x 18 inch Min. 90 mm x 139.7 mm 3.5 x 5.5 inch	60 to 90 g/m² 16 to 24 lb	Output tray1	200 sheets	
			Output tray2	A4S, 8-1/2 x 11S/LetterS or less	1000 sheets
				B4, 8-1/2 x 14/Legal or greater	500 sheets
Government standard postcards		91 to 210 g/m² 24.25 to 55.75 lb	20 sheets		
Envelope		—			
OHP transparencies		—			
Translucent paper		—			
Label		—			
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			
Thick paper 4		257 to 271 g/m² 68.25 to 72 lb			
Long size paper *	210 mm to 297 mm x 457.2 mm to 1200 mm	127 to 160 g/m² 33.75 to 42.5 lb	—		

*: Long size paper is available only for non-sort mode.

(2) Sort offset/group offset

Type	Size	Weight	Max. capacity		
Plain paper Recycled paper	A5, B5S/B5, A4S/A4, B4, A3 8-1/2 x 11S/8-1/2 x 11, 8-1/2 x 14, 11 x 17 LetterS/Letter, Legal Max. 297 mm x 431.8 mm 11.75 x 17 inch Min. 182 mm x 148.5 mm 7.25 x 5.75 inch	60 to 90 g/m² 16 to 24 lb	Output tray1	200 sheets	
			Output tray2	A4S, 8-1/2 x 11S, LetterS or less	1000 sheets
				B4, 8-1/2 x 14, Legal or greater	500 sheets
Thick paper		91 to 271 g/m² 24.25 to 72 lb	—		

(3) Sort staple

Type	Size	Weight	Max. capacity			No. of sheets to be stapled
Plain paper Recycled paper	A5, B5S/B5, A4S/A4, B4, A3 8-1/2 x 11S/8-1/2 x 11, 8-1/2 x 14, 11 x 17 LetterS/Letter, Legal Max. 297 mm x 431.8 mm 11.75 x 17 inch Min. 182 mm x 148.5 mm 7.25 x 5.75 inch	60 to 90 g/m² 16 to 24 lb	Output tray1	200 sheets		50 sheets*
			Output tray2	A4S,8-1/2 x 11S, LetterS or less	1000 sheets	
				B4, 8-1/2 x 14, Legal or greater	500 sheets	
Thick paper		91 to 120 g/m² 24.25 to 32 lb	—			30 sheets
		121 to 209 g/m² 32.25 to 55.5 lb	—			15 sheets

*: The number of sheets to be stapled is limited for high-density images.
(Color wise: 20 sheets x 20 sets)

(4) Punch

Type	Size	Weight	Punched holes	Output tray
Plain paper Recycled paper	B5S/B5 to A3 8-1/2 x 11S/8-1/2 x 11/LetterS/ Letter to 11 x 17	60 to 256 g/m² 16 to 68 lb	2, 3, 4 *	Output tray1 Output tray2 OT-602 MT-502

*: The punched holes is different because of the difference of area.

D. Stapling

Staple filling mode	Dedicated staple cartridge (5000 staples)	
Staple detection	Available (Nearly Empty: 20 remaining staples)	
Stapling position	Back of the corner (30 degree)	A4, A3, B5, B4 8-1/2 x 11, 11 x 17 Letter
	Front of the corner (30 degree)	
	Back of the corner (Parallel)	A4S, B5S, A5 8-1/2 x 11S, 8-1/2 x 14 LetterS, Legal
	Front of the corner (Parallel)	
	Side: Parallel 2 point	A4S/A4, A3, B5S/B5, B4, A5 8-1/2 x 11S/8-1/2 x 11, 8-1/2 x 14, 11 x 17 LetterS/Letter, Legal
Manual staple	None	

E. Hole Punch

No. of holes	Metric: 4 holes, Inch: 2 holes/3 holes, Sweden: 4 holes
Punch dust full detection	Available

F. Machine specifications

Power requirements	DC 24 V (supplied from the main body)
	DC 5.1 V (supplied from the main body)
Max. power consumption	66 W or less
Dimensions	352 mm (W) x 558 mm (D) x 589 mm (H) 13.75 inch (W) x 22 inch (D) x 23.25 inch (H) 471 mm (W) x 558 mm (D) x 589 mm (H) *1 18.5 inch (W) x 22 inch (D) x 23.25 inch (H) *1
Weight	33.2 kg (73.25 lb)

*1: Size when the paper output tray is pulled out

G. Operating environment

- Conforms to the operating environment of the main body.

1.2 PK-515

A. Type

Name	Punch kit PK-515	
Installation	Built into the finisher	
Paper size	Metric	B5S, A4, B4, A3
	Inch (2 holes)	8-1/2 x 11S/8-1/2 x 11, 8-1/2 x 14, 11 x 17 LetterS/Letter, Legal
	Inch (3 holes)	8-1/2 x 11, 11 x 17 Letter
	Sweden	B5S, A4, B4, A3
Paper type	Plain paper (60 to 209 g/m^2, 16 to 55.5 lb) Thick paper 1/2/3 (91 to 256 g/m^2, 24.25 to 68 lb)	
Punch hole	Metric: 2 holes, 4 holes, Inch: 2/3 hole, Sweden: 4 holes	
Number of stored punch wastes	Metric (2 holes): For 2,500 sheets of paper (64 g/m^2) Metric (4 holes): For 1,500 sheets of paper (80 g/m^2) Inch (2/3 holes): For 1,000 sheets of paper (75 g/m^2) Sweden (4 holes): For 1,500 sheets of paper (80 g/m^2)	
Document alignment	Center	

B. Machine specifications

Power requirements	Supplied by the finisher
Dimensions	114 mm (W) x 461 mm (D) x 106 mm (H) 4.5 inch (W) x 18.25 inch (D) x 4.25 inch (H)
Weight	Approx. 1.9 kg (4.25 lb) or less

C. Operating environment

- Conforms to the operating environment of the main body.

1.3 OT-602

A. Type

Name	Output tray OT-602
Installation	Fixed to the finisher
Mode	Sort, group, and sort stable Sort, group, sort offset, group offset, and sort stable
Number of bins	1 bin
Document alignment	Center

B. Paper

Mode	Size	Type		Capacity
Sort/group	A6S, A5S/A5, B5S/B5, B6S, A4S/A4, B4, A3, A3Wide 5-1/2 x 8-1/2S/5-1/2 x 8-1/2, 8-1/2 x 11S/8-1/2 x 11, 8-1/2 x 14, 11 x 17 Max. 311.15 mm x 457.2 mm 12.25 x 18 inch Min. 90 mm x 139.7 mm 3.5 x 5.5 inch	Plain paper	60 to 90 g/m², 16 to 24 lb	200 sheets (up to a height of 24 mm)
		Recycled paper		
		Special	Government standard postcards	—
			Envelope	
			OHP transparencies	
			Translucent paper	
			Label	
		Thick paper	91 to 271 g/m² 24.25 to 72 lb	20 sheets
Sort offset/ group offset	A5, B5S/B5, A4S/A4, B4, A3 8-1/2 x 11S/8-1/2 x 11, 8-1/2 x 14, 11 x 17 Max. 297 mm x 431.8 mm 11.75 x 17 inch Min. 182 mm x 148.5 mm 7.25 x 5.75 inch	Plain paper	60 to 90 g/m², 16 to 24 lb	200 sheets (up to a height of 24 mm)
		Recycled paper		
		Thick paper	91 to 271 g/m² 24.25 to 72 lb	—
Sort stable		Plain paper	60 to 90 g/m², 16 to 24 lb	200 sheets or 20 prints (up to a height of 24 mm)
		Recycled paper		
		Thick paper	91 to 209 g/m² 24.25 to 55.5 lb	—

C. Machine specifications

Dimensions	282 mm (W) x 368 mm (D) x 57 mm (H) 11 inch (W) x 14.5 inch (D) x 2.25 inch (H)
Weight	0.7 kg (1.5 lb)

D. Operating environment

- Conforms to the operating environment of the main body.

NOTE

How product names appear in the document

- **FS-519: Finisher**
- **PK-515: Punch kit**
- **OT-602: Output tray**

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.**

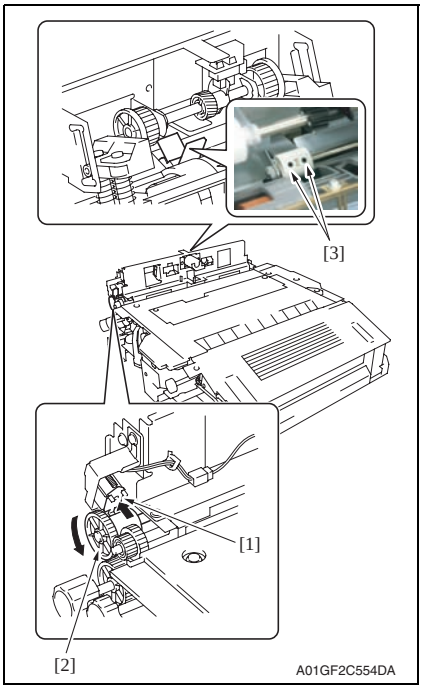
2.1.1 Replacing the paddles

A. Periodically replaced parts/cycle

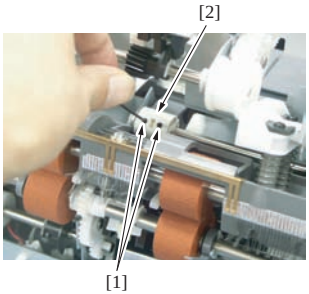
- Paddles: Every 800,000 prints

B. Procedure

1. Remove the finisher unit.
See P.28

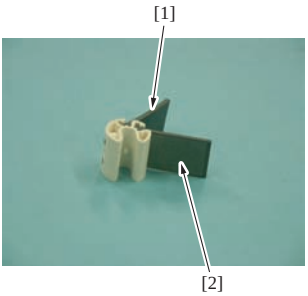


2. While pushing the plunger [1], turn the gear [2] in the direction of the arrow until the screws [3] appear as shown in the illustration.



A01GF2C555DA

3. Loosen two screws [1] and remove the paddle holder assy [2].

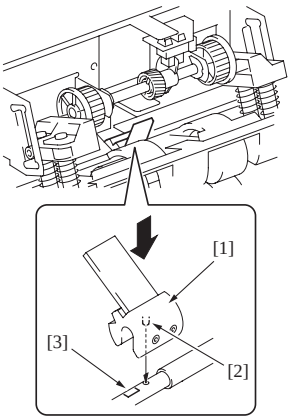


A01GF2C553DA

4. Remove two paddles [1] [2] and replace them with new ones.

NOTE

- **When installing new paddles, be sure to install the paddle covered with black film [1] and the paddle covered with transparent film [2] to their original position.**
- **If there is difficulty in installing the paddles, apply alcohol to the root of the paddles and install them.**

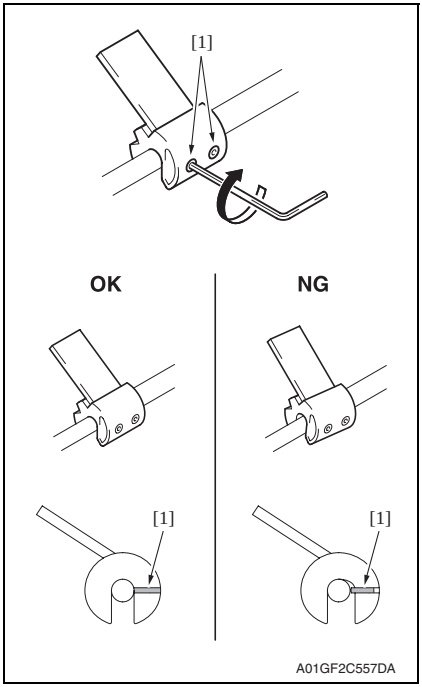


A01GF2C556DA

5. Install the paddle holder assy [1].

NOTE

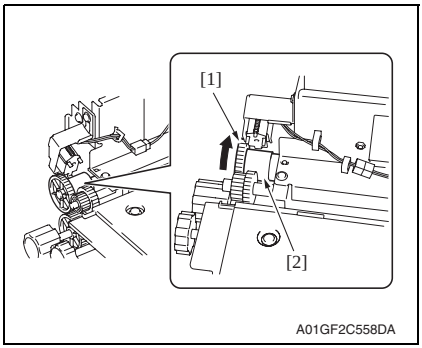
- **To reinstall the paddle holder assy, place it where its locating pin [2] is aligned with the hole on the shaft. Attach the paddle holder assy onto the shaft by first pressing the assy on the side where the shaft has a depression [3].**



6. Secure the paddle holder assy by tightening two screws [1].

NOTE

- **When tightening the two set screws, lightly press the paddle so that it is fixed without any tilt.**
- **For proper set screw tightening to fix the paddle, turn each set screw only one quarter (1/4) of a turn after the set screw tip has reached the shaft.**



NOTE

- **After reinstalling the paddle holder assy, check to make sure that the collar [2] remains still when you are turning the gear [1].**

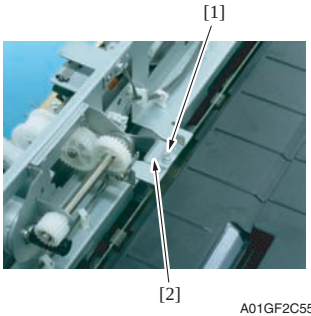
2.1.2 Replacing the cleaning pad

A. Periodically replaced parts/cycle

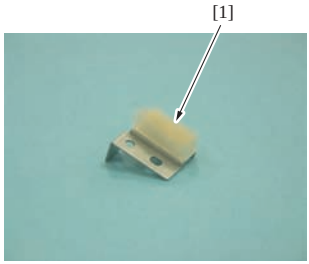
- Cleaning pad: Every 800,000 prints

B. Procedure

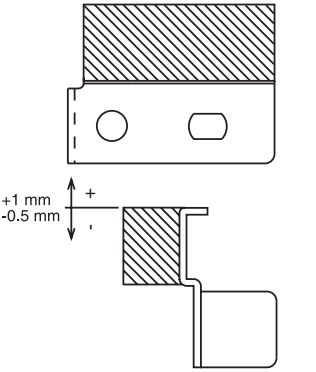
1. Remove the finisher unit.
See P.28



2. Remove the screw [1] and remove the cleaning pad [2].



3. Peel off the cleaning pad [1].



4. To reinstall, reverse the order of removal.

NOTE

- **Before attaching a new cleaning pad, clean the metal surface where the new cleaning pad is attached.**
- **Align the right ends of the new cleaning pad and the metal as shown in the illustration.**

2.1.3 Lubricating the worm gear and replacing the cover film

A. Periodically lubricated parts/cycle

- Worm gear: Every 800,000 prints

B. Periodically replaced parts/cycle

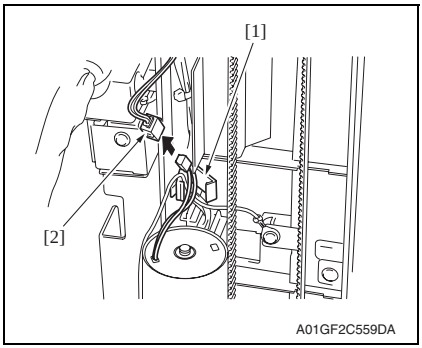
- Cover film: Every 800,000 prints

C. Procedure

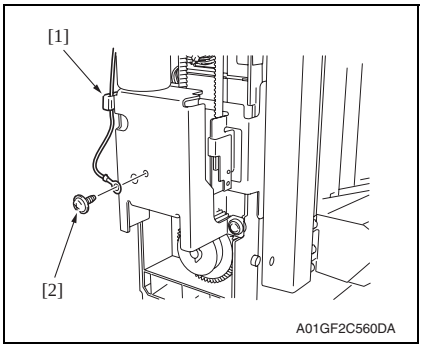
NOTE

- **Before the following lubrication and replacement work, make sure to remove optional SD-505 and MT-502 when the finisher is equipped with these options.**

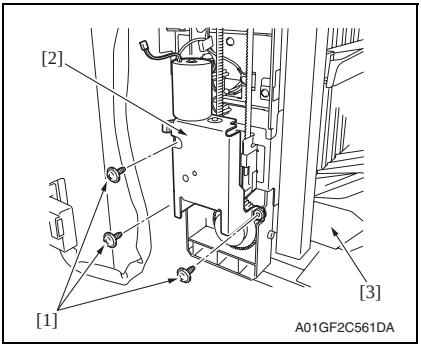
1. Turn the power switch ON. Then turn the power switch OFF when the tray reaches the lowest position during the initial operation.
2. Remove the tray unit rear cover.
See P.23



3. Remove the wire saddle [1] and disconnect the connector [2].



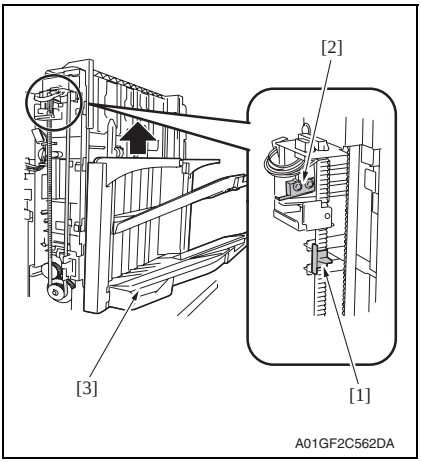
4. Remove the wire saddle [1] and the screw [2]. Remove the ground terminal.



5. Remove three screws [1] and remove the elevator motor assy [2].

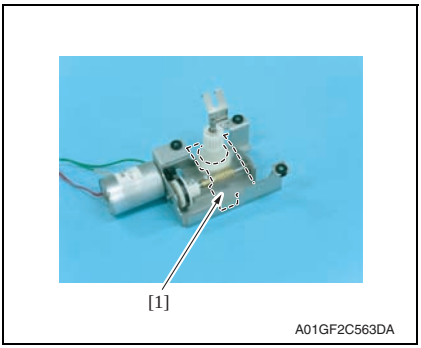
NOTE

- **Remove the elevator motor assy while holding the lower part of the tray [3] with your hand.**

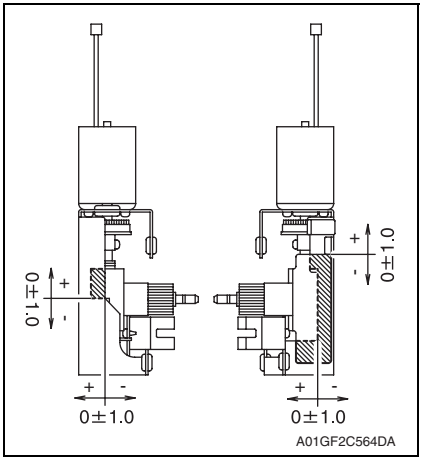


NOTE

- **Before reinstalling the elevator motor assy, raise the tray [3] until the lever [1] attached on the timing belt moves to the position lower than that of the sensor [2]. In that state, reinstall the elevator motor assy.**

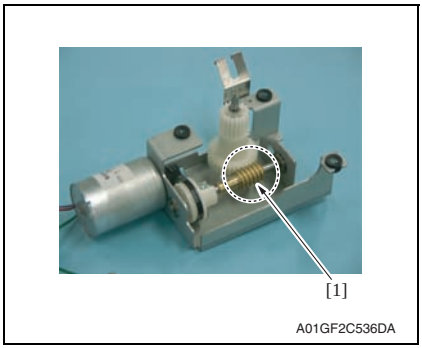


6. Remove the cover film [1] by peeling off its adhesive tape.



NOTE

- **Before attaching a new cover film, clean the metal surface where the new cover film is attached.**
- **Align the right ends of the new cover film and the metal as shown in the illustration.**



7. Apply the following grease to the worm gear [1].
Material: Molykote EM-50L grease
(No.: 4478 7801 ##)

8. To reinstall, reverse the order of removal.

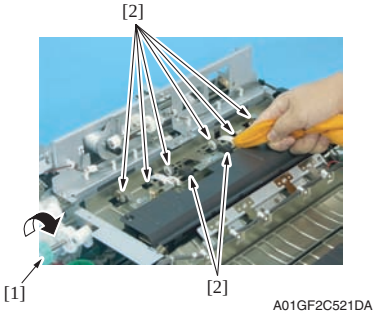
2.1.4 Cleaning of the rollers and rolls

A. Periodically cleaning parts/cycle

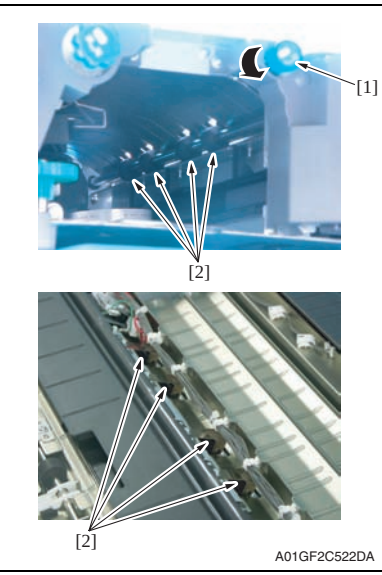
- Rollers and rolls: Every 300,000 prints

B. Procedure

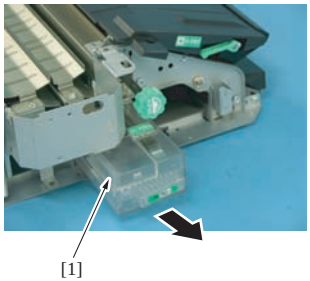
1. Remove the finisher unit.
See P.28
2. Remove the finisher unit upper cover.
See P.21



3. While turning processing knob FN5 [1], wipe the roller and roll [2] using a soft cloth dampened with alcohol.

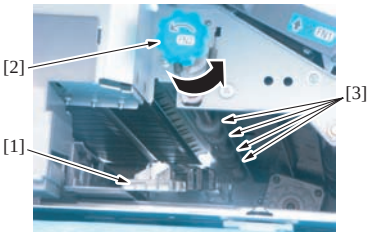


4. While turning processing knob FN4 [1], wipe the roller and roll [2] using a soft cloth dampened with alcohol.



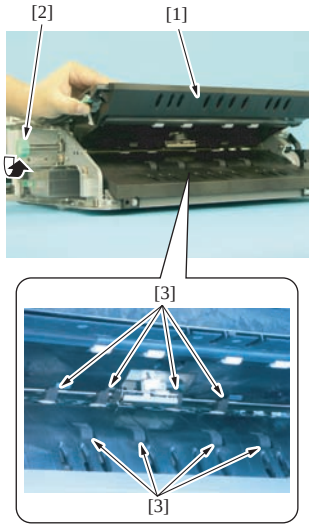
A01GF2C523DA

5. Remove punch waste storage box FN3.1 [1].
(only when PK-515 is installed)



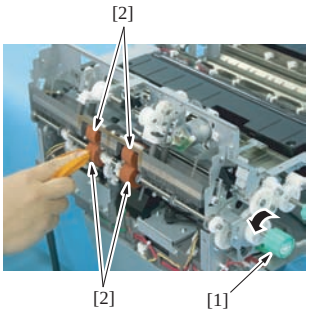
9J08F2C004DA

6. Lower processing guide FN3 [1].
7. While turning processing knob FN2 [2], wipe the roll [3] using a soft cloth dampened with alcohol.



A01GF2C524DA

8. Upper processing guide FN1 [1].
9. While turning processing knob FN2 [2], wipe the roller [3] using a soft cloth dampened with alcohol.



10. While turning processing knob FN6 [1], wipe the roller [2] using a soft cloth dampened with alcohol.

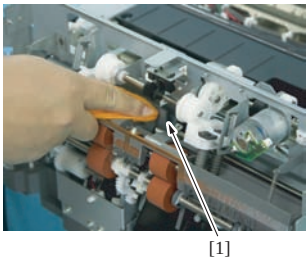
2.1.5 Cleaning of the paddles

A. Periodically cleaning parts/cycle

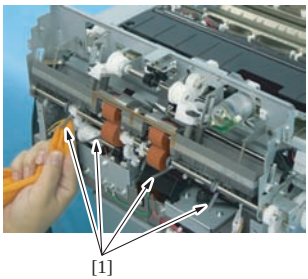
- Paddles: Every 300,000 prints

B. Procedure

1. Remove the finisher unit.
See P.28



2. Using a soft cloth dampened with alcohol, wipe the paddle 1 [1].



3. Using a soft cloth dampened with alcohol, wipe four paddles 2 [1].

3. Other

3.1 Disassembly/adjustment prohibited items

A. Paint-locked screws

NOTE

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

B. Red-painted screws

NOTE

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

C. Variable resistors on board

NOTE

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

D. Removal of PWBs

⚠ CAUTION

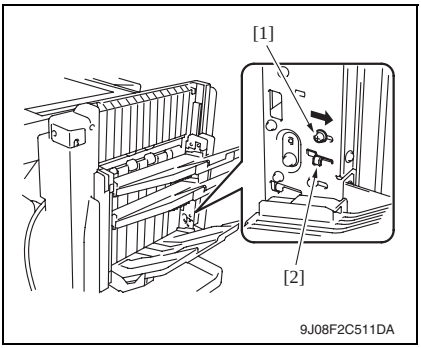
- **When removing a circuit board or other electrical component, refer to "Handling of PWBs" and follow the corresponding removal procedures.**
- **The removal procedures given in the following omit the removal of connectors and screws securing the circuit board support or circuit board.**
- **Where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

3.2 Precautions to be observed when option configuration is changed

- The output tray detection position must be changed depending on configuration of the options mounted on the printer.

3.2.1 Setting the exit tray detection position

A. When only OT-602, MT-502, or SD-505 is mounted

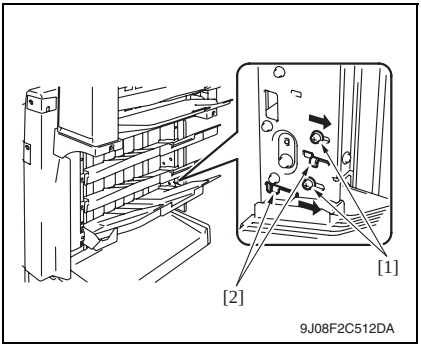


1. Loosen the screw [1] and move it in the direction of the arrow. Then, tighten it at the new position.

NOTE

- **This step should be done securely. If not, any trouble may happen.**
- **Be sure to move the screw itself.**
- **Do not move the screw by using the adjust plate [2].**

B. When OT-602 + MT-502 or OT-602 + SD-505 are mounted

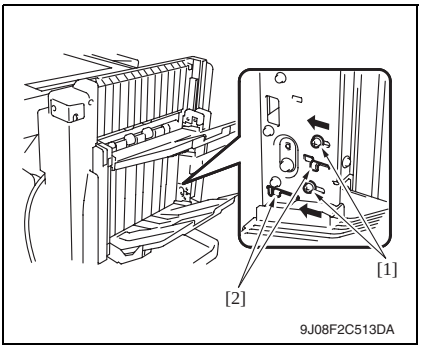


1. Loosen two screws [1] and move them in the direction of the arrow. Then, tighten them at the corresponding new positions.

NOTE

- **This step should be done securely. If not, any trouble may happen.**
- **Be sure to move the screw itself.**
- **Do not move the screw by using the adjust plate [2].**

C. When only FS-519 is mounted



1. Loosen two screws [1] and move them in the direction of the arrow. Then, tighten them at the corresponding new positions.

NOTE

- **This step should be done securely. If not, any trouble may happen.**
- **Be sure to move the screw itself.**
- **Do not move the screw by using the adjust plate [2].**

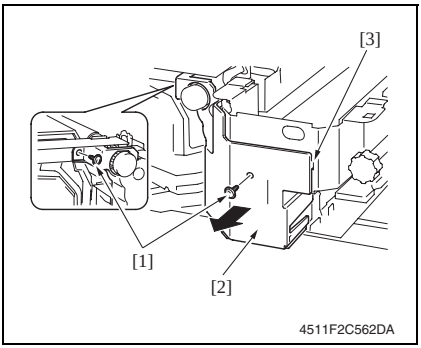
3.3 Disassembly/Assembly/Cleaning list (Other parts)

3.3.1 Disassembly/Assembly parts list

No.	Section	Part name	Ref. page
1	Exterior parts	Finisher unit right front cover	P.20
2		Finisher unit left front cover	P.20
3		Finisher unit rear cover	P.20
4		Finisher unit upper cover	P.21
5		Front door	P.21
6		Middle guide	P.22
7		Intake cover	P.23
8		Tray unit front cover	P.23
9		Tray unit rear cover	P.23
10		Connector cover	P.23
11		Tray 1	P.24
12		Tray 2	P.24
13		Output tray OT-602 (Option)	P.24
14	Unit	Tray unit	P.25
15		Finisher unit	P.28
16		Stapler unit	P.36
17		Punch kit PK-515 (Option)	P.37
18	Electric parts	Exit roller motor	P.38
19		Elevator motor	P.49
20		Duplex guide solenoid	P.56
21		FS control board	P.58
22	Others	Storage paddle drive clutch	P.38
23		Exit upper roller	P.38
24		Storage paddle	P.38
25		Exit paddle drive clutch	P.43
26		Exit lower roller	P.43
27		Aligning section	P.46
28		Timing belt	P.49
29		Shutter drive gear	P.55

3.4 Disassembly/Assembly procedure

3.4.1 Finisher unit right front cover



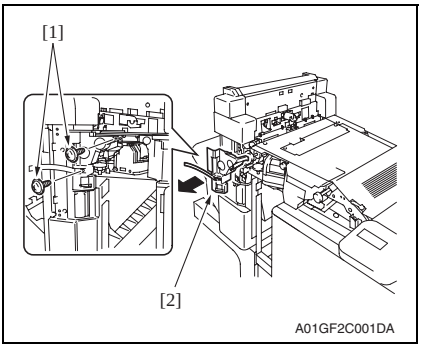
1. Open the front door.
2. Remove two screws [1] and remove the finisher unit right front cover [2].

NOTE

- **At reinstallation, first fit the tab [3] into position.**

3.4.2 Finisher unit left front cover

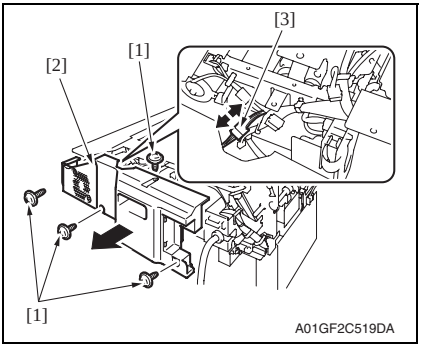
1. Remove the front door.
See P.21



2. Remove two screws [1] and remove the finisher unit left front cover [2].

3.4.3 Finisher unit rear cover

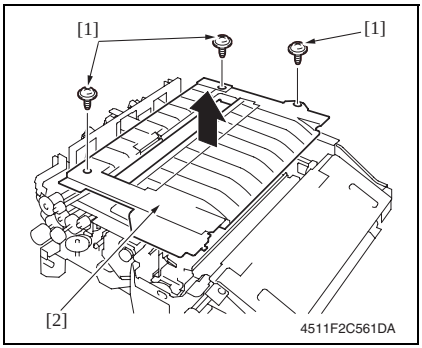
1. Remove the finisher unit.
See P.28



2. Remove four screws [1] and remove the finisher unit rear cover [2].
3. Disconnect the connector [3].

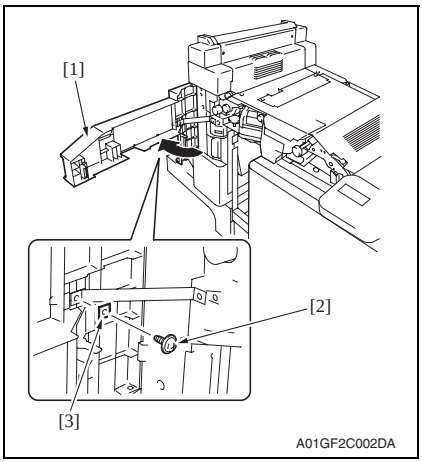
3.4.4 Finisher unit upper cover

1. Remove the finisher unit.
See P.28
2. Remove the finisher unit rear cover.
See P.20

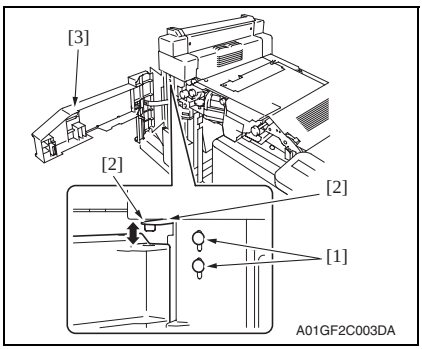


3. Remove three screws [1] and remove the finisher unit upper cover [2].

3.4.5 Front door



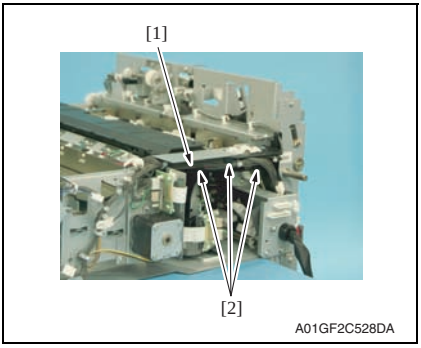
1. Open the front door [1].
2. Remove the screw [2] and the retaining plate [3].



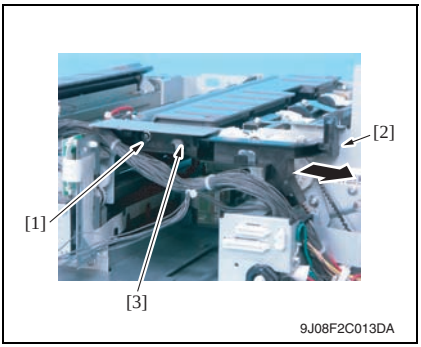
3. Loosen two screws [1] and move the hinge [2] up. Then remove the front door [3].

3.4.6 Middle guide

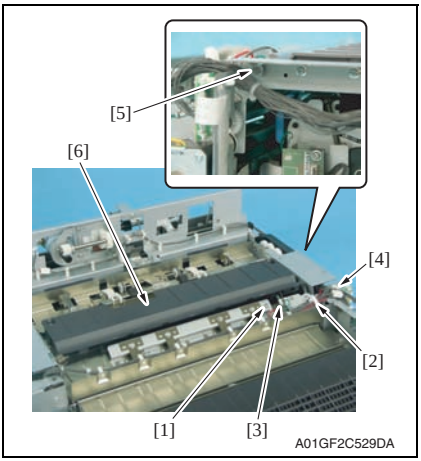
1. Remove the finisher unit.
See P.28
2. Remove the finisher unit rear cover.
See P.20
3. Remove the finisher unit upper cover.
See P.21



4. Remove the harness bundle [1] from three harness guides [2].



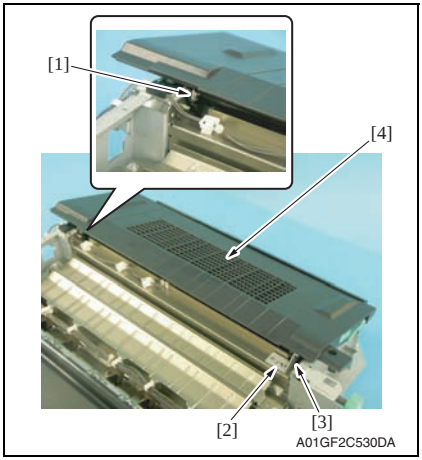
5. Remove the screw [1] and tab [2], and remove the harness guide [3].



6. Remove the screw [1] and the ground wire.
7. Remove the wire saddle [2] and edge cover [3], and disconnect the connector [4].
8. Remove the shoulder screw [5] and remove the middle guide [6].

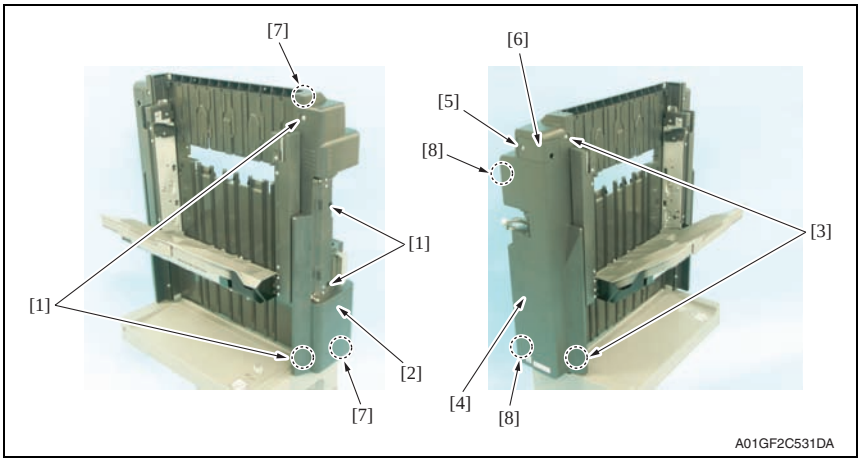
3.4.7 Intake cover

1. Remove the finisher unit.
See P.28
2. Remove the finisher unit rear cover.
See P.20
3. Remove the finisher unit upper cover.
See P.21



4. Remove the C-ring [1].
5. Remove the screw [2] and the metal bracket [3], and the intake cover [4].

3.4.8 Tray unit front cover/Tray unit rear cover/Connector cover

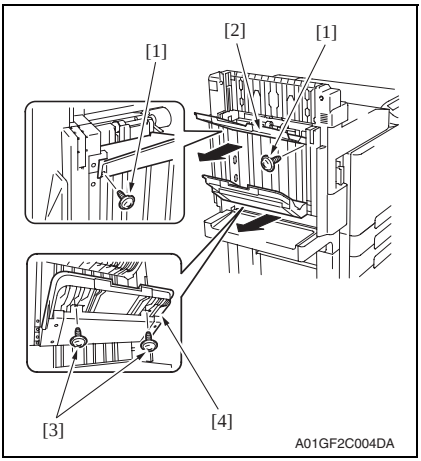


1. Remove four screws [1] and remove the tray unit front cover [2].
2. Remove two screws [3] and remove the tray unit rear cover [4].
3. Remove the screw [5] and remove the connector cover [6].

NOTE

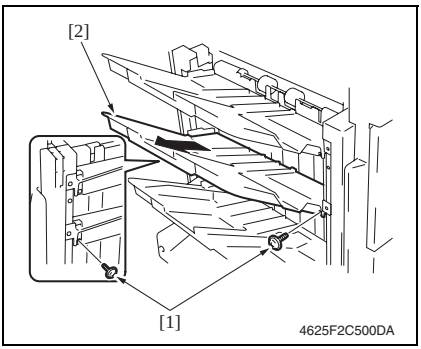
- **When installing the tray unit front cover, snap the tab [7] first.**
- **When installing the tray unit back cover, snap the tab [8] first.**

3.4.9 Tray 1/Tray 2



1. Remove two screws [1], and remove the tray 1 [2].
2. Remove two screws [3], and remove the tray 2 [4].

3.4.10 Output tray (OT-602): Option



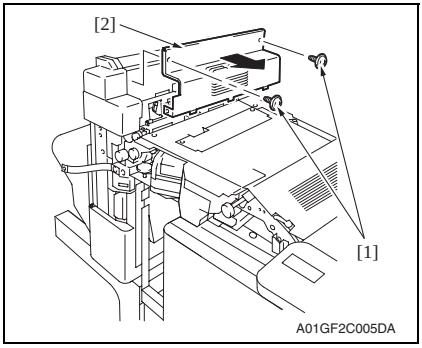
1. Remove two screws [1], and remove the output tray [2].

3.4.11 Tray unit

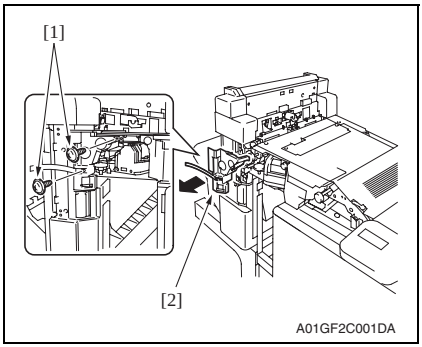
NOTE

- **When removing the tray unit, set the tray unit to its home position.**
- **If the exit tray (OT-602) is installed, remove it in advance.**
  See P.24

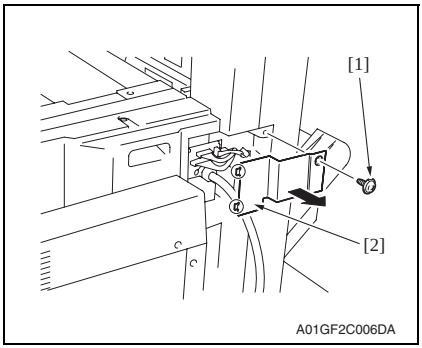
1. Remove the front door.
See P.21



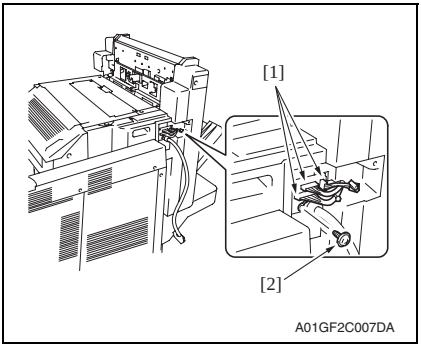
2. Remove two screws [1] and remove the tray unit upper cover [2].



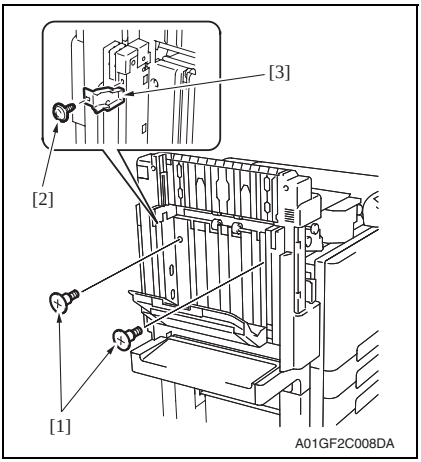
3. Remove two screws [1] and remove the finisher unit left front cover [2].



4. Remove the screw [1] and remove the connector cover [2].



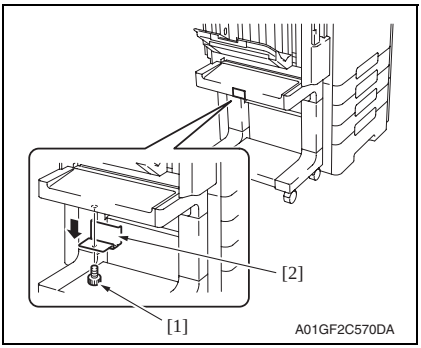
5. Disconnect three connectors [1] and remove the screw [2], and the ground wire.



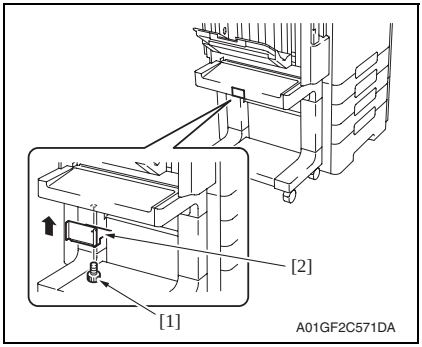
6. Remove two shoulder screws [1].

NOTE

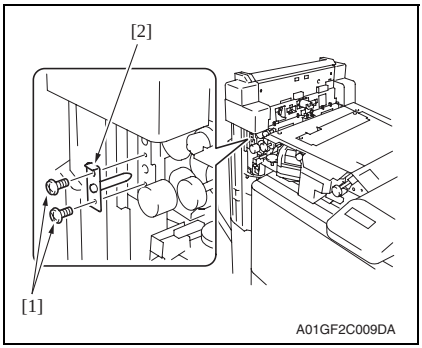
- **When the output tray (OT-602) is mounted, remove the screw [2] and remove the mounting holder [3].**



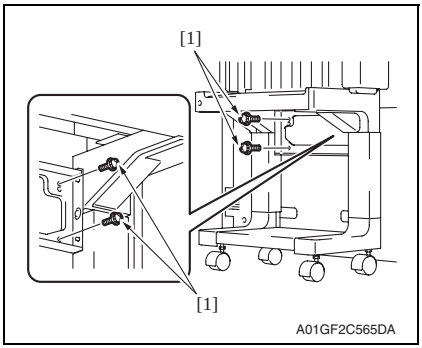
7. Remove the screw [1] and the stopper [2] shown in the illustration.



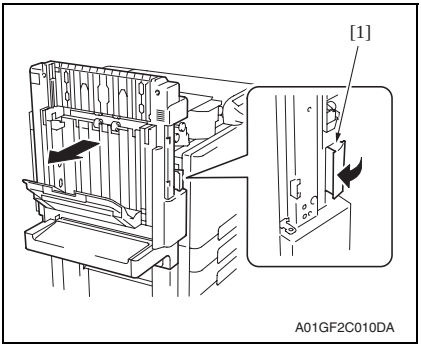
8. Position the stopper [2] as shown and secure it with the screw [1].



9. Remove two screws [1] and remove the mounting bracket [2].



10. Remove four screws [1].



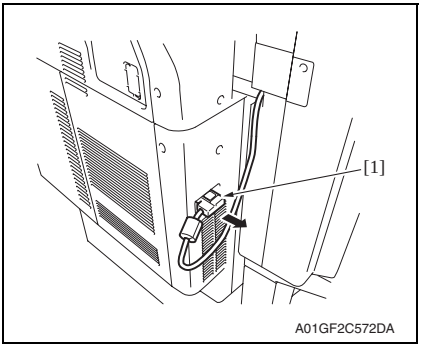
11. Pull the lock release lever [1] and remove the tray unit.

NOTE

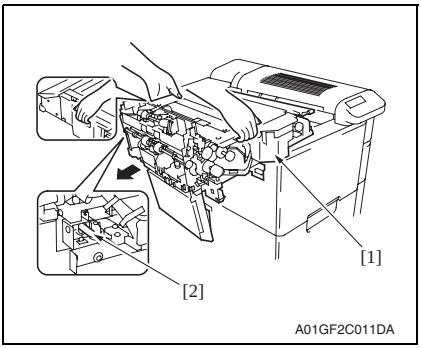
- **Make sure the height and angle adjustment of stand table when installing the finisher.**
  See P.34

3.4.12 Finisher unit

1. Remove the tray unit.
See P.25



2. Disconnect the hookup cord [1].

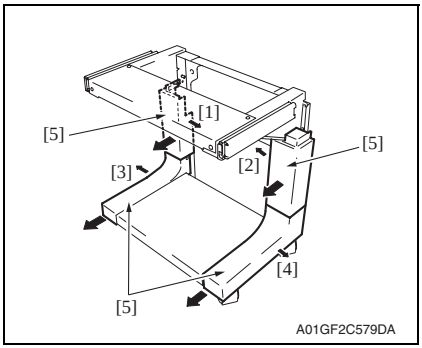


3. Hold the positions as shown in the illustration to remove the finisher unit [1].

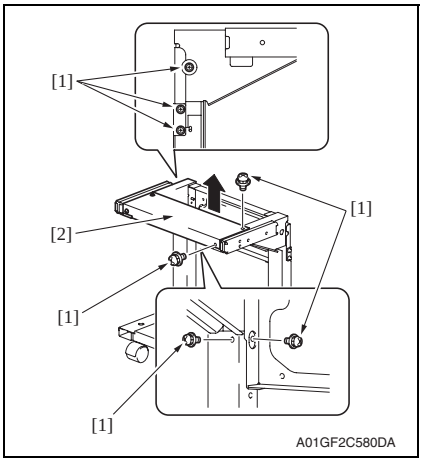
NOTE

- **When setting the finisher unit, make sure to fit the finisher unit hole with stabilizing pin [2] and set it to the end.**
- **Make sure the height and angle adjustment of stand table when installing the finisher.**
  See P.34

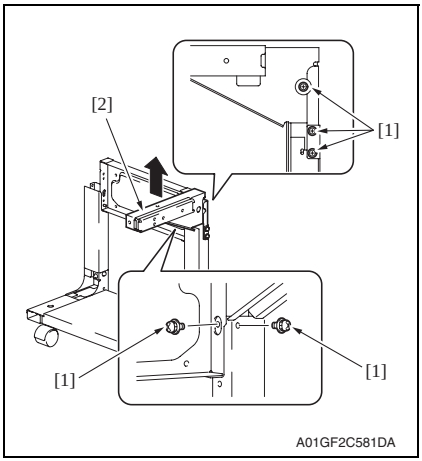
3.4.13 Changing the height of the stand table



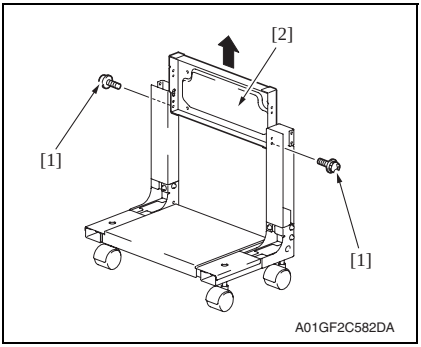
1. Remove four covers [5] while removing four latches [1], [2], [3], and [4].



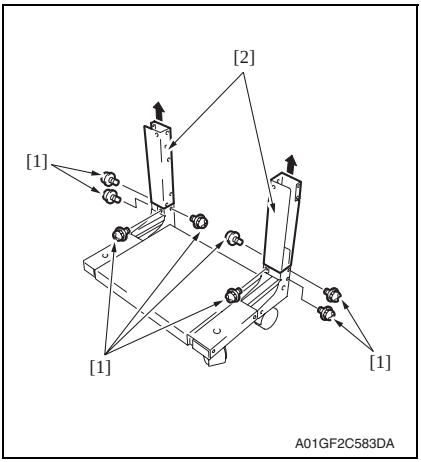
2. Remove seven screws [1] to remove the upper unit (rear) for the stand table [2].



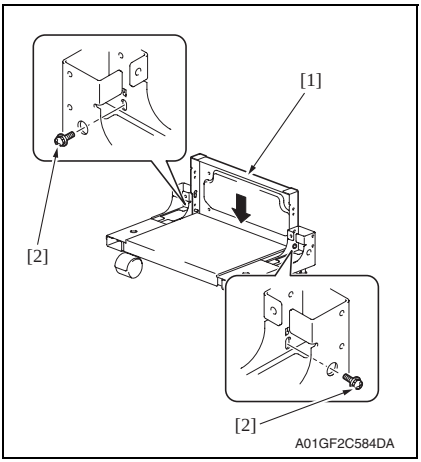
3. Remove five screws [1] to remove the upper unit (front) for the stand table [2].



4. Remove two screws [1] to remove the mounting plate [2].



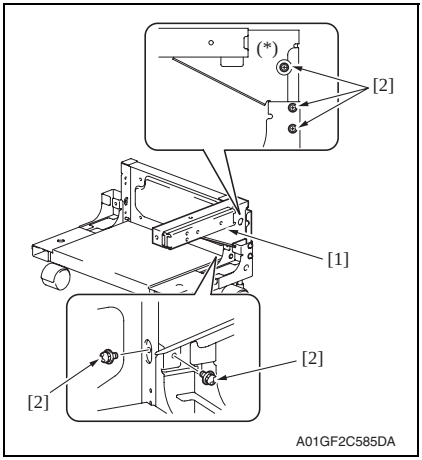
5. Remove eight screws [1] to remove two supports [2].



6. Set the mounting plate [1] which was removed in step 4, and tighten two screws [2].

NOTE

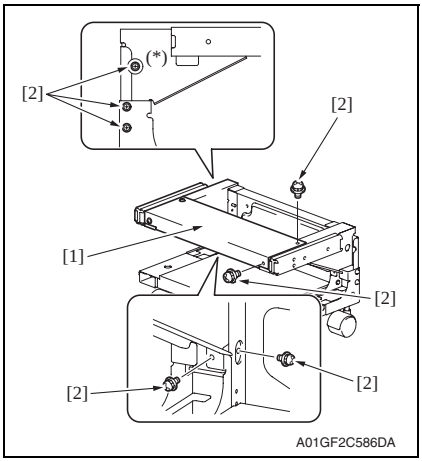
- **Use cares since the length of these screws are different from other screws.**



7. Mount the stand table upper unit (front) [1] which was removed in step 3, and tighten five screws [2].

NOTE

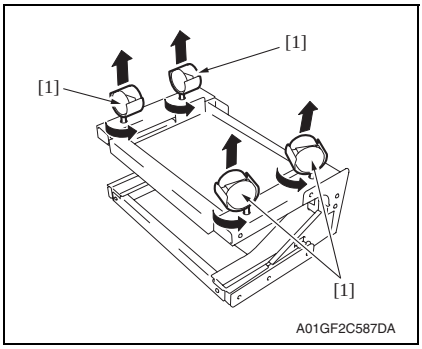
- **Use care since the lengths of the screws (*) shown on the illustration are different from other screws.**



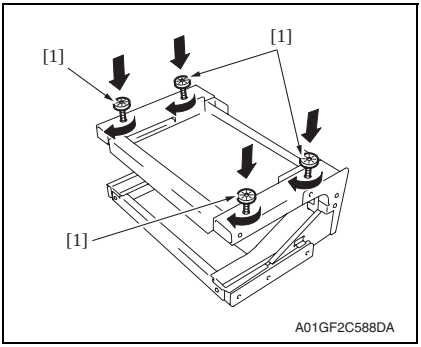
8. Mount the stand table upper unit (rear) [1] which was removed in step 2, and tighten seven screws [2].

NOTE

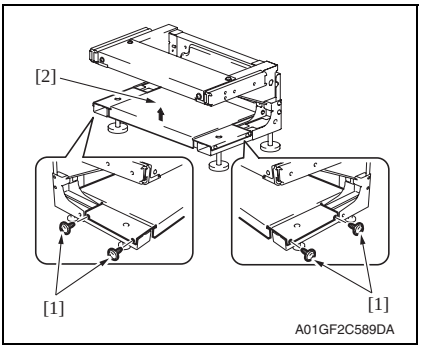
- **Use care since the lengths of the screws (*) shown on the illustration are different from other screws.**



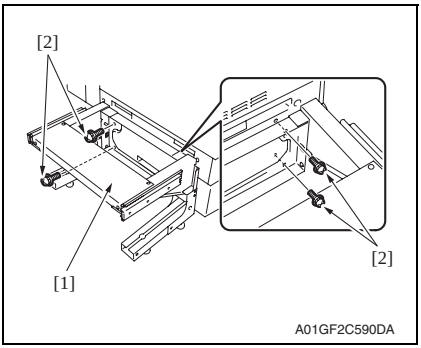
9. Place the stand table upside-down, and remove four casters [1].



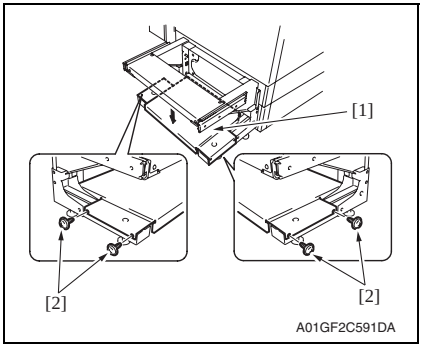
10. Mount four adjusting plates [1] furnished with the main body.



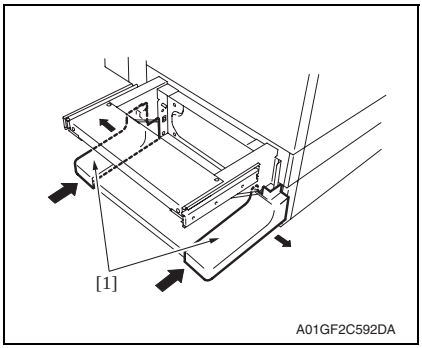
11. Remove four screws [1] and remove the lower unit for the stand table [2].



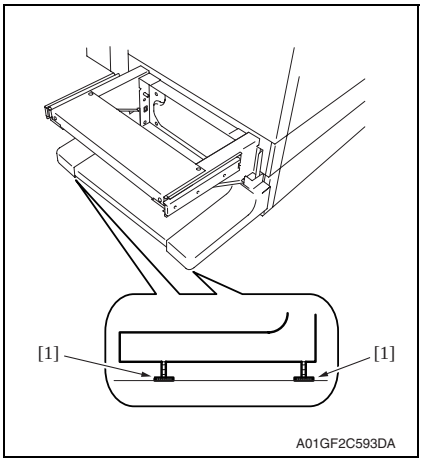
12. Mount the stand table [1] to the main body, and tighten it with four screws [2].



13. Mount the lower unit for the stand table [1] which was removed in step 11, and tighten four screws [2].



14. Mount two covers [1] which were removed in step 1.

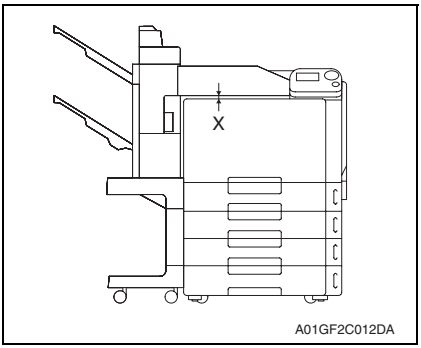


15. Adjust the adjusting plate [1] to touches the floor.

NOTE

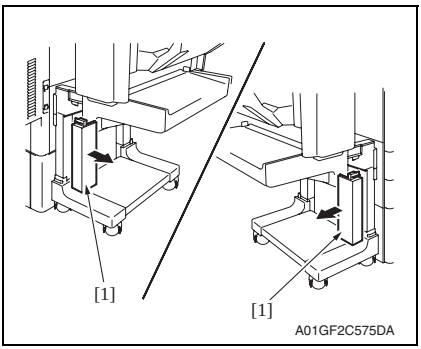
- **When the height of the setting table is changed, check for the tilt of the setting table.**
See P.34

3.4.14 Height and angle adjustment of stand table

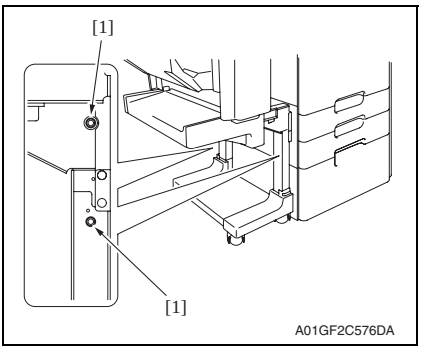


1. Measure the width of X on front and back side.
   Specifications: 5 ± 2 mm
2. Following adjustment is necessary when the width does not fall within the specifications.

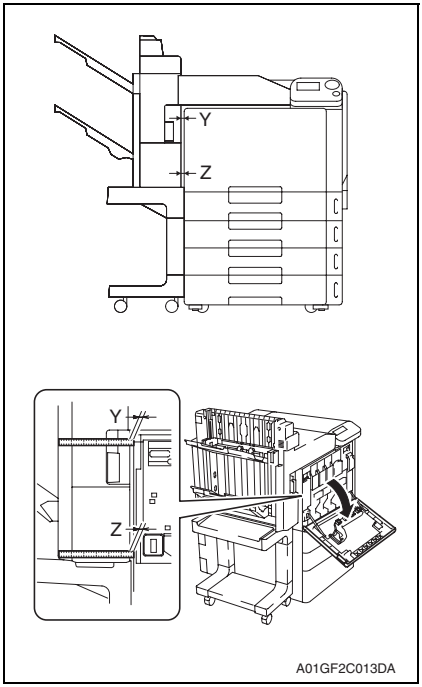
3. Pull the lever to unlock it, and remove the tray unit from the main body.



4. Remove two covers [1] from the legs of the stand table.



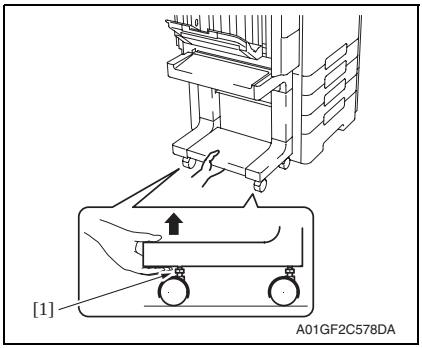
5. Loosen four screws [1] (two screws each for the left and right) and adjust the height of the stand. Tighten the screws again.



6. Measure the width of Y and Z (clearance of the exterior parts) on front and back side.
Specifications:
Y = Z - 1 mm
(Y must be smaller than Z)
Z = 7 ± 2 mm (front side)
Z = 9 ± 2 mm (back side)

NOTE

- **To measure the front side, open the front door and measure it using finisher side as supporting point referring showed on the illustration left.**

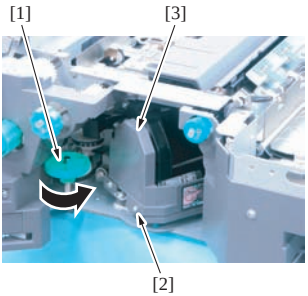


7. When the value does not fall within the specified range, remove the tray unit and pull up the casters to adjust them.

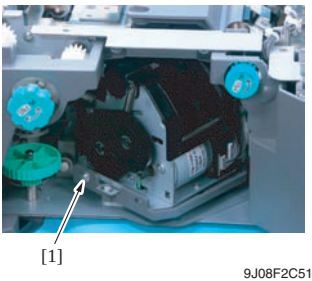
NOTE

- **For adjusting the casters, hold the bottom part of the stand table and turn the adjusting bolt [1].**

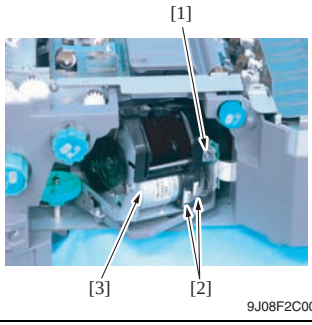
3.4.15 Stapler unit



1. Open the front door.
2. Turn the dial [1], and move the stapler forward.
3. Remove the staple cartridge.
4. Remove the screw [2], and remove the cover [3].



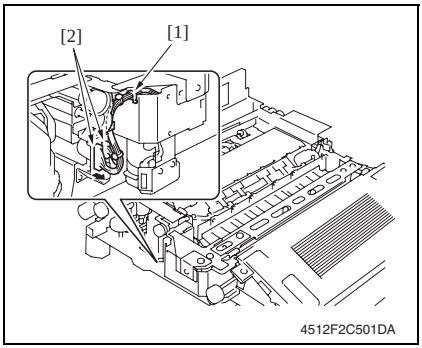
5. Remove the screw [1].



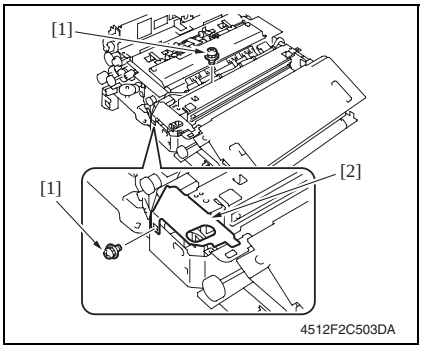
6. Remove the screw [1] and remove the ground wire.
7. Disconnect two connectors [2] and remove the stapler unit [3].

3.4.16 Punch kit (PK-515): Option

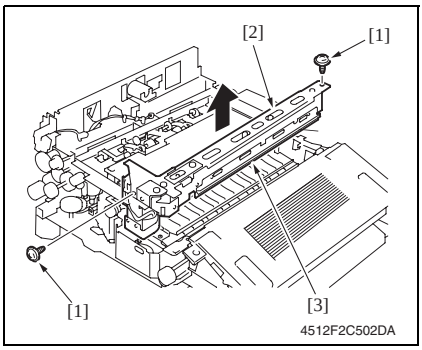
1. Remove the finisher unit.
See P.28
2. Remove the finisher unit rear cover.
See P.20
3. Remove the finisher unit upper cover.
See P.21
4. Remove the finisher unit right front cover.
See P.20



5. Remove the edge cover [1] and disconnect two connectors [2].

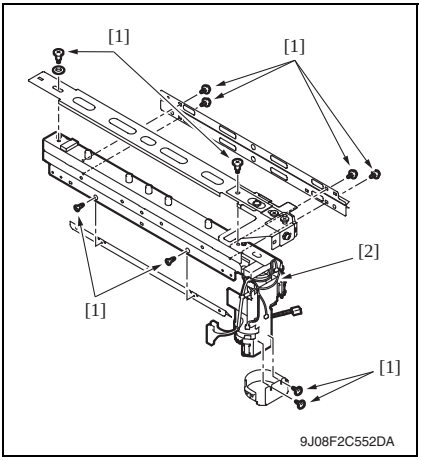


NOTE
- **When the creasing unit is mounted, remove two screws [1], and remove the metal bracket [2].**



6. Remove two screws [1] and remove the punch kit [2].

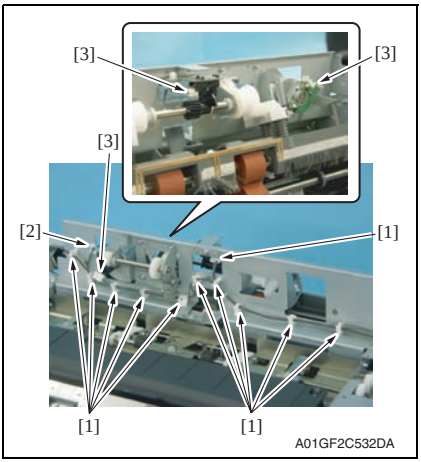
NOTE
- **Take care so that the mylar [3] will not be bent.**



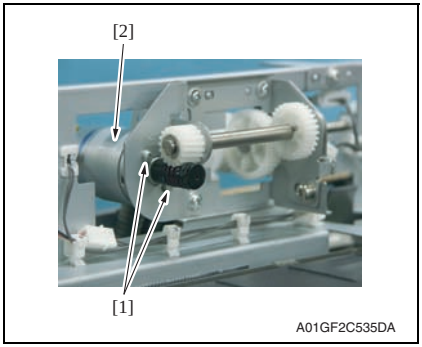
7. Remove ten screws [1] and remove the punch kit [2].

3.4.17 Exit roller motor/Storage paddle drive clutch/Exit upper roller/Storage paddle

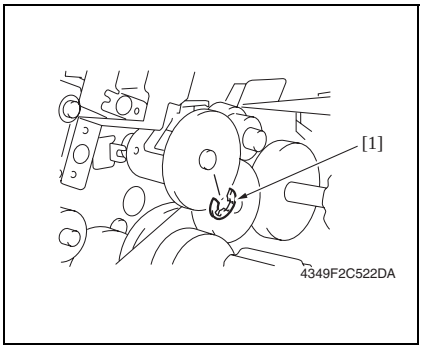
1. Remove the finisher unit.
See P.28
2. Remove the finisher unit left front cover.
See P.20



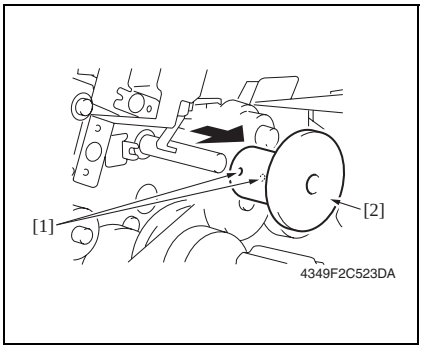
3. Remove eleven wire saddles [1] and remove the edge cover [2].
4. Disconnect three connectors [3].



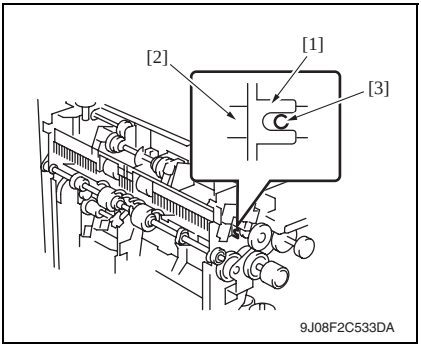
5. Remove two screws [1] and remove the exit roller motor [2].



6. Remove the E-ring [1].

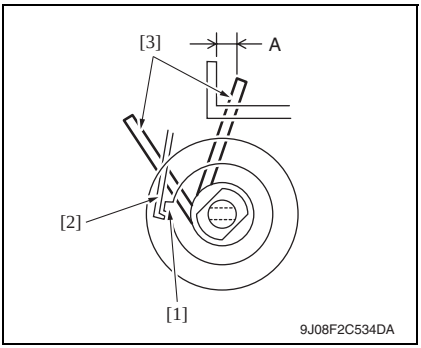


7. Loosen two hexagonal socket head screws [1], and remove the storage paddle drive clutch assy [2].



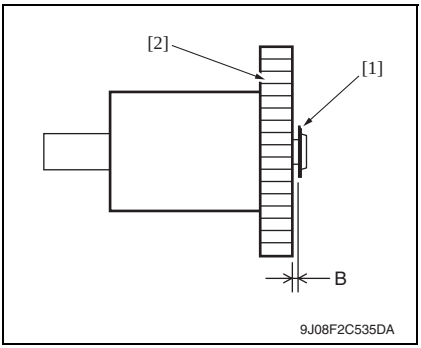
NOTE

- **When installing the storage paddle drive clutch, insert the hexagonal wrench into the flame notch [1], and confirm that the storage paddle drive axis [2] fits to the 2 mm-hole [3].**



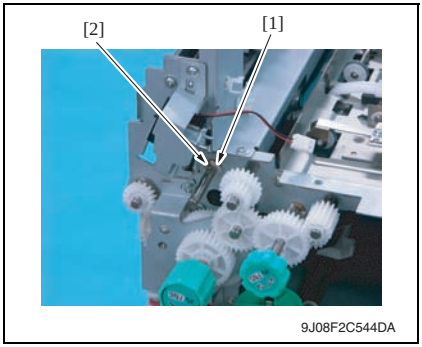
NOTE

- **When installing the storage paddle drive clutch, hook the solenoid flapper [2] on the tab [1] and confirm the storage paddle [3] locates the position as shown in the illustration.**
  Specifications A: 3.3 ± 3 mm

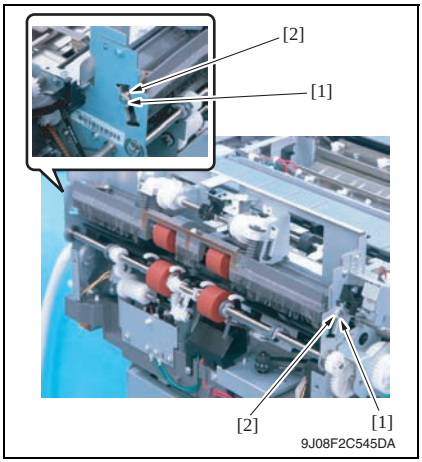


NOTE

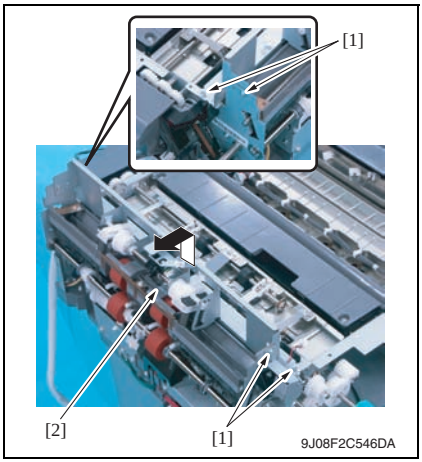
- **When installing the storage paddle drive clutch, adjust the distance between the E-ring [1] and the storage paddle drive clutch gear [2].**
  Specifications B: 0.2 ± 0.1 mm



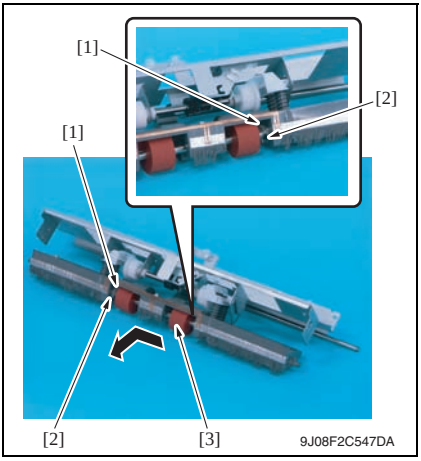
8. Remove the C-ring [1] and the bushing [2].



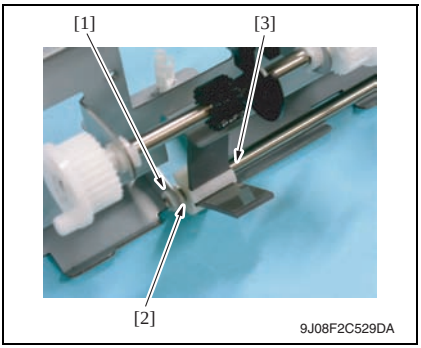
9. Remove two C-rings [1] and two bushings [2].



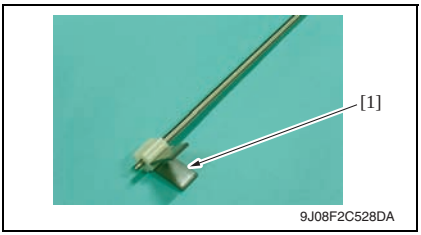
10. Remove four screws [1] and remove the exit transportation section (upper) assy [2].



11. Remove two C-rings [1] and two bearings [2], and remove the exit upper roller assy [3].

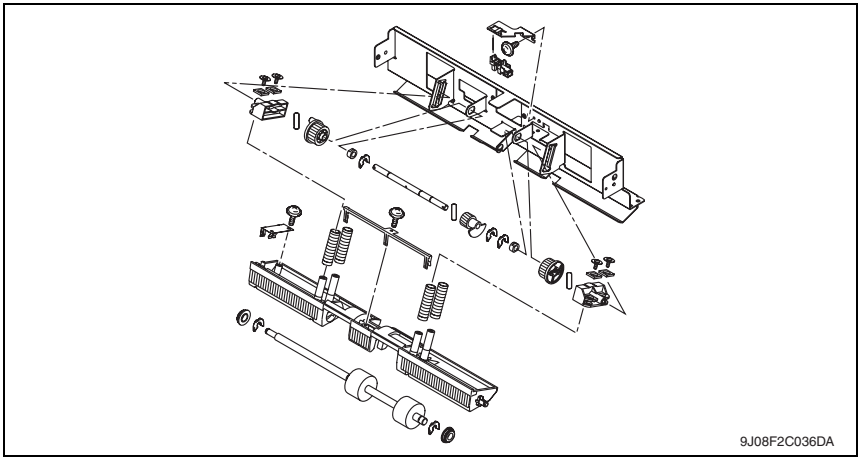


12. Remove the C-ring [1] and the bushing [2], and remove the storage paddle assy [3].



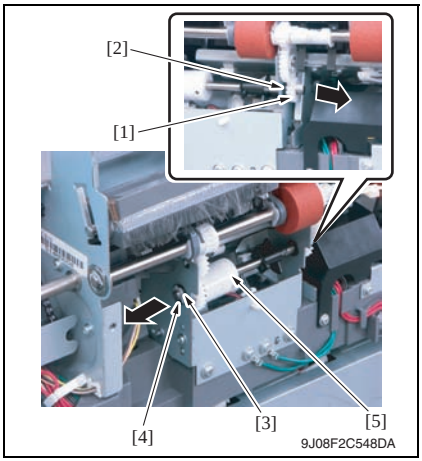
13. Remove the storage paddle [1].

14. Disassemble the pressure/retraction system units

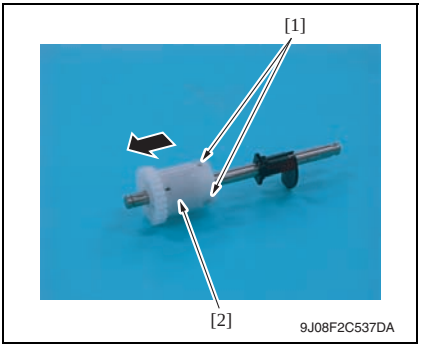


3.4.18 Exit paddle drive clutch/Exit lower roller

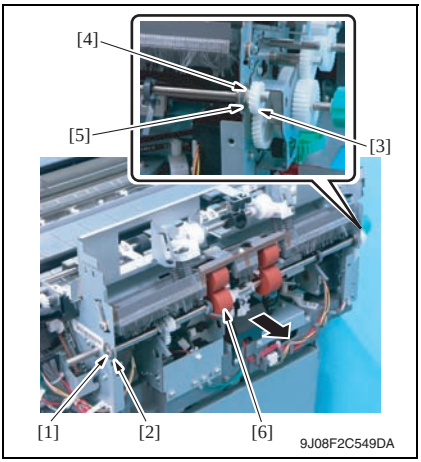
1. Remove the finisher unit.
See P.28
2. Remove the finisher unit left front cover.
See P.20



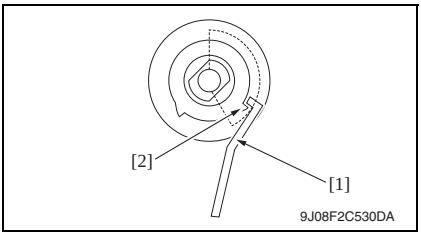
3. Remove the gear [1] and the bushing [2].
4. Remove the C-ring [3] and the bushing [4].
5. Remove the exit paddle drive clutch assy [5].



6. Loosen two hexagonal socket head screws [1], and remove the exit paddle drive clutch assy [2].

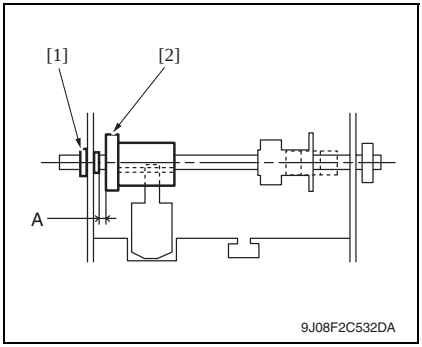


7. Remove the C-ring [1] and the bearing [2].
8. Remove the gear [3], C-ring [4] and bearing [5].
9. Remove the exit lower roller assy [6].



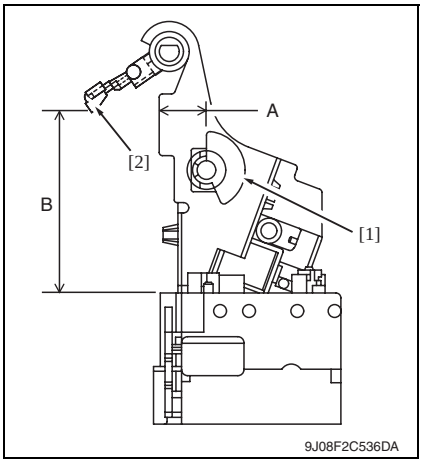
NOTE

- **When installing the exit paddle drive clutch, turn up the side that the distance between tabs is wider and hook the solenoid flapper [1] on the tab [2].**



NOTE

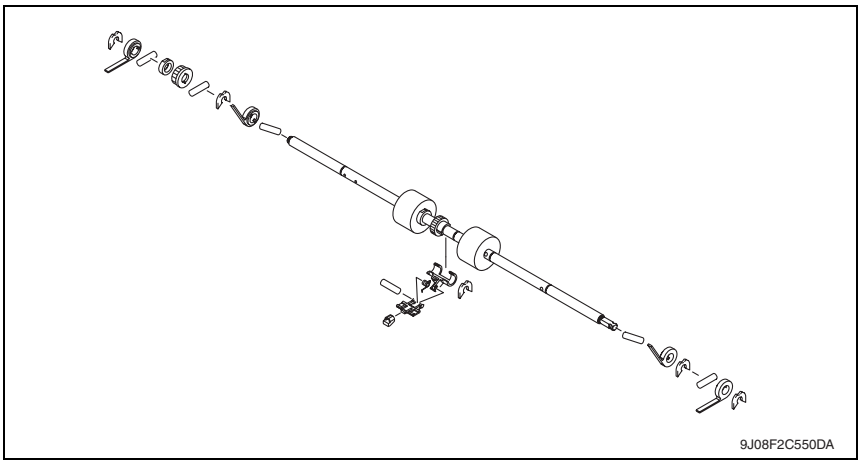
- **When installing the exit paddle drive clutch assy, adjust the distance between the bushing [1] and the exit paddle drive clutch [2] to 0.2 mm and tighten two hexagonal socket head screws.**



NOTE

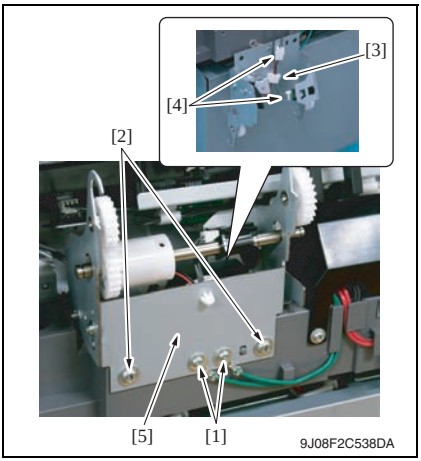
- **When installing the exit paddle drive clutch assy, adjust the position of blocked panel [1].**
  Specifications A: 14.6 ± 1 mm
- **When installing the exit lower roller assy, adjust the position of the arm holder [2].**
  Specifications B: 56.4 ± 3 mm

10. Disassemble the exit lower roller assy

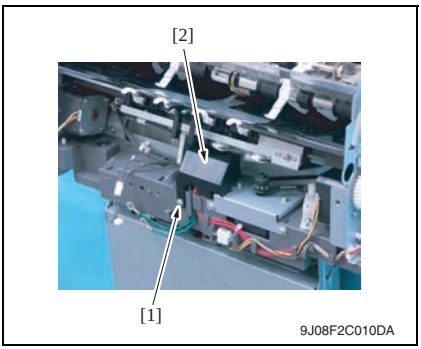


3.4.19 Aligning section

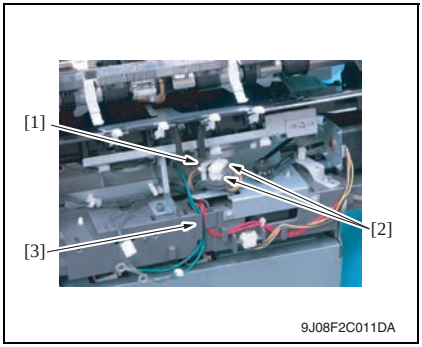
1. Remove the finisher unit left front cover.
See P.20
2. Remove the finisher unit rear cover.
See P.20
3. Remove the finisher unit upper cover.
See P.21
4. Remove the exit transportation section (upper) assy.
See P.38
5. Remove the exit lower roller assy.
See P.43



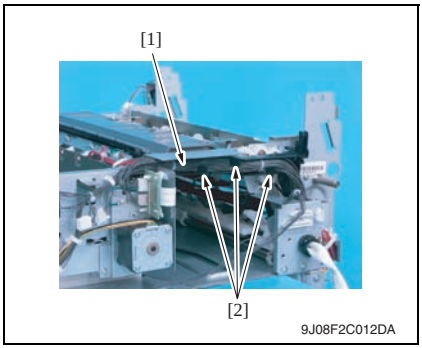
6. Remove two screws [1] and remove the ground wire.
7. Remove two screws [2].
8. Remove the wire saddle [3] and disconnect two connectors [4], and remove the exit paddle drive clutch mounting plate assy [5].



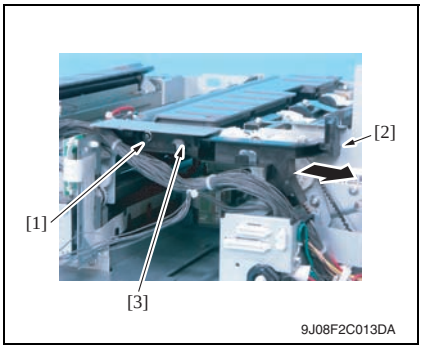
9. Remove the screw [1] and remove the connector cover [2].



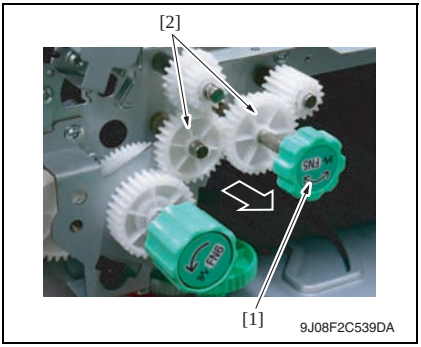
10. Remove the wire saddle [1] and disconnect two connectors [2].
11. Remove the ground wire from the harness guide [3].



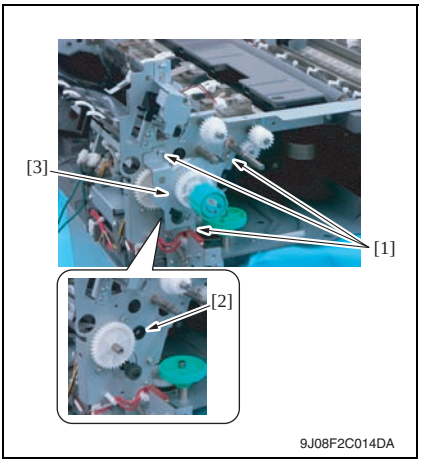
12. Remove the harness bundle [1] from the harness guide [2].



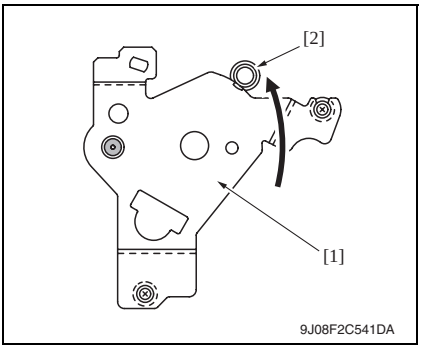
13. Remove the screw [1] and tab [2], and remove the harness guide [3].



14. Remove the knob [1] of FN5 and remove two gears [2].

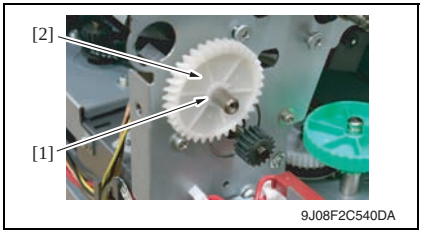


15. Remove three screws [1] and bushing [2], and remove the gear assy [3].

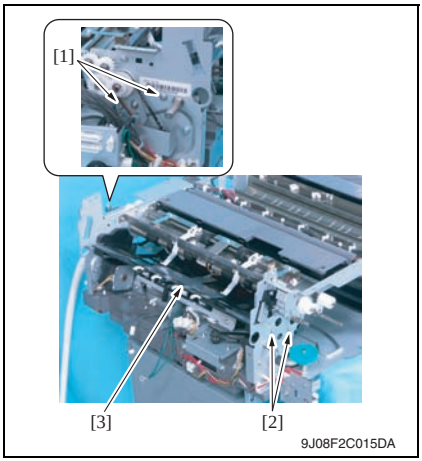


NOTE

- **When installing the gear assy, fit the mounting plate [1] to the caulking axis [2], and tightening with screw.**
- **Make sure that the gear rotates smoothly.**



16. Remove the C-ring [1] and remove the gear [2].



17. Remove two screws [1] and two shoulder screws [2], and remove the aligning plate assy [3].

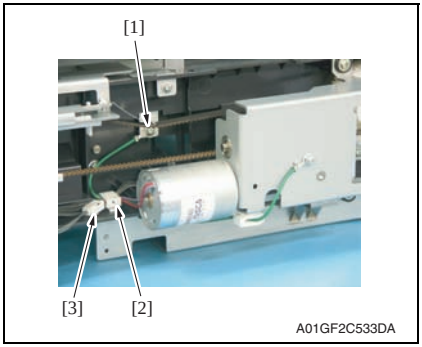
3.4.20 Elevator motor/Timing belt

A. Removal procedure

1. Remove the tray unit.
See P.25

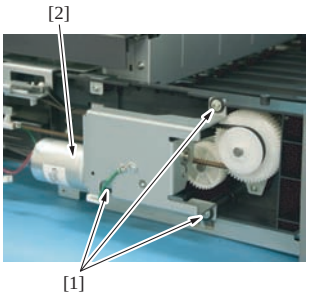
2. Remove the tray unit front cover.
See P.23

3. Remove the tray unit rear cover.
See P.23

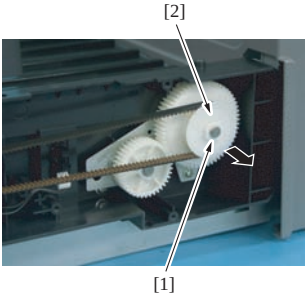


4. Remove the screw [1] and remove the ground wire.

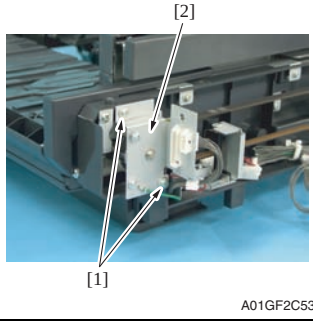
5. Remove the wire saddle [2] and disconnect the connector [3].



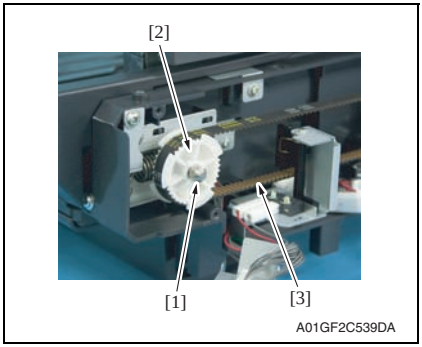
6. Remove three screws [1] and remove the elevator motor assy [2].



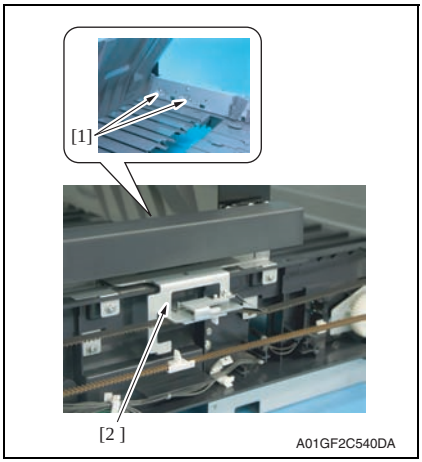
7. Remove the C-ring [1] and remove the gear cover [2].



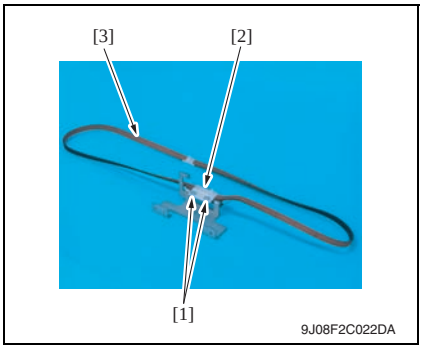
8. Remove two screws [1] and remove the metal bracket [2].



9. Remove the C-ring [1] and remove the gear (upper rear) [2] and belt [3].



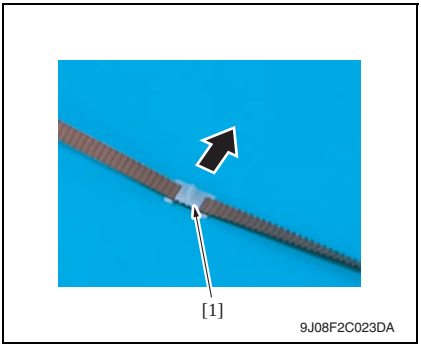
10. Remove two screws [1] and remove elevator mounting plate (rear) [2].



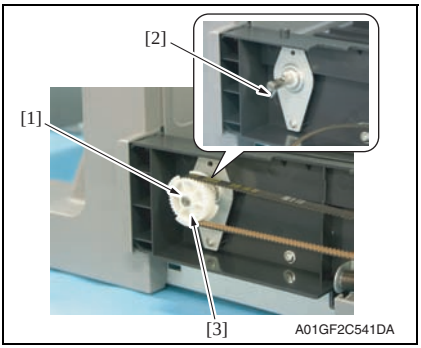
11. Remove two screws [1] and remove the belt holder [2].
12. Remove the timing belt (rear) [3].

NOTE

- **When installing the timing belt, make sure there is no looseness.**



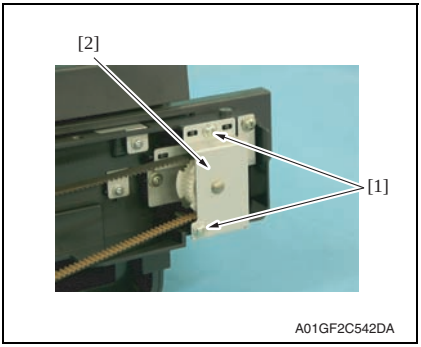
13. Remove the lever [1].



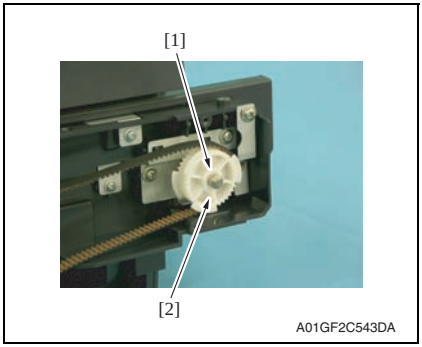
14. Remove the C-ring [1] and pin [2], and remove the gear (lower front) [3].

NOTE

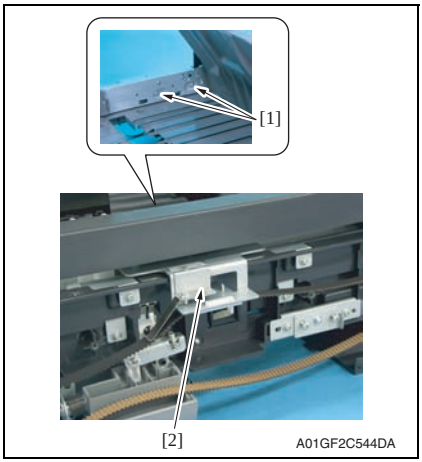
- **Use care not to lose the pin.**



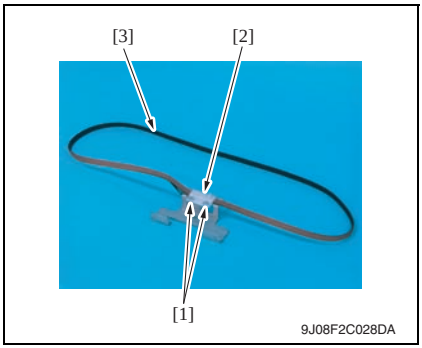
15. Remove two screws [1] and remove the metal bracket [2].



16. Remove the C-ring [1] and remove the gear (upper front) [2].

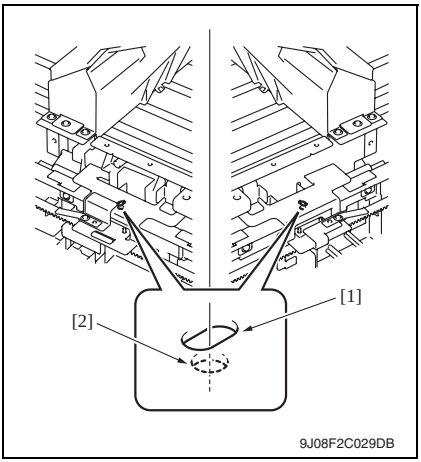


17. Remove two screws [1] and remove elevator mounting plate (front) [2].



18. Remove two screws [1] and remove the belt holder [2].
19. Remove the timing belt (front) [3].

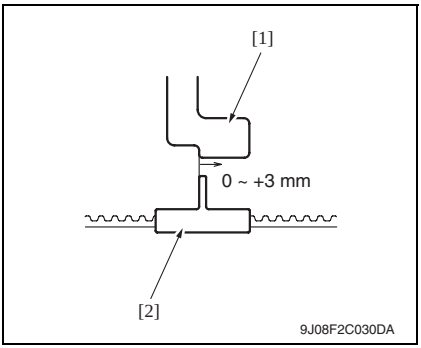
B. Adjustment of lever installation position



1. Install all components excepting for elevator motor assy.

NOTE

- **Fit the hole of the elevator mounting plate (front/back) [1] and the hole of the elevator tray [2], and install them by fixing the front and back along.**

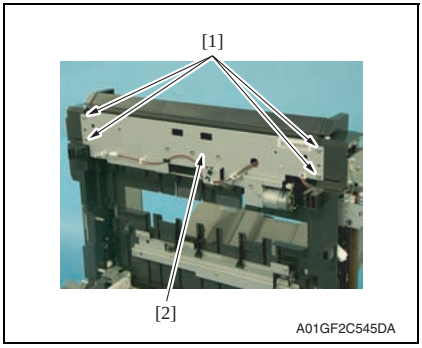


2. Fit the blocked plate [1] as shown in the illustration, and install the lever [2].
Specifications: 0 to +3 mm

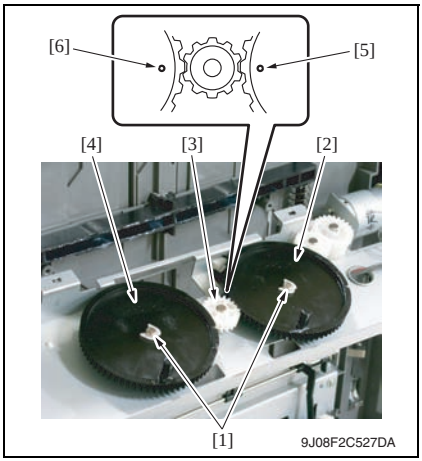
3. Install the elevator motor assy.

3.4.21 Shutter drive gear

1. Remove the tray unit.
See P.25
2. Remove the tray unit front cover.
See P.23
3. Remove the tray unit rear cover.
See P.23



4. Remove four screws [1] and remove the shutter drive gear assy [2].



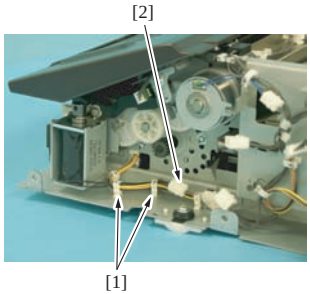
5. Remove two C-rings [1] and remove the gear 1 [2], gear 2 [3] and gear 3 [4].

NOTE

- **When installing the shutter drive gear, fit the match marks [5] of gear 1 and [6] of gear 3 as shown in the left illustration.**

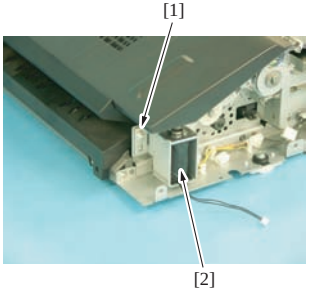
3.4.22 Duplex guide solenoid

1. Remove the finisher unit.
See P.28
2. Remove the finisher unit rear cover.
See P.20
3. Remove the finisher unit upper cover.
See P.21



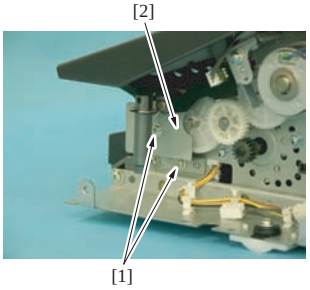
A01GF2C546DA

4. Remove two saddles [1] and disconnect the connector [2].



A01GF2C547DA

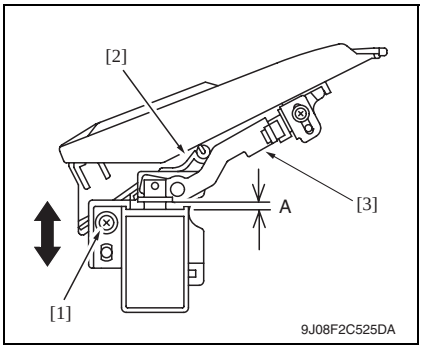
5. Remove the screw [1] and remove the duplex guide solenoid [2].



A01GF2C548DA

6. Remove two screws [1] and remove the duplex guide solenoid lever assy [2].

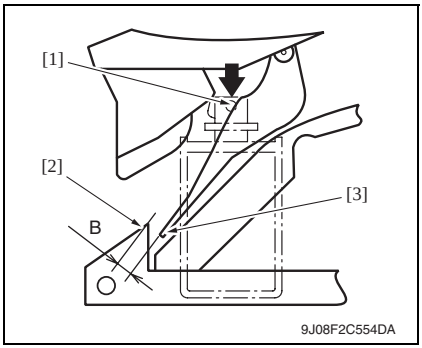
A. Adjustment



1. Loosen the screw [1].
2. Move the mounting plate up and down until the space A reaches specification, and tighten the screw [1].
Specification: 3.5 mm (Tolerance: + 0.5 mm)

NOTE

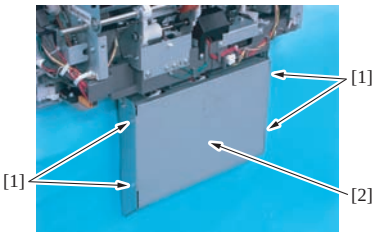
- **The switch tab [2] shall face down and touch to the lever [3].**



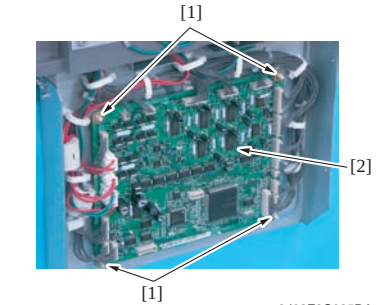
3. Lift down the plunger [1], and make sure that the gap B between switch tab end [2] and the guide [3] is over 5 mm.

3.4.23 FS control board

1. Remove the tray unit.
See P.25



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



3. Disconnect all the connectors on the FS control board.
4. Remove the board supports [1], and remove the FS control board [2].

Adjustment/Setting

4. How to use the adjustment section

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

Advance checks

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

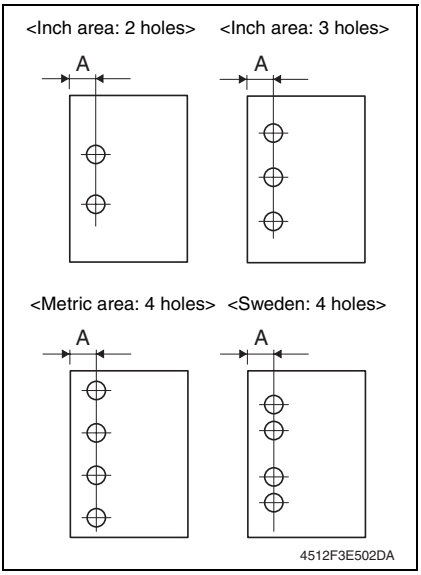
- The power supply voltage meets the specifications.
- The power supply is properly grounded.
- The machine shares the power supply with any other machine that draws large current intermittently (e.g., elevator and air conditioner that generate electric noise).
- The installation site is environmentally appropriate: high temperature, high humidity, direct sunlight, ventilation, etc.; levelness of the installation site.
- The defective image attributes to the data itself which is sent from the PC to the printer.
- The density is properly selected.
- 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

- **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.**

5. Finisher operations

5.1 Punch Stop Position (PK-515)



1. Set the printer into the hole punch mode and make a 1-sided print.
2. Measure width A on the print and check to see if the measured dimension falls within the specified range.
   <Inch area: 2 holes, 3 holes>
   Specifications: 9.5 ± 1.0 mm
   <Metric area: 4 holes>
   Specifications: 11 ± 1.0 mm
   <Sweden: 4 holes>
   Specifications: 11.5 ± 1.0 mm
3. If the measured width A outside the specified range, perform the following procedure to punch hole position adjustment.

4. Call the Service Mode to the screen.
5. Select [Finisher Adjust] → [CB-FN Adjust] → [PunchStopPosition].
6. Press the Menu/Select key.
7. Select the paper type and press the Menu/Select key.
8. Set the correction value using the ▲ or ▼ keys.

- To make width A wider, enter a positive value.
- To make width A narrower, enter a negative value.
- Adjustment range: +10 max. and -10 min. (1 increment: 0.5 mm)

9. Press the Menu/Select key.
10. Turn OFF the power switch, wait for 10 sec., then turn the switch ON.
11. Make a print and check the punch hole positions again.

5.2 Punch Reg. Loop (PK-515)

NOTE
This adjustment must be made in any of the following cases:
- **When a slant occurs in the punch hole position.**
- **When misfeed frequently occurs in punch hole mode.**

1. Call the Service Mode to the screen.
   See P.202 of the main body service manual.
2. Select [Finisher Adjust] → [CB-FN Adjust] → [Punch Reg. Loop].
3. Press the Menu/Select key.
4. Set the correction value using the ▲ or ▼ keys.

- Adjustment range: +4 max. and -4 min. (1 increment: 1 mm)
- To make loop length larger, enter a positive value.
- To make loop length smaller, enter a positive value.

5. Press the Menu/Select key.
6. Turn OFF the power switch, wait for 10 sec., then turn the switch ON.
7. Make a print again and check the deviance of punch hole position.

5.3 Punch Option

5.3.1 Punch Kit type

Functions	• To set installation and model of the punch kit.
Use	• Use when the punch kit is installed.
Setting/ Procedure	• The default setting is Not Installed. "Not Installed" PK-501 PK-515 • Select the model of the punch kit currently installed.

5.3.2 # of Punch-Holes

Functions	• To set the number of holes to be made by the punch kit installed.
Use	• Use when the punch kit is installed.
Setting/ Procedure	• The default setting is 2-Hole. "2-Hole" SWE 4-Hole EU 4-Hole 2-Hole/3-Hole **NOTE** **• Select only the number of holes supported by the punch kit installed.**

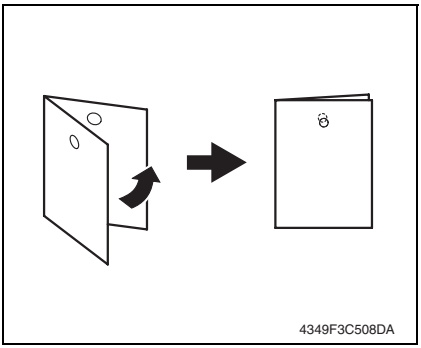
6. Mechanical adjustment

6.1 Punch hole deviance adjustment (PK-515)

NOTE

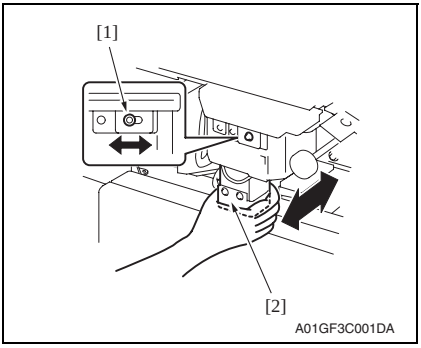
Make this adjustment after any of the following procedures has been performed.

- **When the punch kit has been replaced.**
- **When the punch kit has been removed.**



1. Set the printer into the hole punch mode and make a 1-sided print.
2. Fold the output paper in half and check whether the punch hole positions are aligned.
   Specification: 0 ± 2 mm
3. If the punch hole position is misaligned, adjust with the following procedure.

4. Remove the finisher unit right front cover.
See P.20



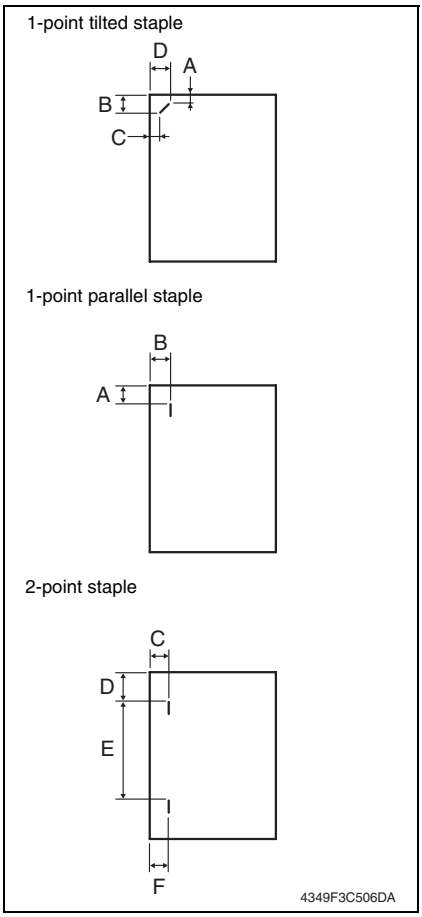
5. Loosen the adjustment screw [1], and move the punch unit [2] forward or backward to make the adjustment.
6. After the adjustment has been completed, tighten the adjusting screw.
7. Make a print and check the punch hole positions again.

6.2 Staple position adjustment

NOTE

Make this adjustment after any of the following procedures has been performed.

- **When the stapler has been replaced.**
- **When staple position is misaligned.**



1. Set the staple mode and make a print.

2. Check the staple position of the paper.

- 1-point tilted staple
  (Paper width: 216 to 297 mm)
  279 to 297 mm: 45° tilt,
  B5, B4S: 30° tilt

Measurement position	Specification	Adjustment range
A	4.9 mm	-3 mm to +3 mm
B	10.1 mm	-4 mm to +4 mm
C	6.5 mm	-3 mm to +3 mm
D	16.2 mm	-4 mm to +4 mm

- 1-point parallel staple
  (Paper width: 182 to 216 mm)

Measurement position	Specification	Adjustment range
A	4.5 mm	-3 mm to +3 mm
B	6 mm	-4 mm to +4 mm

- 2-point staple

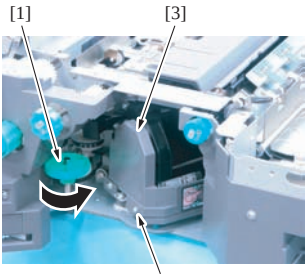
Measurement position	Specification	Adjustment range
C, F	6 mm	-4 mm to +4 mm
D	Y	-4 mm to +4 mm
E	X	-4 mm to +4 mm

Y = (paper width-X-11) / 2

X = A3, A4: 137
B4, B5: 114
A4S: 190
B5S: 162

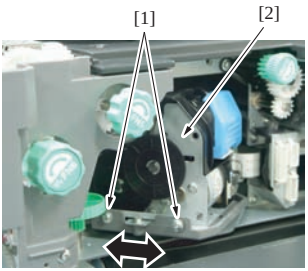
Substitute above into the equation.

3. If the staple position is misaligned, adjust with the following procedure.



9J08F2C518DA

4. Open the front door.
5. Turn the dial [1], and move the stapler forward.
6. Loosen the screw [2], and remove the cover [3].



A01GF3C509DA

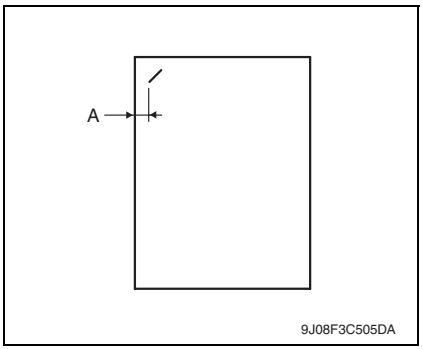
7. Loosen two adjustment screws [1] and move the stapler unit [2] in the direction of the arrow to make the adjustment.
8. Make another print and check the staple position.

6.3 Staple home position sensor position adjustment

NOTE

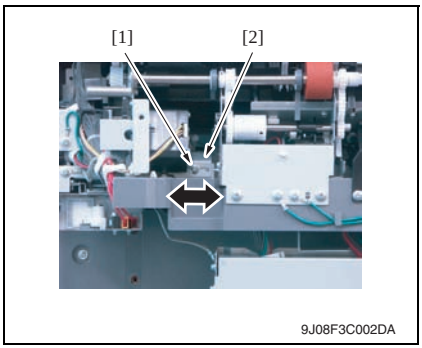
Make this adjustment after any of the following procedures has been performed.

- **When the stapler has been replaced.**
- **When staple position is misaligned.**



1. Set the staple mode and make a print.
2. Check the staple position of the paper.
- 1-point tilted staple
  (Paper width: 216 to 297 mm)
  Specification A: 6.5 mm ± 1.5 mm
3. If the staple position does not fall within the specified range, make an adjustment as shown below.

4. Remove the tray unit.
See P.25



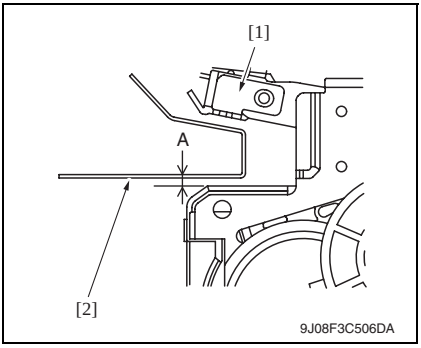
5. Loosen the screw [1] and make the adjustment by shifting stapler home sensor [2] in the direction of an arrow.

6.4 Adjustment of clearance between stapler and FD stopper

NOTE

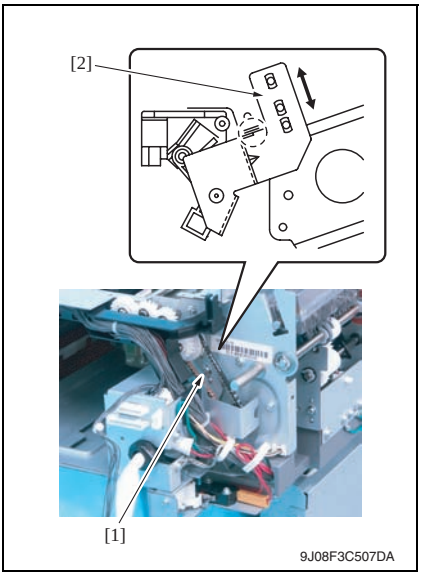
Make this adjustment after any of the following procedures has been performed.

- **When stapler fails to move appropriately.**



1. Check the clearance between the stapler unit [1] and the FD stopper [2] is within the specified range.
   Specification A: 2.0 mm ± 0.5 mm
2. If the value does not fall within the specified range, make the adjustment as shown below.

3. Remove the finisher unit.
   See P.28
4. Remove the finisher unit rear cover.
   See P.20



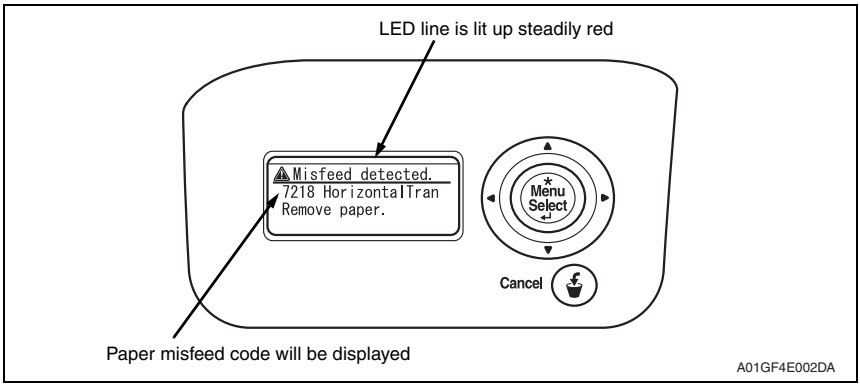
5. Loosen the screw [1] and move the mounting plate [2] to adjust.

Troubleshooting

7. Jam display

7.1 Misfeed display

- When a paper misfeed occurs, the LED line lights up red steadily and the misfeed message is displayed on the control panel of the machine.

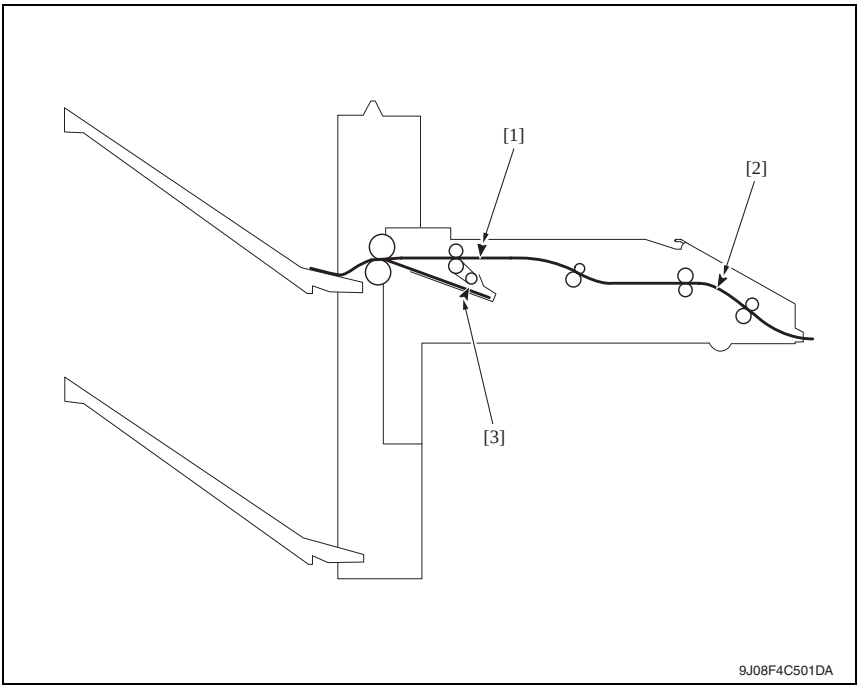


Code	Misfeed location	Misfeed processing location	Action
7218	Finisher transport section misfeed	Front door	P.70
7216	Finisher exit section misfeed	Front door	P.71
7221	Finisher bundle exit misfeed	Front door	P.71
7281	Finisher staple misfeed	Front door	P.72
7243	Finisher punch misfeed	Front door	P.72

7.1.1 Misfeed display resetting procedure

- Open the corresponding door, clear the sheet of paper misfed, and close the door.

7.2 Sensor layout



[1]	Transport sensor	PS2
[2]	Entrance sensor	PS1
[3]	Storage tray detect sensor	PS3

7.3 Solution

7.3.1 Initial check items

- When a paper misfeed occurs, first perform the following initial check items.

Check Item	Action
Does the paper meet product specifications?	Change the paper.
Is paper curled, wavy, or damp?	See "Solution when paper curl occurs" on P.69.
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 rolls/rollers dirty, deformed, or worn?	Clean or change 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 found operational when checked for correct operation?	Correct or change the defective actuator.

7.3.2 Solution when paper curl occurs

Step	Check items/actions		
1	Turn over the stacked paper in the paper tray.	OK	—
		NG	Go to step 2.
2	Does paper curl occur just after a warm-up has been completed or the sleep mode has been turned OFF?	YES	Go to step 3.
	Does paper curl occur under normal conditions (under conditions other than those mentioned above)?	YES	Go to step 5.
3	*1.* Call the Service Mode to the screen. *2.* Select [System Settings] → [Change WarmupTime]. *3.* Change the setting to [Mode 3]. See P.217 of the main body service manual.	OK	—
		NG	Go to step 4.
4	*1.* Call the Service Mode to the screen. *2.* Select [System Settings] → [Change WarmupTime]. *3.* Change the setting to [Mode 4]. See P.217 of the main body service manual.	—	—
5	*1.* Call the Service Mode to the screen. *2.* Select [MachineAdjustment] → [FusingTemperature]. *3.* Select a paper type. *4.* Change the temperature of Heater Roller to [-10 °C]. See P.225 of the main body service manual.	OK	—
		NG	Go to step 6
6	*1.* Call the Service Mode to the screen. *2.* Select [MachineAdjustment] → [FusingTemperature]. *3.* Select a paper type. *4.* Change the temperature of Heater Roller to [-20 °C]. See P.225 of the main body service manual.	—	—

7.3.3 Transport section misfeed

A. Detection timing

Type	Description
Finisher transport section misfeed detection	The entrance sensor (PS1) is not turned ON even after the set period of time has elapsed after the printer's paper exit sensor (PS25) is turned ON by the paper.
	The entrance sensor (PS1) is not turned OFF even after the set period of time has elapsed after the printer's paper exit sensor (PS25) is turned OFF by the paper.
Finisher transport section misfeed detection	The entrance sensor (PS1) is turned ON when the power switch is set to ON, a door or cover is opened and closed, or a misfeed or malfunction is reset.
	The transport sensor (PS2) is turned ON when the 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	
Paper exit sensor (PS25) Entrance sensor (PS1) Transport sensor (PS2)	FS control board (FSCB) MFP board (MFPB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Initial check items	—	—
2	PS25 I/O check	—	—
3	PS1 I/O check	FSCB PJ19FSCB-11 (ON)	FS-519 C-7
4	PS2 I/O check	FSCB PJ19FSCB-14 (ON)	FS-519 C-7
5	Change FSCB	—	—
6	Change MFPB	—	—

7.3.4 Exit section misfeed

A. Detection timing

Type	Description
Finisher exit section misfeed detection	The transport sensor (PS2) is not turned ON even after the set period of time has elapsed after the entrance sensor (PS1) is turned ON by the paper.
	The transport sensor (PS2) is not turned OFF even after the set period of time has elapsed after the entrance sensor (PS1) is turned OFF by the paper.

B. Action

Relevant electrical parts	
Entrance sensor (PS1) Transport sensor (PS2)	FS control board (FSCB) MFP board (MFPB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Initial check items	—	—
2	PS1 I/O check	FSCB PJ19FSCB-11 (ON)	FS-519 C-7
3	PS2 I/O check	FSCB PJ19FSCB-14 (ON)	FS-519 C-7
4	Change FSCB	—	—
5	Change MFPB	—	—

7.3.5 Finisher bundle exit misfeed

A. Detection timing

Type	Description
Finisher bundle exit misfeed detection	The storage tray detect sensor (PS3) is not turned OFF even after the set period of time has elapsed after the exit motor (M4) is energized.

B. Action

Relevant electrical parts	
Storage tray detect sensor (PS3) Exit motor (M4)	FS control board (FSCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Initial check items	—	—
2	PS3 I/O check	FSCB PJ14FSCB-8 (ON)	FS-519 C-12
3	M4 operation check	FSCB PJ10FSCB-5 to 8	FS-519 C-3
4	Change FSCB	—	—

7.3.6 Finisher staple misfeed

A. Detection timing

Type	Description
Finisher staple misfeed detection	The staple home position sensor in the staple unit is not turned ON even after the set period of time has elapsed after the staple motor rotates forward, and then the staple motor rotates backward, and the staple home position sensor in the staple unit is turned ON within the set period of time.

B. Action

Relevant electrical parts	
Staple unit	FS control board (FSCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Initial check items	—	—
2	Drive coupling section check	—	—
3	I/O check	—	—
4	Change staple unit	—	—
5	Change FSCB	—	—

7.3.7 Finisher punch misfeed (PK-515)

A. Detection timing

Type	Description
Finisher punch misfeed detection	Punch positioning sensors 1 and 2 are not turned ON even after the set period of time has elapsed after the punch motor is energized.

B. Action

Relevant electrical parts	
Punch unit	FS control board (FSCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Initial check items	—	—
2	Drive coupling section check	—	—
3	I/O check	—	—
4	Change punch unit	—	—
5	Change FSCB	—	—

8. Malfunction code

8.1 Trouble code

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

Code	Description	Detection timing
C1004	FNS communication error	• When the FS control board (FSCB) is receiving data, a communication error is detected.
C1183	Elevator motor ascent/ descent drive failure	• The elevator tray lower limit sensor (PS13) is not turned ON even after the set period of time has elapsed after the power switch is set to ON. • The elevator tray home position sensor (PS11) and elevator top face detection sensor (PS12) are not turned ON even after the set period of time has elapsed after the elevator motor (M11) is energized. • The elevator tray does not stop at the position for the specified tray after the elevator motor (M11) is energized (beginning of descent operation) and the elevator tray lower limit sensor (PS13) is turned ON. • The elevator top face detection sensor (PS12) is not turned ON even after the set period of time has elapsed after the elevator motor (M11) is energized (beginning of ascent operation) when paper is being fed out.
C1190	Aligning plate 1 drive failure	• The alignment home position sensor/1 (PS7) is not turned ON even after the set period of time has elapsed after the power switch is set to ON. • The alignment home position sensor/1 (PS7) is not turned OFF even after the set period of time has elapsed after the align motor/1 (M5) is energized.
C1191	Aligning plate 2 drive failure	• The alignment home position sensor/2 (PS8) is not turned ON even after the set period of time has elapsed after the power switch is set to ON. • The alignment home position sensor/2 (PS8) is not turned OFF even after the set period of time has elapsed after the align motor/2 (M6) is energized.
C11A0	Paper holding drive failure	• The exit paddle home position sensor (PS6) is not turned ON even after the set period of time has elapsed after the exit paddle solenoid (SD2) is activated (beginning of paddle retraction operation). • The exit paddle home position sensor (PS6) is not turned OFF even after the set period of time has elapsed after the exit paddle solenoid (SD2) is activated (beginning of paddle paper-holding operation).
C11A1	Exit roller pressure/ retraction failure	• The exit roller home position sensor (PS5) is not turned ON even after the set period of time has elapsed after the exit roller motor (M10) is energized (beginning of pressure operation). • The exit roller home position sensor (PS5) is not turned OFF even after the set period of time has elapsed after the exit roller motor (M10) is energized (beginning of retraction operation).

Code	Description	Detection timing
C11A3	Shutter drive failure	• The shutter home position sensor (PS14) is not turned OFF even after the set period of time has elapsed after the shutter motor (M8) is energized (beginning of shutter-opening operation). • The shutter home position sensor (PS14) is not turned ON even after the set period of time has elapsed after the shutter motor (M8) is energized (beginning of shutter-closing operation).
C11B0	Staple unit CD drive failure	• The staple home position sensor (PS9) is not turned ON even after the set period of time has elapsed after the stapling unit moving motor (M7) is energized (beginning of return operation to predetermined position).
C11B2	Staple drive failure	• The home position sensor is not turned ON even after the set period of time has elapsed after the staple motor is energized (beginning of staple operation).
C11C0	Punch cam motor unit failure	• The punch home position sensor (PS600) is not turned ON even after the set period of time has elapsed while the punch motor (M99) is energized.
C1301	Finishing option cooling fan motor failure	• The cooling fan motor (FM9) lock signal remains set to H for a set period of time while the cooling fan motor (FM9) is turning. • The cooling fan motor (FM9) lock signal remains set to L for a set period of time while the cooling fan motor (FM9) remains stopped.
CC155	Finisher ROM failure	• Data of flash ROM of the finishing options is determined to be faulty when the power is turned ON.

8.2 Solution

8.2.1 C1004: FNS communication error

Relevant electrical parts	
FS control board (FSCB)	

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Disconnect and then connect the power cord. Turn OFF the power switch, wait for 10 sec. or more, and turn ON the power switch.	—	—
2	Rewrite firmware using the compact flash card.	—	—
3	Change FSCB	—	—

8.2.2 C1183: Elevator motor ascent/descent drive failure

Relevant electrical parts	
Elevator motor (M11) Elevator tray home position sensor (PS11) Elevator tray lower limit sensor (PS13)	Elevator top face detection sensor (PS12) Relay board/1 (REYB/1) FS control board (FSCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the M11 connector for proper connection and correct as necessary.	—	—
2	Check M11 for proper drive coupling and correct as necessary.	—	—
3	If OT-602 is connected, check the connector for proper connection, and correct as necessary.	—	—
4	Check the installation position of the OT-602 tray, and correct as necessary.	—	—
5	M11 operation check	FSCB PJ6FSCB-5 to 6	FS-519 J-4
6	PS11 I/O check	FSCB PJ18FSCB-6 (ON)	FS-519 L-3
7	PS13 I/O check	FSCB PJ18FSCB-3 (ON)	FS-519 L-4
8	PS12 I/O check	FSCB PJ18FSCB-4 (ON)	FS-519 L-3
9	Change REYB/1	—	—
10	Change FSCB	—	—

8.2.3 C1190: Aligning plate 1 drive failure

8.2.4 C1191: Aligning plate 2 drive failure

Relevant electrical parts	
Align motor/1 (M5) Align motor/2 (M6) Alignment home position sensor/1 (PS7) Alignment home position sensor/2 (PS8)	FS control board (FSCB)

• C1190

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the M5 connector for proper connection and correct as necessary.	—	—
2	Check M5 for proper drive coupling and correct as necessary.	—	—
3	M5 operation check	FSCB PJ11FSCB-1 to 4	FS-519 C-10
4	PS7 I/O check	FSCB PJ14FSCB-3 (ON)	FS-519 C-11
5	Change FSCB	—	—

• C1191

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the M6 connector for proper connection and correct as necessary.	—	—
2	Check M6 for proper drive coupling and correct as necessary.	—	—
3	M6 operation check	FSCB PJ11FSCB-5 to 8	FS-519 C-11
4	PS8 I/O check	FSCB PJ14FSCB-6 (ON)	FS-519 C-11
5	Change FSCB	—	—

8.2.5 C11A0: Paper holding drive failure

Relevant electrical parts	
Exit paddle solenoid (SD2) Exit paddle home position sensor (PS6)	FS control board (FSCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the SD2 connector for proper connection and correct as necessary.	—	—
2	PS6 I/O check	FSCB PJ13FSCB-11 (ON)	FS-519 C-4
3	SD2 operation check	FSCB PJ13FSCB-2 (REM)	FS-519 C-5
4	Change FSCB	—	—

8.2.6 C11A1: Exit roller pressure/retraction failure

Relevant electrical parts	
Exit roller motor (M10) Exit roller home position sensor (PS5)	FS control board (FSCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the M10 connector for proper connection and correct as necessary.	—	—
2	Check M10 for proper drive coupling and correct as necessary.	—	—
3	M10 operation check	FSCB PJ12FSCB-8 to 9	FS-519 C-9
4	PS5 I/O check	FSCB PJ19FSCB-3 (ON)	FS-519 C-8
5	Change FSCB	—	—

8.2.7 C11A3: Shutter drive failure

Relevant electrical parts	
Shutter motor (M8) Shutter home position sensor (PS14)	Relay board/1 (REYB/1) FS control board (FSCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the M8 connector for proper connection and correct as necessary.	—	—
2	Check M8 for proper drive coupling and correct as necessary.	—	—
3	M8 operation check	FSCB PJ6FSCB-7 to 8	FS-519 J-5
4	PS14 I/O check	FSCB PJ18FSCB-5 (ON)	FS-519 J-5
5	Change REYB/1	—	—
6	Change FSCB	—	—

8.2.8 C11B0: Staple unit CD drive failure

Relevant electrical parts	
Stapling unit moving motor (M7) Staple home position sensor (PS9)	FS control board (FSCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check for interference with the shutter and exit roller, and correct as necessary.	—	—
2	Check the M7 connector for proper connection and correct as necessary.	—	—
3	Check M7 for proper drive coupling and correct as necessary.	—	—
4	M7 operation check	FSCB PJ10FSCB-1 to 4	FS-519 C-3 to 4
5	PS9 I/O check	FSCB PJ13FSCB-5 (ON)	FS-519 C-4 to 5
6	Change FSCB	—	—

8.2.9 C11B2: Staple drive failure

Relevant electrical parts	
Staple unit	FS control board (FSCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the staple unit connector for proper connection and correct as necessary.	—	—
2	Check the staple unit for proper drive coupling, and correct as necessary.	—	—
3	Staple unit operation check	—	—
4	Change staple unit	—	—
5	Change FSCB	—	—

8.2.10 C11C0: Punch cam motor unit failure

Relevant electrical parts	
Punch unit	FS control board (FSCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the punch unit connectors for proper connection, and correct as necessary.	—	—
2	Check the punch unit for proper drive coupling, and correct as necessary.	—	—
3	Punch unit I/O check	—	—
4	Change punch unit	—	—
5	Change FSCB	—	—

8.2.11 C1301: Finishing option cooling fan motor failure

Relevant electrical parts	
Cooling fan motor (FM9)	FS control board (FSCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the FM9 connector for proper connection and correct as necessary.	—	—
2	Check FM9 for proper drive coupling and correct as necessary.	—	—
3	Check the FSCB connectors for proper connection, and correct as necessary.	—	—
4	FM9 operation check	FSCB PJ12FSCB-3	FS-519 C-10
5	Change FSCB	—	—

8.2.12 CC155: Finisher ROM failure

Relevant electrical parts	
FS control board (FSCB)	

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Disconnect and then connect the power cord. Turn OFF the power switch, wait for 10 sec. or more, and turn ON the power switch.	—	—
2	Rewrite firmware using the compact flash card.	—	—
3	Change FSCB	—	—

KONICA MINOLTA

SERVICE MANUAL

FIELD SERVICE

MT-502

2007.10

KONICA MINOLTA BUSINESS TECHNOLOGIES, INC. Ver. 1.0

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
2007/10	1.0	—	Issue of the first edition

CONTENTS

MT-502

General

1. Product specification 1

Maintenance

2. Other 3
2.1 Disassembly/adjustment prohibited items 3
2.2 Disassembly/Assembly/Cleaning list (Other parts) 4
2.2.1 Disassembly/Assembly parts list 4
2.2.2 Cleaning parts list 4
2.3 Disassembly/Assembly procedure 4
2.3.1 Rear cover/Right door 4
2.3.2 Front cover/Upper cover/Paper output tray 5
2.4 Cleaning procedure 5
2.4.1 Cleaning of the roller and roll 5

Troubleshooting

3. Jam display 7
3.1 Misfeed display 7
3.1.1 Misfeed display resetting procedure 7
3.2 Sensor layout 8
3.3 Solution 9
3.3.1 Initial check items 9
3.3.2 Solution when paper curl occurs 9
3.3.3 Transport section misfeed 10

Blank Page

General

1. Product specification

A. Type

Name	Mailbin kit	
Installation	Install at the top section of the finisher elevator tray.	
Number of bins	4 bins	
Number of sheets stored per bin	125 sheets (Total 500 sheets) (90 g/m^2, 24 lb)	
Storable paper	Plain paper	60 to 90 g/m^2 (16 to 24 lb)
	Recycled paper	
Storable paper size	Metric area	A5S, B5, A4
	Inch area	5-$^1/_2$ x 8-$^1/_2$S, 8-$^1/_2$ x 11 StatementS, Letter

B. Machine specifications

Power requirements	DC 24 V (Supplied from the finisher) DC 5 V (Generated inside the mail bin)
Dimensions	340 mm (W) x 509 mm (D) x 387 mm (H) 13.5 inch (W) x 20 inch (D) x 15.25 inch (H)
Weight	8.0 kg (17.75 lb)

C. Operating environment

- Conforms to the operating environment of the main body.

NOTE

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

Blank Page

Maintenance

2. Other

2.1 Disassembly/adjustment prohibited items

A. Paint-locked screws

NOTE

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

B. Red-painted screws

NOTE

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

C. Variable resistors on board

NOTE

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

D. Removal of PWBs

⚠ CAUTION

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

2.2 Disassembly/Assembly/Cleaning list (Other parts)

2.2.1 Disassembly/Assembly parts list

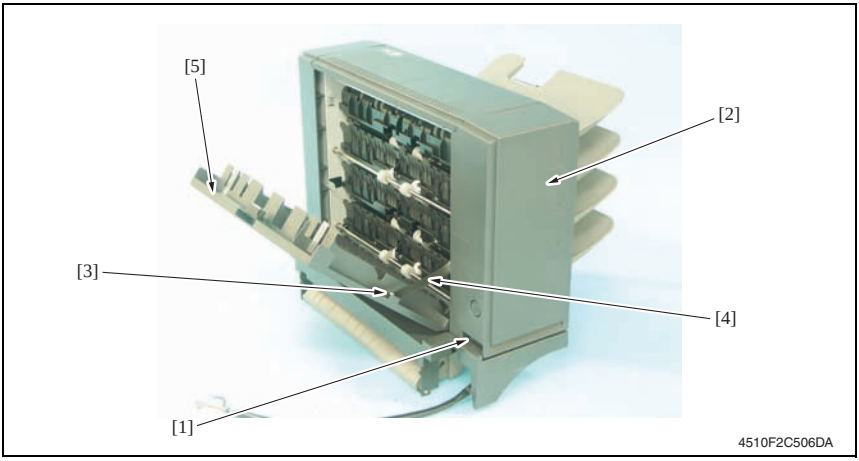
No.	Section	Part name	Ref. page
1	Exterior parts	Rear cover	P.4
2		Front cover	P.5
3		Upper cover	P.5
4		Right door	P.4
5		Paper output tray	P.5

2.2.2 Cleaning parts list

No.	Section	Part name	Ref. page
1	Exit section	Roller and roll	P.5

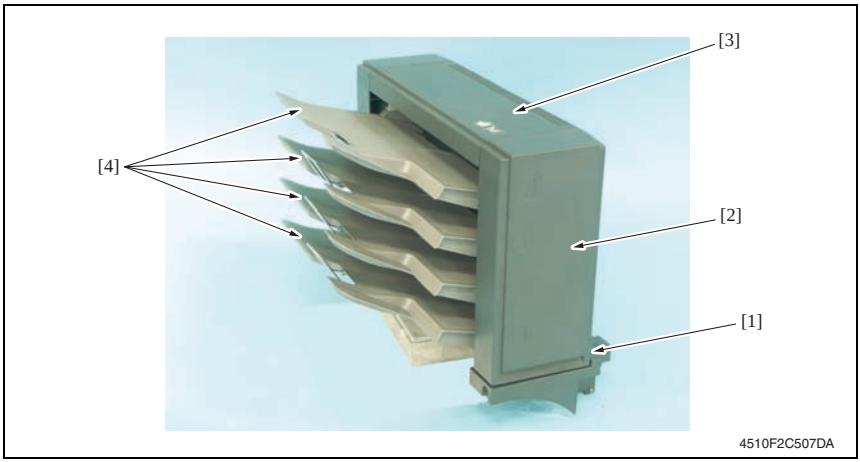
2.3 Disassembly/Assembly procedure

2.3.1 Rear cover/Right door



1. Remove the screw [1] and remove the rear cover [2].
2. Remove the screw [3], the stopper [4], and remove the right door [5].

2.3.2 Front cover/Upper cover/Paper output tray



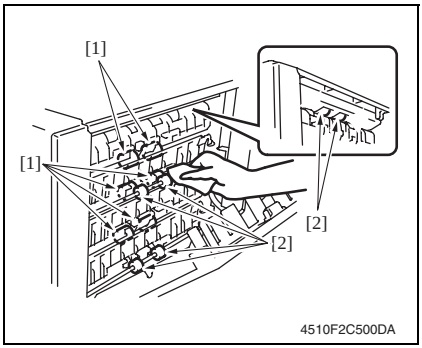
1. Remove the screw [1] and remove the front cover [2].
2. Remove the rear cover.
See P.4
3. Remove the upper cover [3].
4. Remove the paper output trays [4].

2.4 Cleaning procedure

NOTE

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

2.4.1 Cleaning of the roller and roll



1. Open the right door.
2. Using a cleaning pad dampened with alcohol, wipe the roller [1] and roll [2].

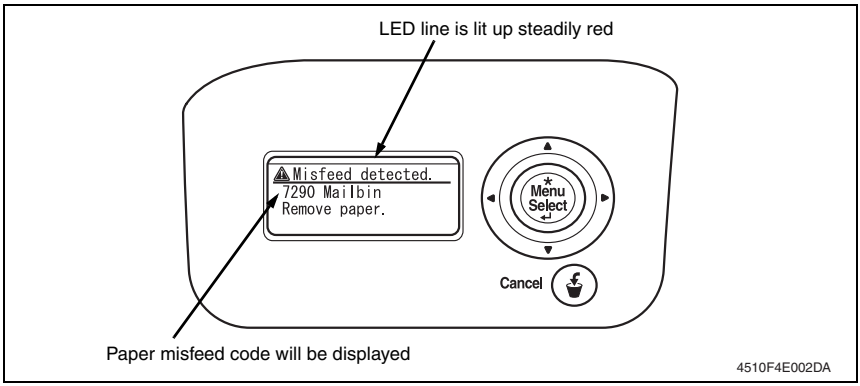
Blank Page

Troubleshooting

3. Jam display

3.1 Misfeed display

- When a paper misfeed occurs, the LED line lights up red steadily and the misfeed message is displayed on the control panel of the machine.

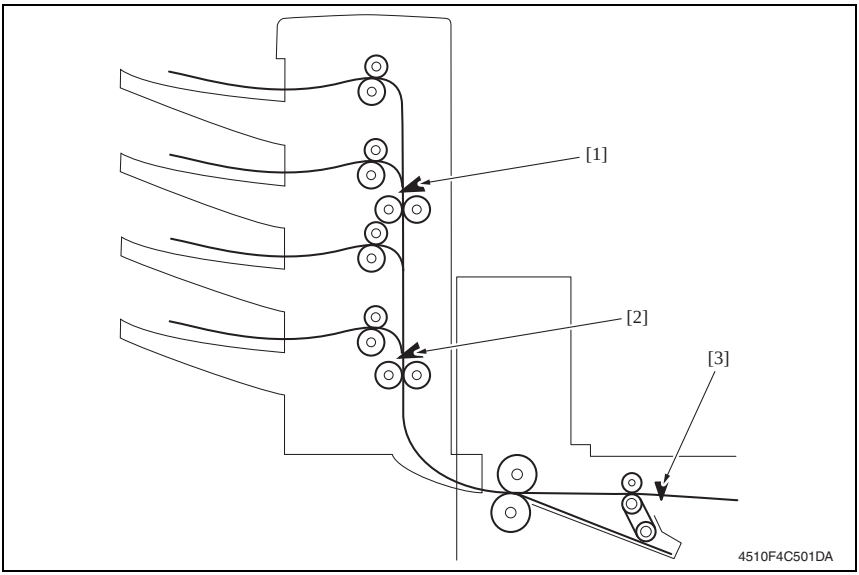


Code	Misfeed location	Misfeed access location	Action
7290	Vertical transport section	Right door	P.10

3.1.1 Misfeed display resetting procedure

- Open the corresponding door, clear the sheet of paper misfed, and close the door.

3.2 Sensor layout



[1]	Upper transport sensor	PS9
[2]	Lower transport sensor	PS10
[3]	Transport sensor	PS2

3.3 Solution

3.3.1 Initial check items

- When a paper misfeed occurs, first perform the following initial check items.

Check Item	Action
Does the paper meet product specifications?	Change the paper.
Is paper curled, wavy, or damp?	See “Solution when paper curl occurs” on P.9.
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 rolls/rollers dirty, deformed, or worn?	Clean or change 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 found operational when checked for correct operation?	Correct or change the defective actuator.

3.3.2 Solution when paper curl occurs

Step	Check items/actions		
1	Turn over the stacked paper in the paper tray.	OK	—
		NG	Go to step 2.
2	Does paper curl occur just after a warm-up has been completed or the sleep mode has been turned OFF?	YES	Go to step 3.
	Does paper curl occur under normal conditions (under conditions other than those mentioned above)?	YES	Go to step 5.
3	*1.* Call the Service Mode to the screen. *2.* Select [System Settings] → [Change WarmupTime]. *3.* Change the setting to [Mode 3]. See P.217 of the main body service manual.	OK	—
		NG	Go to step 4.
4	*1.* Call the Service Mode to the screen. *2.* Select [System Settings] → [Change WarmupTime]. *3.* Change the setting to [Mode 4]. See P.217 of the main body service manual.	—	—
5	*1.* Call the Service Mode to the screen. *2.* Select [MachineAdjustment] → [FusingTemperature]. *3.* Select a paper type. *4.* Change the temperature of Heater Roller to [-10 °C]. See P.225 of the main body service manual.	OK	—
		NG	Go to step 6
6	*1.* Call the Service Mode to the screen. *2.* Select [MachineAdjustment] → [FusingTemperature]. *3.* Select a paper type. *4.* Change the temperature of Heater Roller to [-20 °C]. See P.225 of the main body service manual.	—	—

3.3.3 Transport section misfeed

A. Detection timing

Type	Description
Transport section misfeed detection	The lower transport sensor (PS10) is not turned ON even after the set period of time has elapsed after the transport sensor (PS2) is turned ON by the paper.
	The upper transport sensor (PS9) is not turned ON even after the set period of time has elapsed after the lower transport sensor (PS10) is turned ON by the paper.
Detection of paper remaining in the transport section	The lower transport sensor (PS10) is turned ON when the power switch is set to ON, a door or cover is opened and closed, or a misfeed or malfunction is reset.
	The upper transport sensor (PS9) is turned ON when the 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	
Transport sensor (PS2) Lower transport sensor (PS10) Upper transport sensor (PS9)	MT control board (MTCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Initial checks	—	—
2	PS2 I/O check	FSCB PJ19FSCB-14 (ON)	FS-519 C-7
3	PS10 I/O check	MTCB CN102MTCB-8 (ON)	MT-502 B to C-4
4	PS9 I/O check	MTCB CN101MTCB-8 (ON)	MT-502 B to C-3
5	MTCB replacement	—	—

KONICA MINOLTA

SERVICE MANUAL

FIELD SERVICE

SD-505

2007.10

KONICA MINOLTA BUSINESS TECHNOLOGIES, INC. Ver. 1.0

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
2007/10	1.0	—	Issue of the first edition

CONTENTS

SD-505

General

1. Product specification 1

Maintenance

2. Service tool 3
2.1 CE tool list 3
3. Other 4
3.1 Disassembly/adjustment prohibited items 4
3.2 Disassembly/Assembly/Cleaning list (other parts) 5
3.2.1 Disassembly/Assembly parts list 5
3.2.2 Cleaning parts list 5
3.3 Disassembly/Assembly procedure 5
3.3.1 Paper output tray/front cover 5
3.3.2 Rear cover 6
3.3.3 Upper cover 6
3.3.4 Saddle unit 7
3.3.5 Crease unit 9
3.3.6 Stapler unit 11
3.3.7 In & out guide motor 15
3.3.8 Crease roller 17
3.4 Cleaning procedure 24
3.4.1 Cleaning of the rollers and rolls 24

Adjustment/Setting

4. How to use the adjustment section 25
5. Finisher operations 26
5.1 Half-Fold Pos. 26
5.2 Center Staple Pos 28
6. Mechanical adjustment 30
6.1 Fold Angle Adjustment 30
6.2 Center Staple Angle Adjustment 31

Troubleshooting

7. Jam display 33
7.1 Misfeed display 33
7.2 Sensor layout 33
7.3 Solution 34
7.3.1 Initial check items 34
7.3.2 Solution when paper curl occurs 34
7.3.3 Paper bundle exit misfeed 35
7.3.4 Staple unit 1 misfeed/Staple unit 2 misfeed 36
7.3.5 Creasing section misfeed 37
8. Malfunction code 38
8.1 Trouble code 38
8.2 Solution 39
8.2.1 C11A2: Saddle exit roller pressure/retraction failure 39
8.2.2 C11A4: Saddle exit motor failure 39
8.2.3 C11A5: Saddle in & out guide motor failure 40
8.2.4 C11A6: Saddle layable guide drive failure 40
8.2.5 C11B5: Side staple 1 drive failure 41
8.2.6 C11B6: Side staple 2 drive failure 41
8.2.7 C11D0: Crease motor drive failure 41

General

1. Product specification

A. Type

Name	Saddle sticher SD-505
Type	Built into the finisher
Installation	Screwed to the finisher
Document alignment	Center
Stapling function	Center parallel two points No. of sheets to be stapled together: 2 to 15

B. Paper

Type	Plain paper	60 g/m^2 to 90 g/m^2 16 to 24 lb
	Recycled paper	
	Thick paper	91 g/m^2 to 209 g/m^2 24.25 to 55.5 lb
Size	B5S to A3 8-$^1/_2$ x 11S/LetterS to 11 x 17	
Capacity	200 sheets or 20 prints	

C. Machine specifications

Power requirements		DC 24 V (supplied from the finisher) DC 5 V
Max. power consumption		9.5 W or less
Dimensions	Crease unit	48 mm (W) x 399 mm (D) x 121 mm (H) 2 inch (W) x 15.75 inch (D) x 4.75 inch (H)
	Saddle unit	445 mm (W) x 478 mm (D) x 203 mm (H) 17.5 inch (W) x 18.75 inch (D) x 8 inch (H) 576 mm (W) x 478 mm (D) x 281 mm (H) *1 22.75 inch (W) x 18.75 inch (D) x 11 inch (H) *1
Weight	Crease unit	1.9 kg (0.5 lb)
	Saddle unit	7.4 kg (2.0 lb)

*1: Size when the paper output tray is pulled out

D. Operating environment

- Conforms to the operating environment of the main body.

E. Consumables

- Staples 2000 (MS-2C) x 2

NOTE

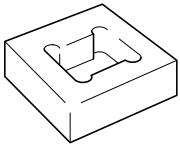
- **These specifications are subject to change without notice.**

Blank Page

Maintenance

2. Service tool

2.1 CE tool list

Tool name	Shape	Personnel	Parts No.	Remarks
Stapler unit positioning jig		1	4511-7901-01	

3. Other

3.1 Disassembly/adjustment prohibited items

A. Paint-locked screws

NOTE

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

B. Red-painted screws

NOTE

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

C. Variable resistors on board

NOTE

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

D. Removal of PWBs

⚠ CAUTION

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

3.2 Disassembly/Assembly/Cleaning list (other parts)

3.2.1 Disassembly/Assembly parts list

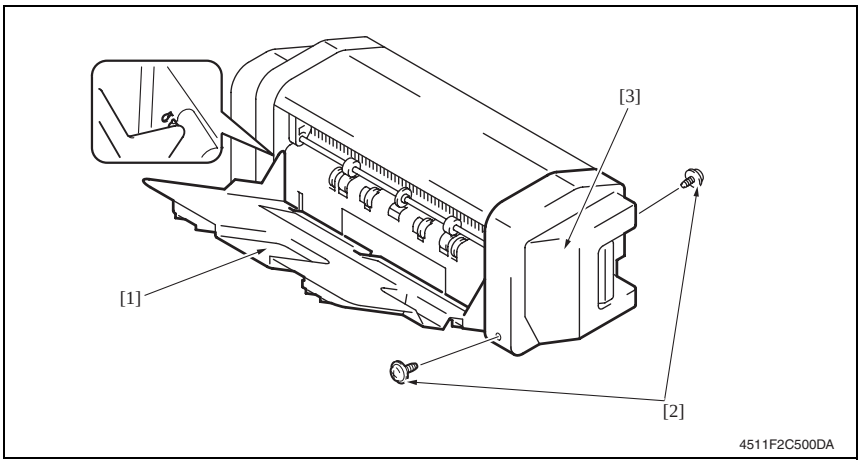
No.	Section	Part name	Ref. page
1	Exterior parts	Paper output tray	P.5
2		Front cover	P.5
3		Upper cover	P.6
4		Rear cover	P.6
5	Units	Saddle unit	P.7
6		Crease unit	P.9
7		Stapler unit	P.11
8	Others	In & out guide drive motor	P.15
9		Crease roller	P.17

3.2.2 Cleaning parts list

No.	Section	Part name	Ref. page
1	Exit section Transport section	Rollers and rolls	P.24

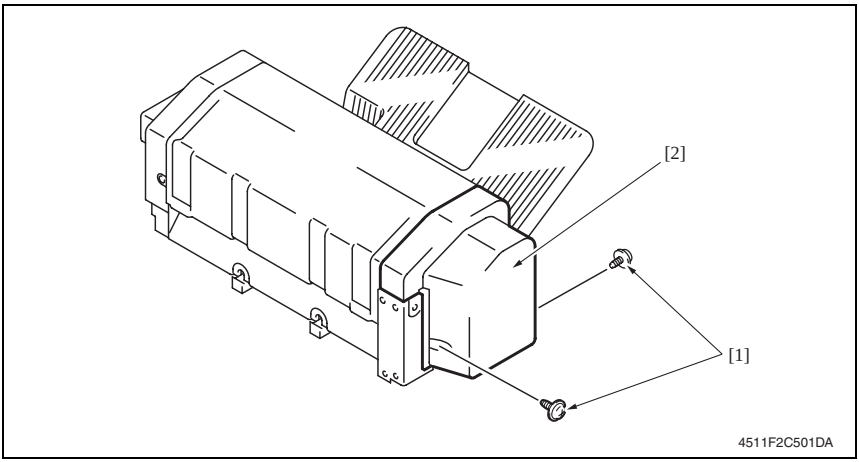
3.3 Disassembly/Assembly procedure

3.3.1 Paper output tray/front cover



1. Align the cutout and remove the paper output tray [1].
2. Remove two screws [2], and remove the front cover [3].

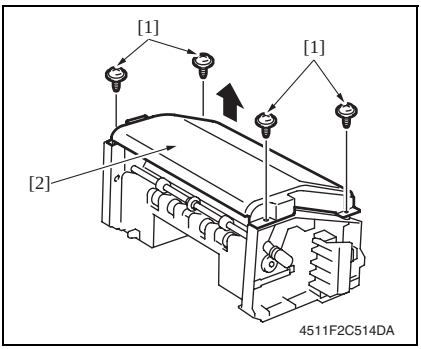
3.3.2 Rear cover



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

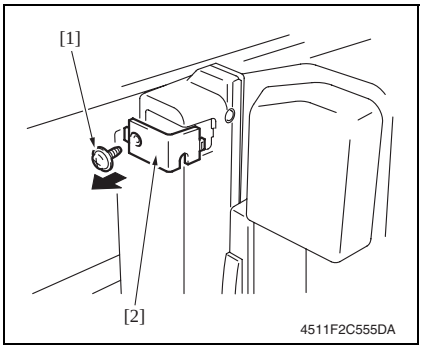
3.3.3 Upper cover

1. Remove the front cover.
See P.5
2. Remove the rear cover.
See P.6

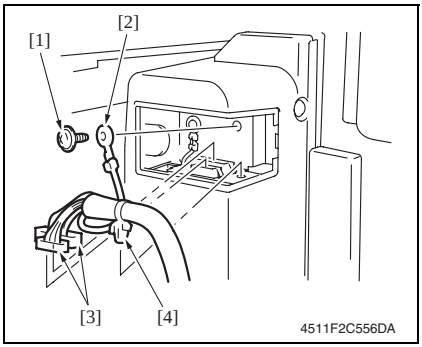


3. Remove four screws [1], and remove the upper cover [2].

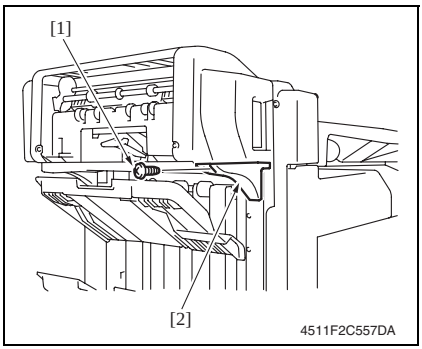
3.3.4 Saddle unit



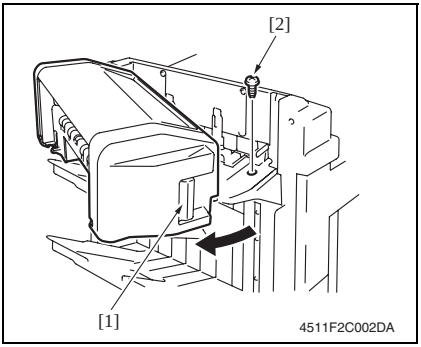
1. Remove the screw [1], and remove the connector cover [2].



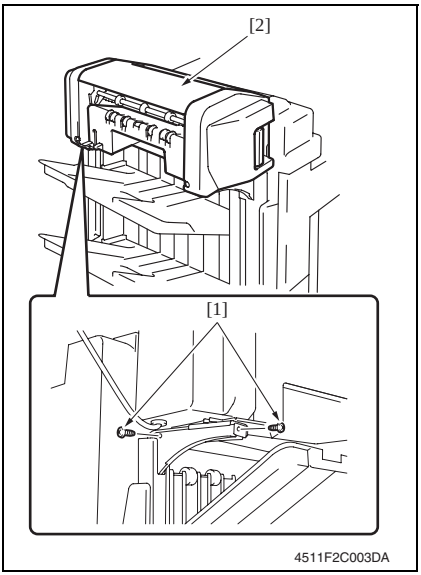
2. Remove the screw [1], and remove the ground wire [2].
3. Disconnect two connectors [3].
4. Remove the snap band [4].



5. Remove the screw [1], and remove the mounting bracket [2].



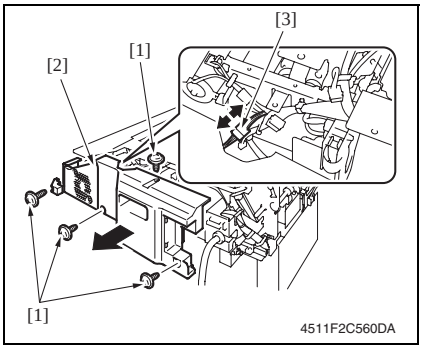
6. Pull the lock release lever [1], and open the saddle unit.
7. Remove the screw [2].



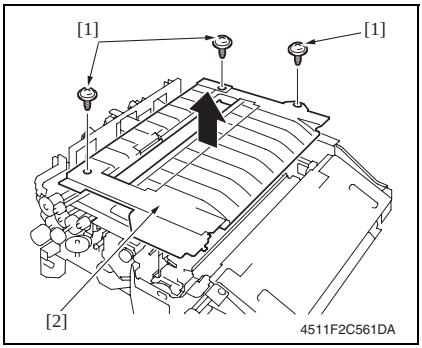
8. Remove two screws [1], and remove the saddle unit [2].

3.3.5 Crease unit

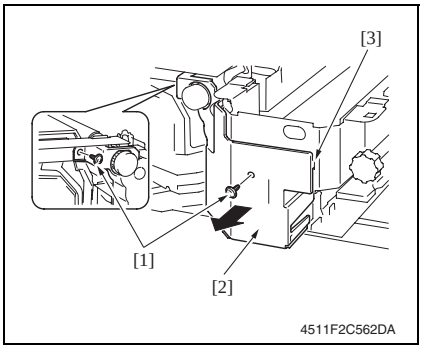
1. Remove the saddle unit.
See P.7
2. Remove the finisher unit.
See P.28 of the FS-519/PK-515/OT-602 service manual.



3. Remove four screws [1] and remove the finisher unit rear cover [2].
4. Disconnect the connector [3].



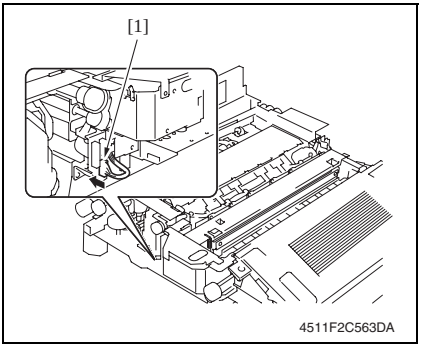
5. Remove three screws [1] and remove the finisher unit upper cover [2].



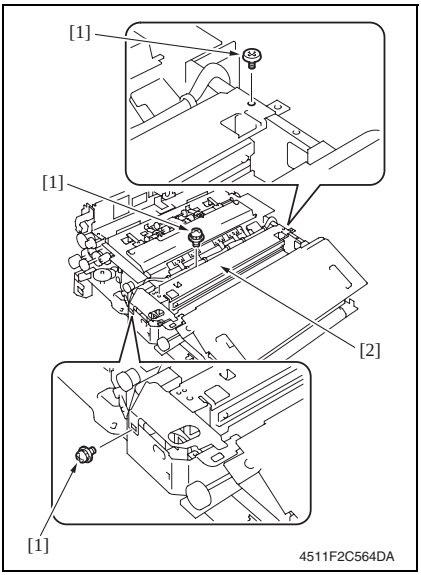
6. Remove two screws [1] and remove the finisher unit right front cover [2].

NOTE

- **At reinstallation, first fit the tab [3] into position.**



7. Disconnect the connector [1].



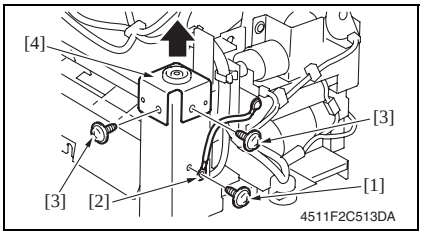
8. Remove three screws [1], and remove the crease unit [2].

NOTE

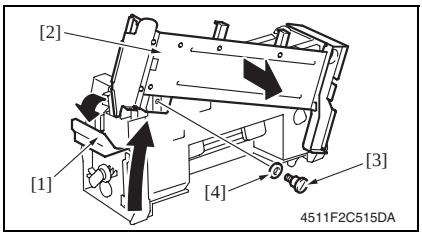
- **When the punch kit is mounted, remove the punch kit first.**

3.3.6 Stapler unit

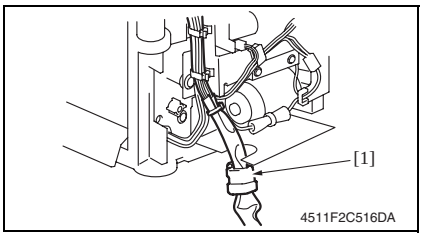
1. Remove the saddle unit.
See P.7
2. Remove the paper output tray.
See P.5
3. Remove the front cover.
See P.5
4. Remove the rear cover.
See P.6
5. Remove the upper cover.
See P.6



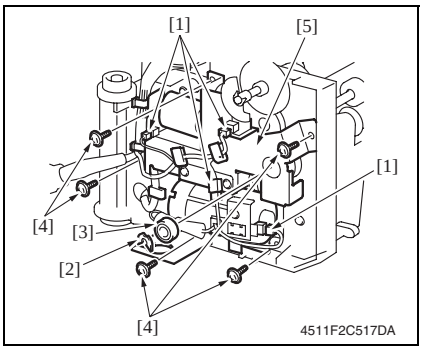
6. Remove the screw [1], and remove the ground wire [2].
7. Remove two screws [3], and remove the holder [4].



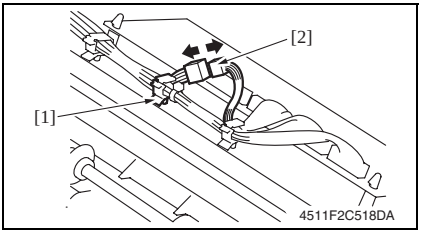
8. Release the lock release lever [1], and slide the saddle unit mounting plate [2].
9. Remove the shoulder screw [3] and the washer [4], and remove the saddle unit mounting plate [2].



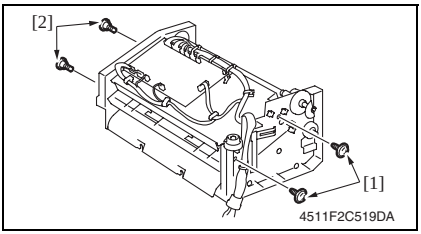
10. Remove the harness clamp [1] from the metal bracket.



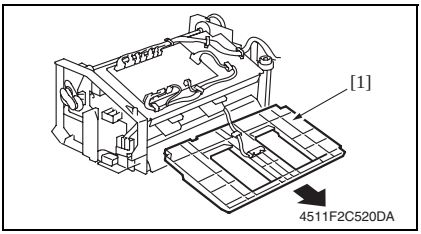
11. Remove the harness from the wire saddle.
12. Disconnect four connectors [1].
13. Remove the C-ring [2], and remove the bearing [3].
14. Remove five screws [4], and remove the drive unit [5].



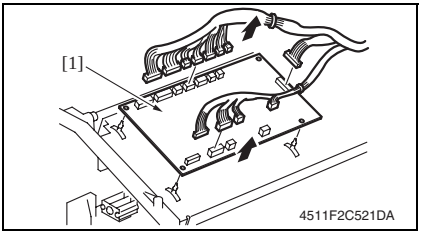
15. Remove the wire saddle [1], and disconnect the connector [2].



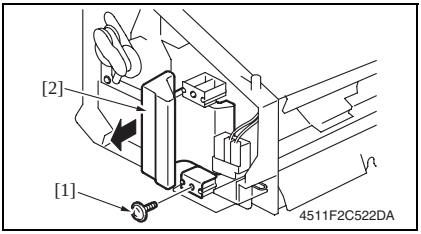
16. Remove two screws [1] and two shoulder screws [2].



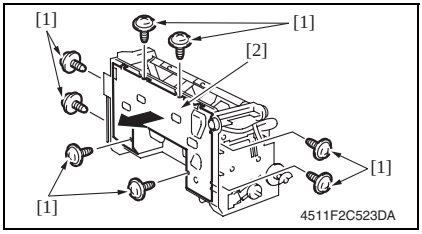
17. Remove the processing tray [1].



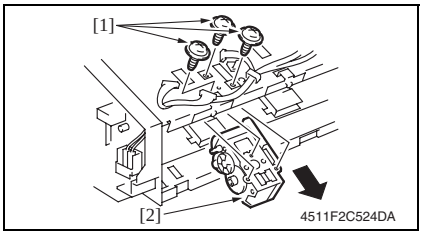
18. Disconnect all the connectors on the SD control board.
19. Remove the board support, and then remove the SD control board [1].



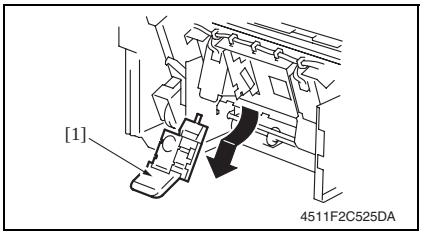
20. Remove the screw [1], and remove the lock release lever [2].



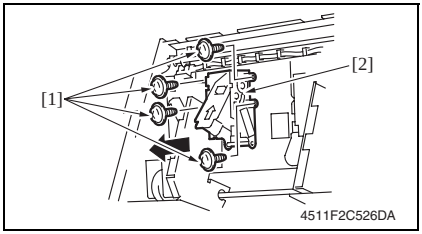
21. Remove eight screws [1], and remove the lower cover [2].



22. Remove the wire saddle and disconnect the connector.
23. Remove three screws [1], and remove the clincher 1 [2].



24. Remove the staple cartridge 1 [1].



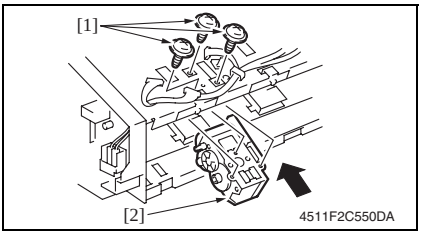
25. Remove four screws [1], and remove the stapler 1 [2].

NOTE

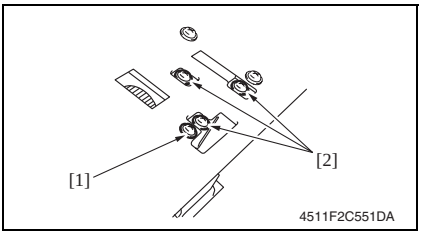
- **To replace clincher 2 and stapler 2, repeat steps 22 to 25.**

Precaution for clincher reinstallation

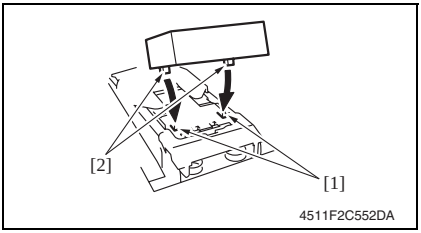
- **When the clincher is installed, the position of the stapler and the clincher will be misaligned. Be sure to perform the following adjustment.**



1. Use three screws [1] to temporary fix the clincher [2].



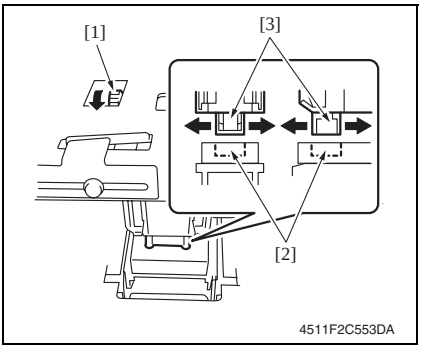
2. Loosen the screw [1] of the stopper.
3. Loosen three screws [2] of the clincher.



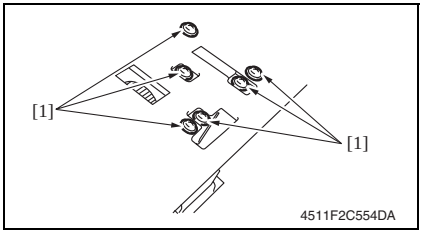
4. Aligning the protrusions of the jig [2] with the recesses in the stapler [1], fit the jig to the stapler.

NOTE

- **Make sure that the protrusions of the jig properly rest in the recesses.**



5. Turn the gear [1] of the clincher and then slide the clincher assy so that the protrusion of the clincher [3] fits into the recess in the jig [2].



6. Tighten six screws [1].

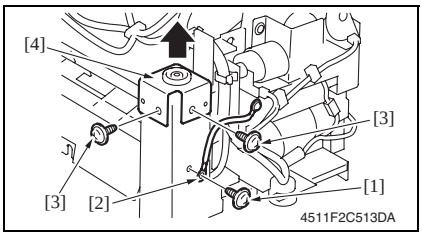
NOTE

- **Turn the gear again and check to see that the protrusion of the clincher smoothly fits into the recess in the jig.**

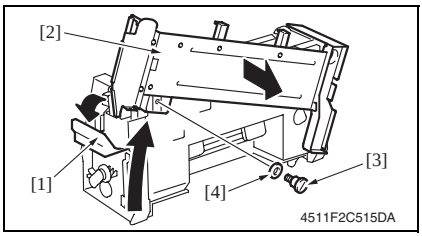
7. Turn the gear and remove the jig.

3.3.7 In & out guide motor

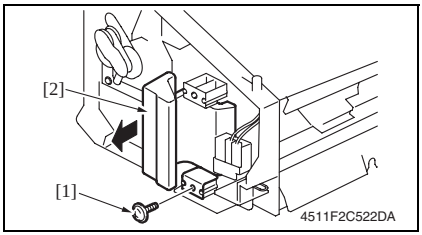
1. Remove the saddle unit.
See P.7
2. Remove the paper output tray.
See P.5
3. Remove the front cover.
See P.5
4. Remove the rear cover.
See P.6
5. Remove the upper cover.
See P.6



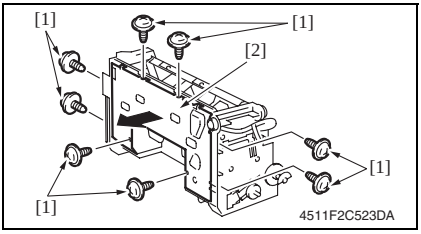
6. Remove the screw [1], and remove the ground wire [2].
7. Remove two screws [3], and remove the holder [4].



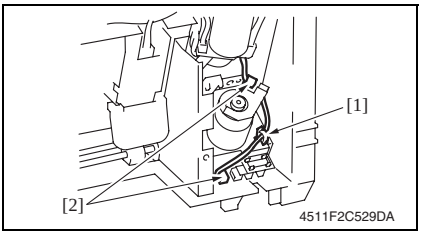
8. Release the lock release lever [1], and slide the saddle unit mounting plate [2].
9. Remove the shoulder screw [3] and the washer [4], and remove the saddle unit mounting plate [2].



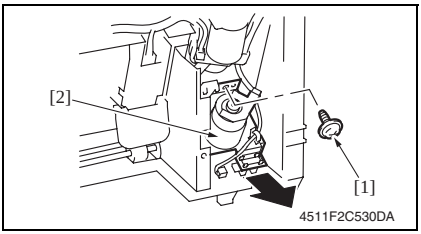
10. Remove the screw [1], and remove the lock release lever [2].



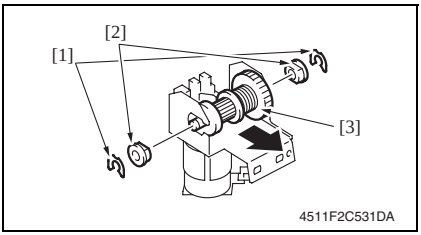
11. Remove eight screws [1], and remove the lower cover [2].



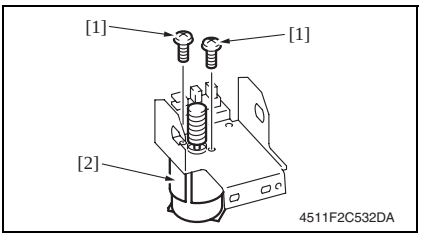
12. Remove the wire saddle [1], and disconnect two connectors [2].



13. Remove the screw [1], and remove the in & out guide motor assy [2].

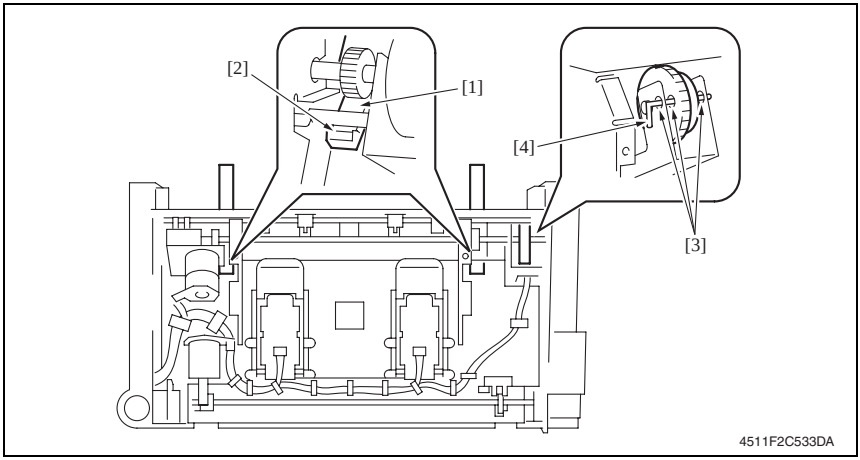


14. Remove two C-rings [1].
15. Remove two bushings [2], and remove the clutch gear assy [3].



16. Remove two screws [1], and remove the in & out guide motor [2].

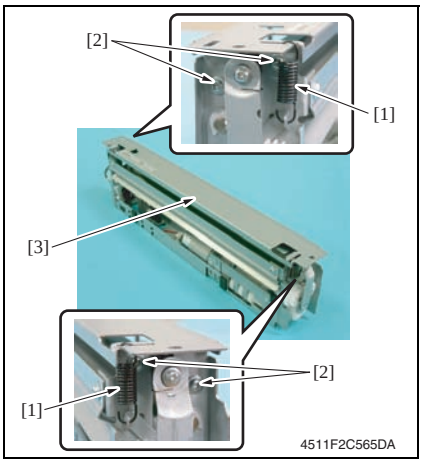
Precaution for in & out guide motor reinstallation



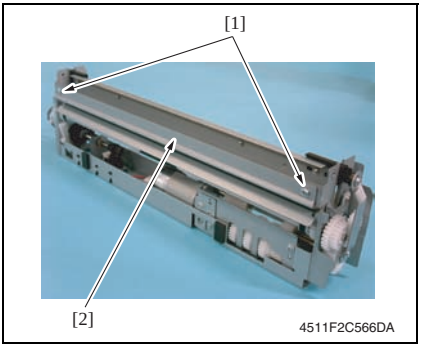
1. Press the two in & out guides [1] in and check that they touch the stopper [2] simultaneously.
2. Check that pins [4] can be inserted through the positioning holes [3] (3 holes) of the in & out guide sensor assy.
3. Use two screws to secure the in & out guide motor.

3.3.8 Crease roller

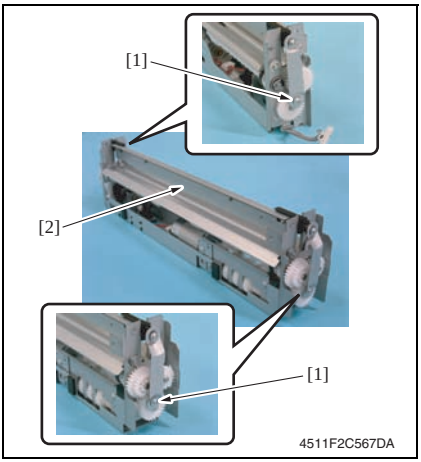
1. Remove the crease unit.
See P.9



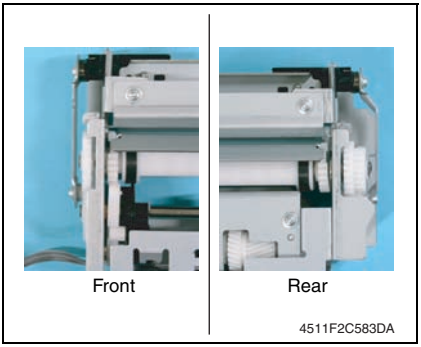
2. Remove two springs [1] and four screws [2], and remove the upper plate [3].



3. Remove two screws [1], and remove the guide plate [2].

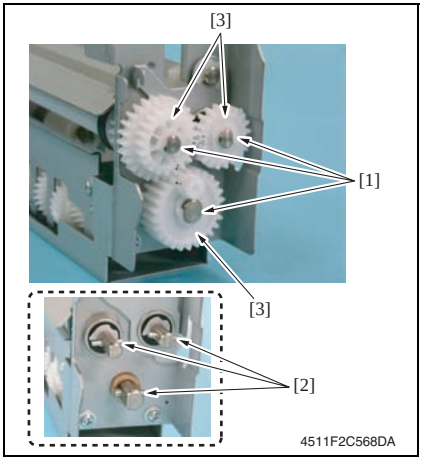


4. Remove two screws [1], and remove the chopper assy [2].



NOTE

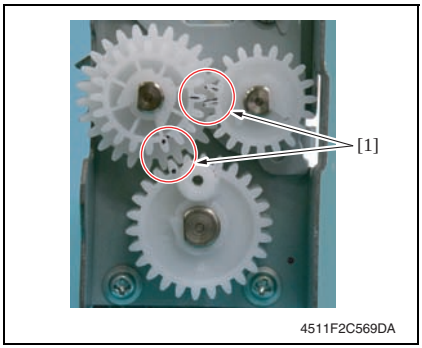
- **Install the chopper assy in the direction shown in the left figure.**



5. Remove three C-rings [1] and three pins [2], and remove three gears [3].

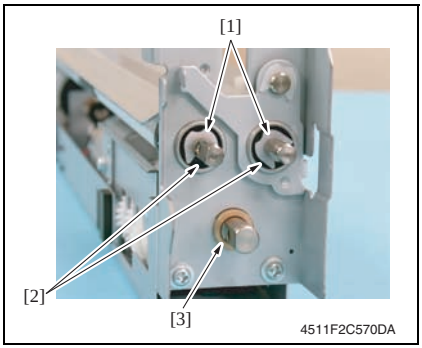
NOTE

- **Use care not to lose the pin.**



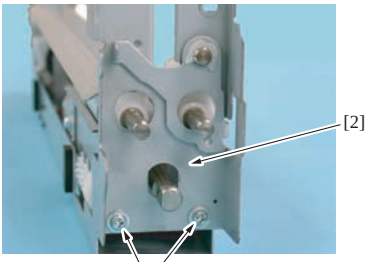
NOTE

- **Install the gear so that the mark [1] is aligned to the position shown in the left figure.**

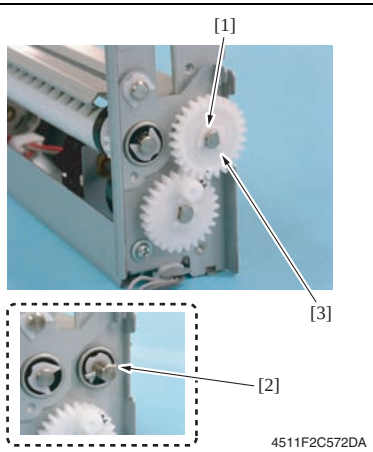


6. Remove two C-rings [1], and remove two bearings [2].

7. Remove the bushing [3].



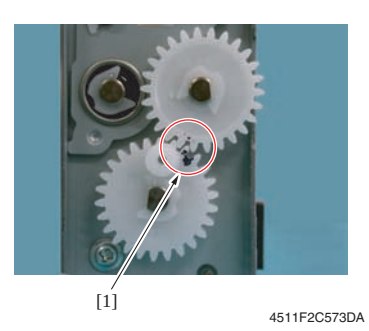
8. Remove two screws [1], and remove the rear holder [2].



9. Remove the C-ring [1] and the pin [2], and remove the gear [3].

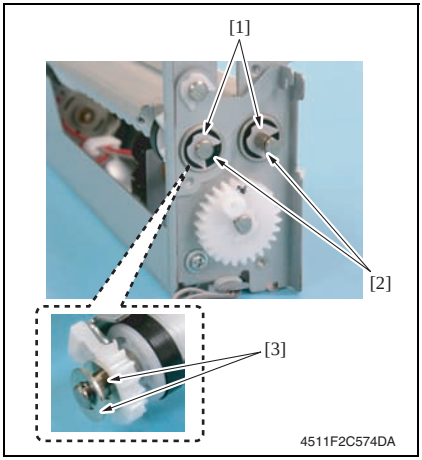
NOTE

- **Use care not to lose the pin.**



NOTE

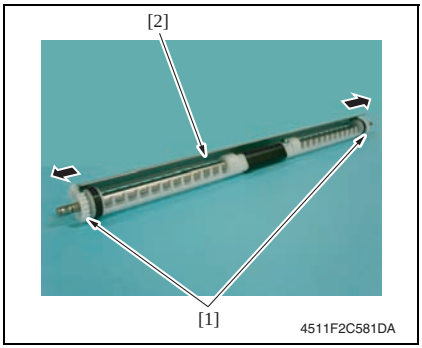
- **Install the gear so that the mark [1] is aligned to the position shown in the left figure.**



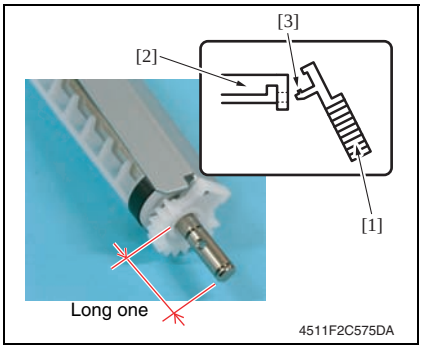
10. Remove two C-rings [1], two bearings [2] and two washers [3].

NOTE

- **Use care not to lose the washer.**

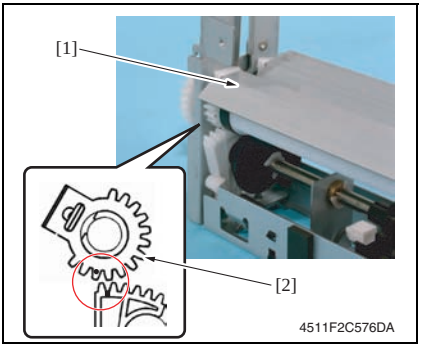


11. Remove two gears [1] of crease roller 1 assy, and remove the guide plate [2].



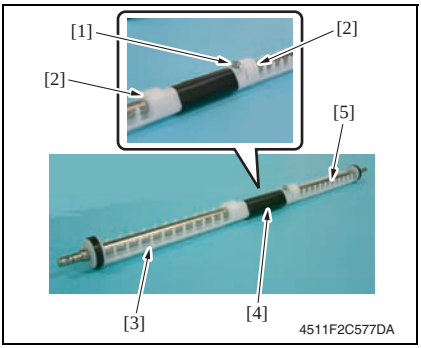
NOTE

- **When installing the gear [1] to the guide plate [2], insert the gear [1] at an angle and use care not to break the tabs [3].**
- **Install the guide plate as shown on the left.**

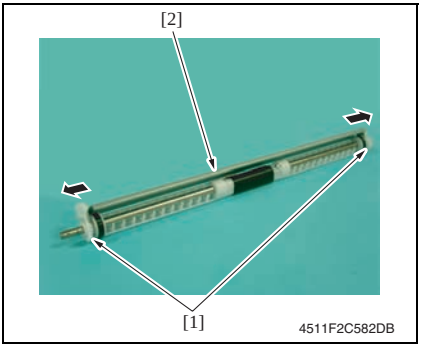


NOTE

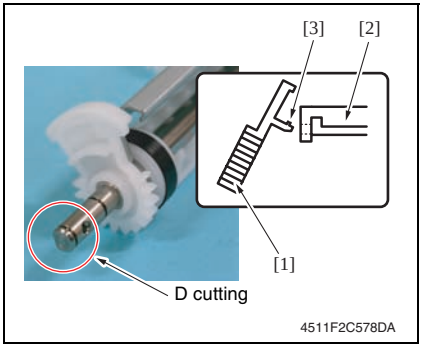
- **When mounting the crease roller 1 assy [1], mount it so that the tally mark on the gear [2] for the crease roller 1 and the tally mark on the gear below will be next to each other with the one on the gear [2] being outer side.**



12. Remove the screw [1].
13. Remove two C-rings [2] and remove the crease roller A [3], B [4] and C [5].

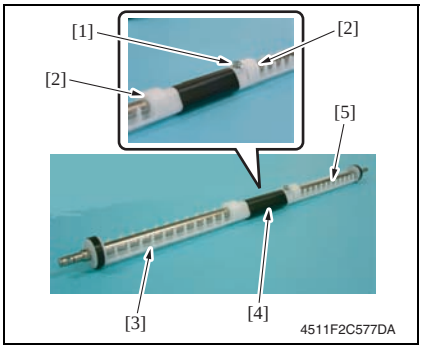


14. Remove two gears [1] of crease roller 2 assy, and remove the guide plate [2].

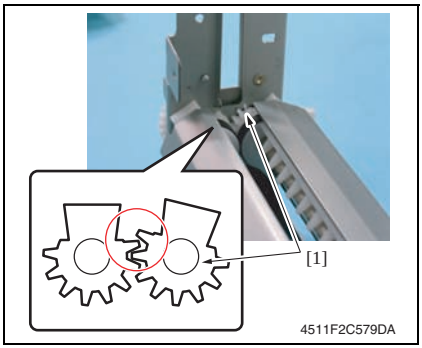


NOTE

- **When installing the gear [1] to the guide plate [2], insert the gear [1] at an angle and use care not to break the tabs [3].**
- **Install the gear and guide plate as shown on the left.**

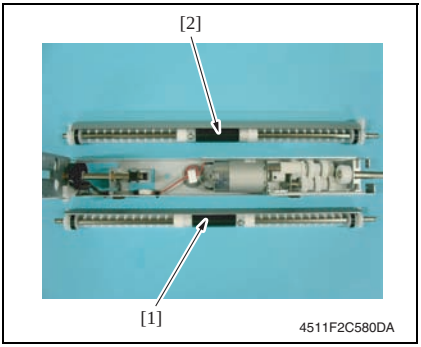


15. Remove the screw [1].
16. Remove two C-rings [2] and remove the crease roller A [3], B [4] and C [5].



NOTE

- **When mounting the crease roller assy 2, mount it so that the gear [1] for the crease roller 2 assy will be over the gear for the cease roller 1 by one tooth.**

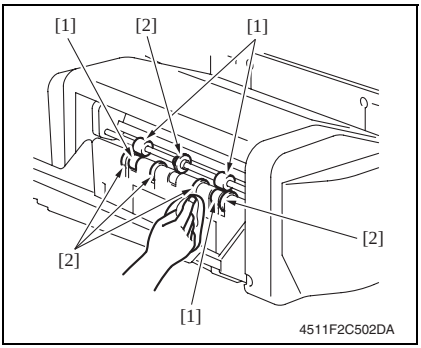


NOTE
- **Use care to mount the crease roller assy 1 [1] and 2 [2] in the proper directions.**

3.4 Cleaning procedure

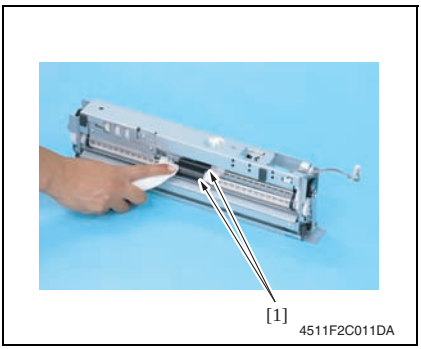
NOTE
- **The alcohol described in the cleaning procedure of maintenance represents the isopropyl alcohol.**

3.4.1 Cleaning of the rollers and rolls



1. Using a cleaning pad dampened with alcohol, wipe the roller [1] and roll [2].

2. Remove the crease unit.
See P.9



3. Using a cleaning pad dampened with alcohol, wipe the roller [1].

Adjustment/Setting

4. How to use the adjustment section

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

Advance checks

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

- The power supply voltage meets the specifications.
- The power supply is properly grounded.
- The machine shares the power supply with any other machine that draws large current intermittently (e.g., elevator and air conditioner that generate electric noise).
- The installation site is environmentally appropriate: high temperature, high humidity, direct sunlight, ventilation, etc.; levelness of the installation site.
- The defective image attributes to the data itself which is sent from the PC to the printer.
- The density is properly selected.
- 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

- **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.**

5. Finisher operations

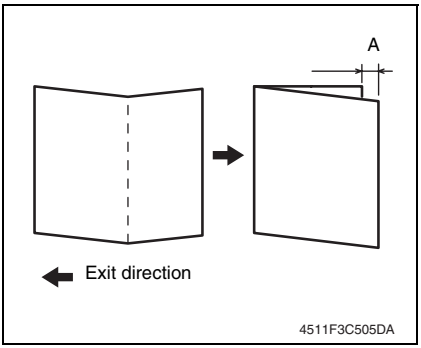
5.1 Half-Fold Pos.

NOTE

Make this adjustment after any of the following procedures has been performed.

- **When the crease unit has been replaced.**
- **When a deviation occurs in the crease.**
- **When fold angle adjustment has been made.**

1. Make a print in the crease mode. (A3 size)



2. Fold the print fed out along the crease.

3. Check the crease for deviation (Measure width A).
Specification: 0 ± 1.5 mm

4. When the width A does not fall within the specified value, conduct the following adjustment.

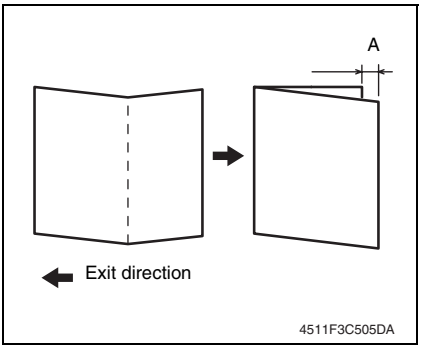
5. Display the Service Mode screen.
See P.202 of the main body service manual.

6. Select [Finisher Adjust] → [CB-FN Adjust] → [Half-Fold Pos.].

7. Press the Menu/Select key.

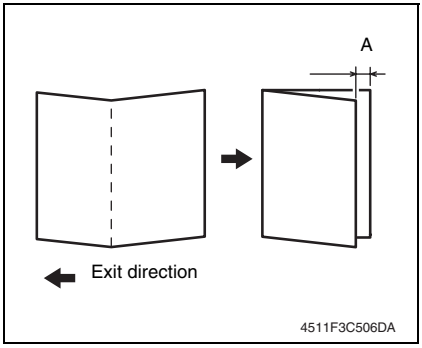
8. Select [A3] and press the Menu/Select key.

9. Select [Plain paper] and press the Menu/Select key.



- If the fold is offset as shown on the left.

10. Press ▼ key and set the appropriate numeric value.
Adjustment range: 0 to -10
(1 increment 0.5 mm)



- If the fold is offset as shown on the left.

11. Press ▲ key and set the appropriate numeric value.
Adjustment range: 0 to +10
(1 increment 0.5 mm)

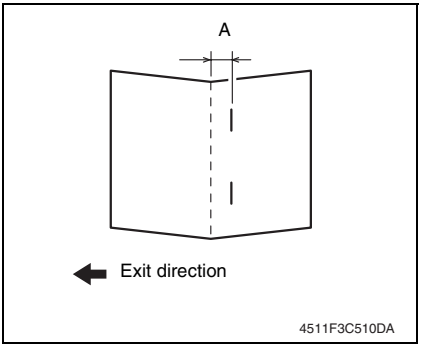
12. Press the Menu/Select key.
13. Make another print, and check the deviation.
14. Turn OFF the power switch, wait for 10 sec., then turn the switch ON.

5.2 Center Staple Pos

NOTE

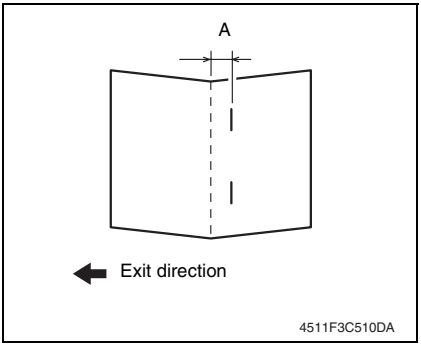
Make this adjustment after any of the following procedures has been performed.

- **When staple unit has been replaced.**
- **When center staple position is misaligned.**
- **When center staple angle adjustment has been made.**



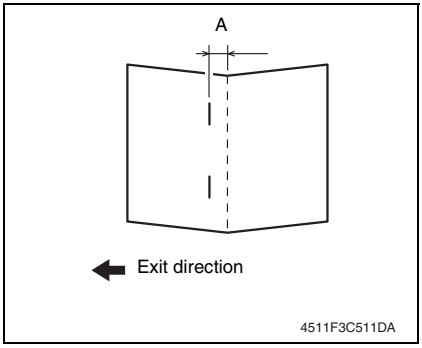
1. Select the center staple mode and make a print. (A3 Size)
2. Check the staple position for deviation from the crease (Measure width A).
   Specification: 0 ± 1.5 mm
3. When the width A does not fall within the specified value, conduct the following adjustment.

4. Display the Service Mode screen.
   See P.202 of the main body service manual.
5. Select [Finisher Adjust] → [CB-FN Adjust] → [Center Staple Pos].
6. Press the Menu/Select key.
7. Select [A3] and press the Menu/Select key.
8. Select [Plain Paper] and press the Menu/Select key.



- If the fold is offset as shown on the left.

9. Press ▼ key and set the appropriate numeric value.
   Adjustment range: 0 to -10
   (1 increment 0.5 mm)



- If the fold is offset as shown on the left.

10. Press ▲ key and set the appropriate numeric value.
Adjustment range: 0 to +10
(1 increment 0.5 mm)

11. Press the Menu/Select key.
12. Make another print, and check the deviation.
13. Turn OFF the power switch, wait for 10 sec., then turn the switch ON.

6. Mechanical adjustment

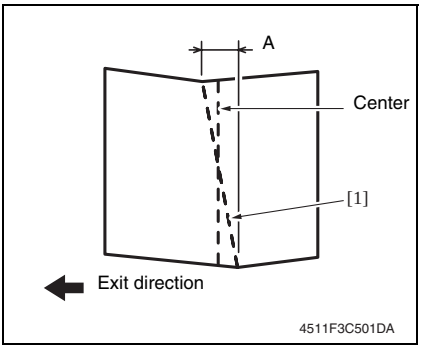
6.1 Fold Angle Adjustment

NOTE

Make this adjustment after any of the following procedures has been performed.

- **When the crease unit has been replaced.**
- **When a slant occurs in the crease.**

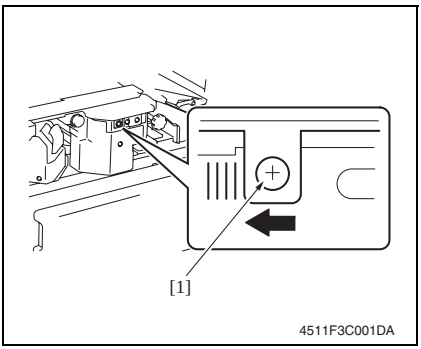
1. Make a print in the crease mode. (A3 size)



2. Fold the output paper along the crease [1].

3. Fold the output paper and half and measure the width A of the paper.
Specification: 0 ± 1.5 mm

4. If the fold position is slanted as shown on the left, make the following adjustment.



5. Open the front door, loosen the adjustment screw [1], and move the crease unit to the left to make the adjustment.
Graduated in 1-mm divisions

- If the fold position is slanted opposite to the figure of step 4, move the crease unit to the right to make the adjustment.

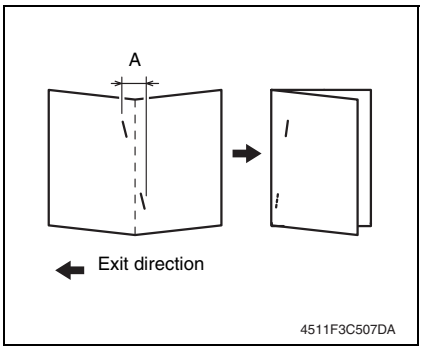
6. Make another print and check the fold position.

6.2 Center Staple Angle Adjustment

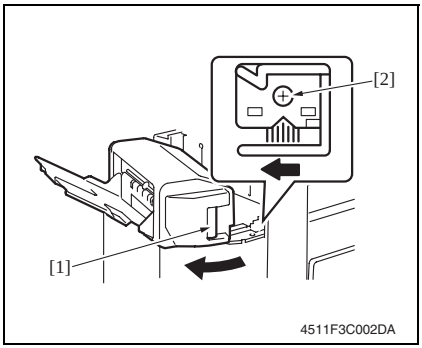
NOTE

Make this adjustment after any of the following procedures has been performed.

- **When staple unit has been replaced.**
- **When a slant occurs in the position of the center staple.**



1. Select the center staple mode and make a print. (A3 Size)
2. Check the staple position for deviation from the crease (Measure width A).
   Specification: 0 ± 1.5 mm
3. If the staple position is slanted as shown on the left, make the following adjustment.



4. Release the lock release lever [1] of the saddle unit.
5. Loosen the adjustment screw [2] and move the lock lever to the left to make the adjustment.

- If the staple position is slanted opposite to the figure of step 2, move the lock lever to the right to make the adjustment.

6. Make another print and check the staple position.

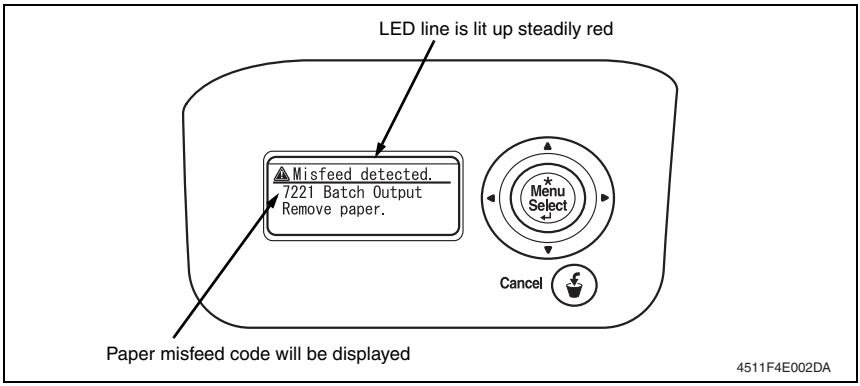
Blank Page

Troubleshooting

7. Jam display

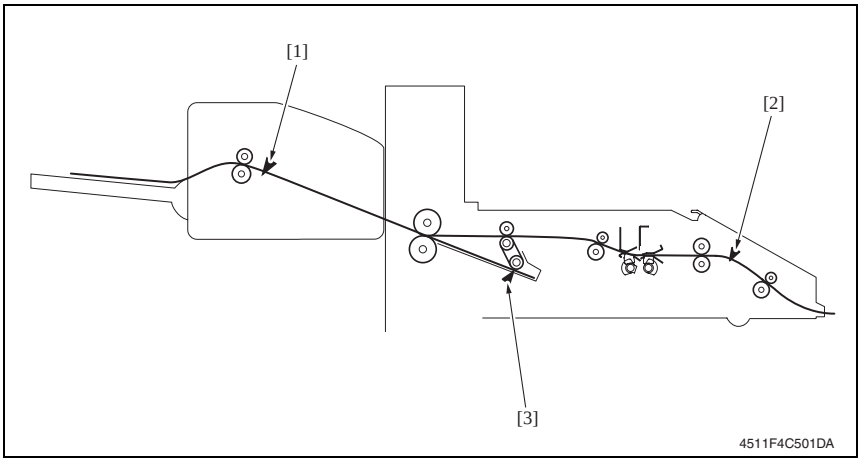
7.1 Misfeed display

- When a paper misfeed occurs, the LED line lights up red steadily and the misfeed message is displayed on the control panel of the machine.



Code	Misfeed location	Misfeed processing location	Action
7221	Paper bundle exit misfeed	Front door	P.35
7285	Staple unit 1 misfeed	Saddle cover	P.36
7284	Staple unit 2 misfeed	Saddle cover	
7225	Creasing section misfeed	Front door	P.37

7.2 Sensor layout



[1]	Saddle exit sensor	PS20
[2]	Entrance sensor	PS1
[3]	Storage tray detect sensor	PS3

7.3 Solution

7.3.1 Initial check items

- When a paper misfeed occurs, first perform the following initial check items.

Check Item	Action
Does the paper meet product specifications?	Change the paper.
Is paper curled, wavy, or damp?	See “Solution when paper curl occurs” on P.34.
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 rolls/rollers dirty, deformed, or worn?	Clean or change 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 found operational when checked for correct operation?	Correct or change the defective actuator.

7.3.2 Solution when paper curl occurs

Step	Check items/actions		
1	Turn over the stacked paper in the paper tray.	OK	—
		NG	Go to step 2.
2	Does paper curl occur just after a warm-up has been completed or the sleep mode has been turned OFF?	YES	Go to step 3.
	Does paper curl occur under normal conditions (under conditions other than those mentioned above)?	YES	Go to step 5.
3	*1.* Call the Service Mode to the screen. *2.* Select [System Settings] → [Change WarmupTime]. *3.* Change the setting to [Mode 3]. See P.217 of the main body service manual.	OK	—
		NG	Go to step 4.
4	*1.* Call the Service Mode to the screen. *2.* Select [System Settings] → [Change WarmupTime]. *3.* Change the setting to [Mode 4]. See P.217 of the main body service manual.	—	—
5	*1.* Call the Service Mode to the screen. *2.* Select [MachineAdjustment] → [FusingTemperature]. *3.* Select a paper type. *4.* Change the temperature of Heater Roller to [-10 °C]. See P.225 of the main body service manual.	OK	—
		NG	Go to step 6
6	*1.* Call the Service Mode to the screen. *2.* Select [MachineAdjustment] → [FusingTemperature]. *3.* Select a paper type. *4.* Change the temperature of Heater Roller to [-20 °C]. See P.225 of the main body service manual.	—	—

7.3.3 Paper bundle exit misfeed

A. Detection timing

Type	Description
Paper bundle misfeed detection	The storage tray detecting sensor (PS3) is not turned OFF even after the set period of time has elapsed after the exit motor (M4) is energized.
	The saddle exit sensor (PS20) is not turned ON even after the set period of time has elapsed after the exit motor (M4) is energized.
	The saddle exit sensor (PS20) is not turned OFF even after the set period of time has elapsed after the saddle exit sensor (PS20) is turned ON.

B. Action

Relevant electrical parts	
Storage tray detect sensor (PS3) Saddle exit sensor (PS20) Exit motor (M4) Saddle exit motor (M8)	SD control board (SDCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Initial check items	—	—
2	PS3 I/O check	FSCB PJ14FSCB-8 (ON)	FS-519 C-12
3	PS20 I/O check	SDCB PJ9SDCB-8 (ON)	SD-505 B-2
4	M4 operation check	FSCB PJ10FSCB-5 to 8	FS-519 C-3
5	M8 operation check	SDCB PJ4SDCB-1 to 2	SD-505 G-6
6	Change SDCB	—	—

7.3.4 Staple unit 1 misfeed/Staple unit 2 misfeed

A. Detection timing

Type	Description
Staple unit misfeed detection	The staple home position sensor in the staple unit is not turned ON even after the set period of time has elapsed after the staple motor rotates forward, and then the staple motor rotates backward, and the staple home position sensor in the staple unit is turned ON within the set period of time.

B. Action

Relevant electrical parts	
Staple unit 1 Staple unit 2	SD control board (SDCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Initial check items	—	—
2	Drive coupling section check	—	—
3	I/O check	—	—
4	Change staple unit 1	—	—
5	Change staple unit 2	—	—
6	Change SDCB	—	—

7.3.5 Creasing section misfeed

A. Detection timing

Type	Description
Creasing section misfeed detection	The entrance sensor (PS1) is not turned ON even after the set period of time has elapsed after the entrance motor (M1) is energized (beginning of backward rotation operation).
	The entrance sensor (PS1) is not turned OFF even after the set period of time has elapsed after the entrance motor (M1) is energized (beginning of forward rotation operation).

B. Action

Relevant electrical parts	
Entrance sensor (PS1) Entrance motor (M1)	SD control board (SDCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Initial check items	—	—
2	PS1 I/O check	FSCB PJ19FSCB-11 (ON)	FS-519 C-7
3	M1 operation check	FSCB PJ9FSCB-1 to 4	FS-519 C-6 to 7
4	Change SDCB	—	—

8. Malfunction code

8.1 Trouble code

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

Code	Item	Description
C11A2	Saddle exit roller pressure/retraction failure	• The saddle exit roller home position sensor (PS18) is not turned ON even after the set period of time has elapsed after the saddle exit open/close motor (M9) is energized (beginning of pressure operation). • The saddle exit roller home position sensor (PS18) is not turned OFF even after the set period of time has elapsed after the saddle exit open/close motor (M9) is energized (beginning of retraction operation).
C11A4	Saddle exit motor failure	The lock signal is detected after the set period of time has elapsed after the saddle exit motor (M8) is energized.
C11A5	Saddle in & out guide motor failure	• The in & out guide home sensor (PS23) is not turned OFF even after the set period of time has elapsed after the in & out guide motor (M13) is energized (beginning of advancing operation). • The in & out guide home sensor (PS23) is not turned ON even after the set period of time has elapsed after the in & out guide motor (M13) is energized (beginning of retracting operation).
C11A6	Saddle layable guide drive failure	• The layable guide home sensor (PS24) is not turned ON even after the set period of time has elapsed after the layable guide motor (M14) is energized (beginning of return operation to predetermined position). • The layable guide home sensor (PS24) is not turned OFF even after the set period of time has elapsed after the layable guide motor (M14) is energized (beginning of return operation to predetermined position).
C11B5	Side staple 1 drive failure	Home position sensor 1 is not turned OFF even after the set period of time has elapsed after saddle staple motor 1 is energized (beginning of staple operation).
C11B6	Side staple 2 drive failure	Home position sensor 2 is not turned OFF even after the set period of time has elapsed after saddle staple motor 2 is energized (beginning of staple operation).
C11D0	Crease motor drive failure	• The crease roller home position sensor (PS22) is not turned OFF even after the set period of time has elapsed after the crease motor (M10) is energized (beginning of backward rotation operation). • The crease roller home position sensor (PS22) is not turned ON even after the set period of time has elapsed after the crease motor (M10) is energized (beginning of forward rotation operation).

8.2 Solution

8.2.1 C11A2: Saddle exit roller pressure/retraction failure

Relevant electrical parts	
Saddle exit open/close motor (M9) Saddle exit roller home position sensor (PS18)	SD control board (SDCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the M9 connector for proper connection and correct as necessary.	—	—
2	Check M9 for proper drive coupling and correct as necessary.	—	—
3	M9 operation check	SDCB PJ4SDCB-6 to 7	SD-505 G-5 to 6
4	PS18 I/O check	SDCB PJ9SDCB-6 (ON)	SD-505 B-2
5	Change SDCB	—	—

8.2.2 C11A4: Saddle exit motor failure

Relevant electrical parts	
Saddle exit motor (M8)	SD control board (SDCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the M8 connector for proper connection and correct as necessary.	—	—
2	Check M8 for proper drive coupling and correct as necessary.	—	—
3	M8 operation check	SDCB PJ4SDCB-1 to 2	SD-505 G-6
4	Change SDCB	—	—

8.2.3 C11A5: Saddle in & out guide motor failure

Relevant electrical parts	
In & out guide motor (M13) In & out guide home sensor (PS23)	SD control board (SDCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the M13 connector for proper connection and correct as necessary.	—	—
2	Check M13 for proper drive coupling and correct as necessary.	—	—
3	M13 operation check	SDCB PJ4SDCB-4 to 5	SD-505 G-6
4	PS23 I/O check	SDCB PJ10SDCB-3 (ON)	SD-505 B-2 to 3
5	Change SDCB	—	—

8.2.4 C11A6: Saddle layable guide drive failure

Relevant electrical parts	
Layable guide motor (M14) Layable guide home sensor (PS24)	SD control board (SDCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the M14 connector for proper connection and correct as necessary.	—	—
2	Check M14 for proper drive coupling and correct as necessary.	—	—
3	M14 operation check	SDCB PJ4SDCB-8 to 9	SD-505 G-5
4	PS24 I/O check	SDCB PJ10SDCB-6 (ON)	SD-505 B-3
5	Change SDCB	—	—

8.2.5 C11B5: Side staple 1 drive failure

8.2.6 C11B6: Side staple 2 drive failure

Relevant electrical parts	
Staple unit 1 Staple unit 2	SD control board (SDCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the staple units 1 and 2 connectors for proper connection and correct as necessary.	—	—
2	Check staple units 1 and 2 for proper drive coupling, and correct as necessary.	—	—
3	Staple units 1 and 2 operation check	—	—
4	Change staple units 1 and 2	—	—
5	Change SDCB	—	—

8.2.7 C11D0: Crease motor drive failure

Relevant electrical parts	
Crease motor (M10) Crease roller home position sensor (PS22)	SD control board (SDCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical component)
1	Check the M10 connector for proper connection and correct as necessary.	—	—
2	Check M10 for proper drive coupling and correct as necessary.	—	—
3	M10 operation check	SDCB PJ3SDCB-1 to 2	SD-505 C-7
4	PS22 I/O check	SDCB PJ2SDCB-3 (ON)	SD-505 C-7
5	Change SDCB	—	—

Blank Page

KONICA MINOLTA

SERVICE MANUAL

FIELD SERVICE

FS-609/PK-501

2007.11
KONICA MINOLTA BUSINESS TECHNOLOGIES, INC. Ver. 1.0

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
2007/11	1.0	—	Issue of the first edition

CONTENTS

FS-609/PK-501

General

1. Product specification 1
1.1 FS-609 1
1.2 PK-501 4

Maintenance

2. Other 5
2.1 Disassembly/adjustment prohibited items 5
2.2 Disassembly/Assembly list (Other parts) 6
2.3 Disassembly/Assembly procedure 7
2.3.1 Exit tray 7
2.3.2 Front cover 7
2.3.3 Rear cover 8
2.3.4 Upper door 8
2.3.5 Finisher tray upper cover 9
2.3.6 Upper cover 10
2.3.7 Horizontal transport unit 10
2.3.8 Side guide 11
2.3.9 Middle transport unit 12
2.3.10 Stapler 14
2.3.11 Saddle section 14
2.3.12 Finisher tray 16
2.3.13 Paddle section 17
2.3.14 Exit roller (upper) 18
2.3.15 Paddle 20
2.3.16 Exit roller (lower) and paper exit belt 21
2.3.17 Stapler/folding drive unit 24
2.3.18 Transport roller 26
2.3.19 Middle transport roller 28
2.3.20 Punch unit 29
2.3.21 Finisher control board (FSCB) 31
2.3.22 Punch control board (PKCB) 31
2.3.23 Transport motor unit 31
2.3.24 Entrance motor 32

2.3.25 Punch motor 32
2.3.26 Side registration motor 32

Adjustment/Setting

3. How to use the adjustment section 33
4. Finisher Adjust 34
4.1 FN-X3 Adjust 34
4.1.1 Center Staple Pos (Center-Staple Position Adj.) 34
4.1.2 Half-Fold Pos. (Half-Fold Position Adj.) 35
4.2 Punch Option 36
4.2.1 Punch Kit type 36
4.2.2 # of Punch-Holes 36
5. Mechanical adjustment 37
5.1 Adjustment of height and inclination 37
5.2 Adjustment of the folding position 39
5.2.1 Adjustment procedure 39
5.3 Stapler phase adjustment 43
5.3.1 Adjustment procedure 43
5.4 Saddle gear phase adjustment 47
5.4.1 Adjustment procedure 47
6. Board switch 48
6.1 FSCB (Finisher control board) 48
6.1.1 Adjustment of the folding positions 49
6.1.2 Adjustment of the center stapling position 50
6.1.3 Adjustment of the alignment plate position 51
6.2 PKCB (Punch control board) 53
6.2.1 Adjustment of the sensor output 53
6.2.2 Registration of the number of punch holes 54
6.2.3 Procedure after replacing the EEP-ROM (IC1002) 55
6.2.4 Punch center position adjustment 55

Troubleshooting

7. Jam display 59
7.1 Misfeed display 59
7.1.1 Misfeed display resetting procedure 59
7.2 Sensor layout 60
7.3 Solution 61
7.3.1 Initial check items 61
7.3.2 Solution when paper curl occurs 61

7.3.3 Transport section misfeed 62
7.3.4 Horizontal transport section misfeed 62
7.3.5 Folding position section misfeed 63
7.3.6 Stapler section misfeed 63
7.3.7 Paper stack exit section misfeed 64
8. Trouble code 65
8.1 Trouble code display 65
8.2 Trouble code list 65
8.3 Solution 68
8.3.1 C1180: Transport system drive malfunctions 68
8.3.2 C1181: Paddle motor malfunctions 68
8.3.3 C1183: Elevate mechanism malfunctions 69
8.3.4 C1192: Front aligning plate motor malfunctions 69
8.3.5 C1193: Rear aligning plate motor malfunctions 70
8.3.6 C11A4: Booklet exit motor malfunctions 70
8.3.7 C11B1: Stapler unit slide motor malfunctions 71
8.3.8 C11B4: Stapler/folding motor malfunctions 71
8.3.9 C11C1: Punch control board malfunctions 73
8.3.10 C11C2: Punch side registration motor malfunctions 74
8.3.11 C11C3: Punch motor malfunctions 74
8.3.12 C11C5: Punch sensor malfunctions 75
8.3.13 C1401: Backup RAM malfunction 76

Blank Page

General

1. Product specification

1.1 FS-609

A. Type

Type	Multi staple finisher with saddle (Booklet)
Installation	Freestanding
Document alignment	Center
Supplies	Staple cartridge

B. Functions

Modes	Normal	Group, Sort, Group Offset, Sort Offset, Sort Staple, Center Staple & Fold
	Punch (Option)	Group Punch, Sort Punch, Group Offset Punch, Sort Offset Punch, Sort Staple Punch

C. Paper type

- Remove the finisher off the copier for feeding the long paper.
- The maximum loading capacity shown is for when loading the single type of paper (80g/ m^2)

(1) Group, Sort

Type	Size	Weight	Tray capacity *1			Exit tray	No. of sheets to be stapled
Plain paper	B5S/B5 to A3 wide 5-1/2 × 8-1/2S/ 5-1/2 × 8-1/2 to 12-1/4 × 18	60 to 90 g/m² 16 to 24 lb	No. of Sheet Height	A4S/ 8-1/2 × 11S or smaller 1,000 150 mm	B4/ 8-1/2 × 14 or larger 500 75 mm	Exit tray1	-
Envelop OHP film Label Thick paper		60 to 271 g/m² 16 to 72 lb	20 sheets				

*1: Controlled by whichever reached earlier

(2) Sort offset, Sort group

Type	Size	Weight	Tray capacity			Exit tray	No. of sheets to be stapled
Plain paper	A5, B5S/B5 to A3 8-1/2 × 11S/ 8-1/2 × 11 to 11 × 17	60 to 90 g/m² 16 to 24 lb	No. of Sheets Height	A4S/ 8-1/2 × 11S or smaller 1,000 150 mm	B4/ 8-1/2 × 14 or larger 500 75 mm	Exit tray1	-
			Controlled by whichever reached earlier				

(3) Sort staple

Type	Size	Weight	Tray capacity			Exit tray	No. of sheets to be stapled	
Plain paper Thick paper	B5S/B5 to A3 8-1/2 × 11S/ 8-1/2 × 11 to 11 × 17	Normal Mode 60 to 90 g/m² 16 to 24 lb Cover Mode 60 to 209 g/m² 16 to 55.5 lb		A4S/ 8-1/2 × 11S or smaller	B4/ 8-1/2 × 14 or larger	Exit tray1	Normal mode *1	
			No. of Sheets	1,000	500		A4S/ 8-1/2 × 11S or smaller	B4/ 8-1/2 × 14 or larger
			Height	150 mm	75 mm		2 to 50	2 to 25
			No. of Sets	30	30			
			Controlled by whichever reached earlier					

*1: The number of sheets to be stapled is limited for high-density images.
(Color Wise: 20 sheets x 20 sets)

(4) Center staple & fold

Type	Size	Weight	Tray capacity	Exit tray	No. of sheets to be stapled
Plain paper	A4S, B4, A3 8-1/2 × 11S/ 11 × 17	60 to 90 g/m² 16 to 24 lb	10 sets (No. of Sheets to be Stapled: 6 to 15 sheets) 20 sets (No. of Sheets to be Stapled: 2 to 5 sheets)	Exit tray2	Black copy 2 to 15 sheets (Max. 60 pages) Other copy 2 to 10 sheets (Max. 40 pages)

D. Stapling

Staple filling mode	Dedicated staple cartridge mode (5,000 staples)	
Staple detection	Available (Near empty: 40 remaining staples)	
Stapling position	Rear: Parallel 1 point	B5S/B5 to A3, 8-1/2 × 11S/8-1/2 × 11 to 11 × 17
	Front: Parallel 1 point	
	Side: Parallel 2 points	
	Center: Parallel 2 points	
Manual staple	None	
Folding mode	Roller pressure folding	
Folding position	Center of paper	

E. No. of sheets to be stapled (sort staple)

(1) A4S, 8-1/2 × 11S or smaller

No. of sheets to be stapled	No. of sets		
	Rear: Parallel	Center: Parallel	Front: Parallel
2	100	40	40
3 to 5	80	40	40
6 to 10	60	40	40
11 to 20	30	30	30
21 to 30	30	30	30
31 to 50	30 sets or 1,000 sheets		

(2) B4, 8-1/2 × 14 or larger

No. of sheets to be stapled	No. of sets		
	Rear: Parallel	Center: Parallel	Front: Parallel
2	100	50	50
3 to 5	80	40	40
6 to 10	40	40	40
11 to 20	30 sets or 1,000 sheets		
21 to 25			

F. Machine specifications

Power requirements	DC 24 V (supplied from the main body)
	DC 5 V (generated by finisher)
Max. power consumption	65 W or less
Dimensions	601 mm (W) × 603 mm (D) × 933 mm (H) 23.75 inch (W) × 23.75 inch (D) × 36.75 inch (H)
Weight	42.0 kg (92.5 lb)

G. Operating environment

Conforms to the operating environment of the main body.

NOTE

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

1.2 PK-501

A. Type

No. of holes (optional)	Metric: 4 holes, Inch: 2 holes / 3 holes

B. Paper

Type	Size		Weight	Tray capacity	Exit tray	No. of sheets to be stapled
Plain paper Thick paper	4 holes	A4, A3	60 to 209 g/m² 16 to 55.5 lb	-	Elevator tray	-
	2 holes	8-1/2 × 11S/8-1/2 × 11, 8-1/2 × 14, 11 × 17				
	3 holes	8-1/2 × 11, 11 × 17				

C. Machine specifications

Power requirements	Supplied from FS-609
Dimensions	90 mm (W) × 530 mm (D) × 170 mm (H) 3.75 inch (W) × 20.75 inch (D) × 6.75 inch (H)
Weight	2.6 kg (5.75 lb)

D. Operating environment

Conforms to the operating environment of the main body.

NOTE

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

Maintenance

2. Other

2.1 Disassembly/adjustment prohibited items

A. Paint-locked screws

NOTE

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

B. Red-painted screws

NOTE

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

C. Variable resistors on board

NOTE

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

D. Removal of PWBs

⚠ CAUTION

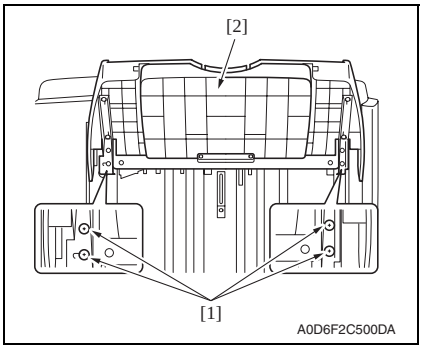
- **When removing a circuit board or other electrical component, refer to "Handling of PWBs" and follow the corresponding removal procedures.**
- **The removal procedures given in the following omit the removal of connectors and screws securing the circuit board support or circuit board.**
- **Where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

2.2 Disassembly/Assembly list (Other parts)

No	Section	Part name	Ref. page
1	Exterior parts	Exit tray	P.7
2		Front cover	P.7
3		Rear cover	P.8
4		Upper door	P.8
5		Finisher tray upper cover	P.9
6		Upper cover	P.10
7	Unit	Horizontal transport unit	P.10
8		Side guide	P.11
9		Middle transport unit	P.12
10		Stapler	P.14
11		Saddle section	P.14
12		Finisher tray	P.16
13		Paddle section	P.17
14		Exit roller (upper)	P.18
15		Paddle	P.20
16		Exit roller (lower) and paper exit belt	P.21
17		stapler/folding drive unit	P.24
18		Transport roller	P.26
19		Middle transport roller	P.28
20		Punch unit	P.29
21	Electrical parts	Finisher control board	P.31
22		Punch control board	P.31
23		Transport motor unit	P.31
24		Entrance motor	P.32
25		Punch motor	P.32
26		Side registration motor	P.32

2.3 Disassembly/Assembly procedure

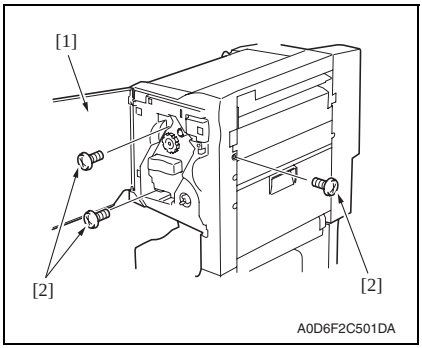
2.3.1 Exit tray



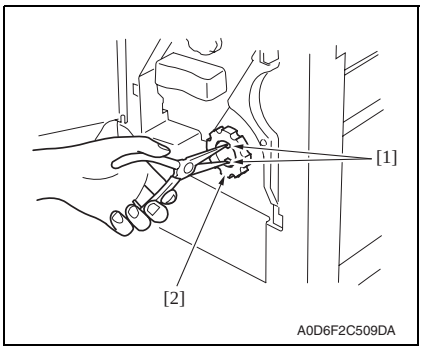
1. Remove four screws [1], and remove the exit tray [2].

2.3.2 Front cover

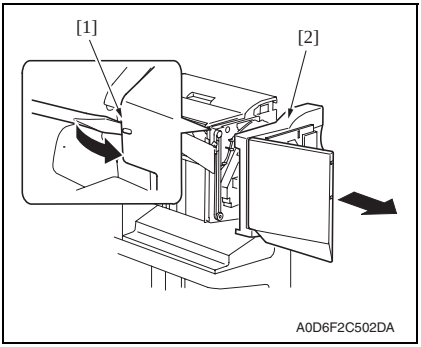
1. Remove the horizontal transport unit. See P.10
2. Remove the middle transport unit. See P.12



3. Open the front door [1].
4. Remove three screws [2].



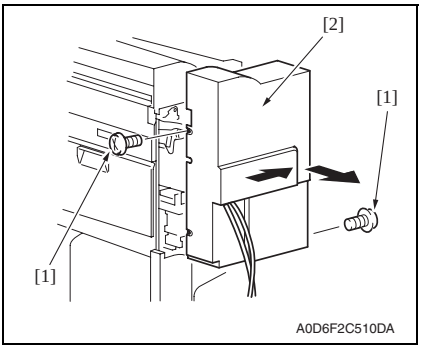
5. Using long nose pliers or a similar tool, pinch the tabs [1] and remove the misfeed-clearing dial [2].



6. Using a screwdriver or a similar tool, unhook the tab [1] and remove the front cover [2].

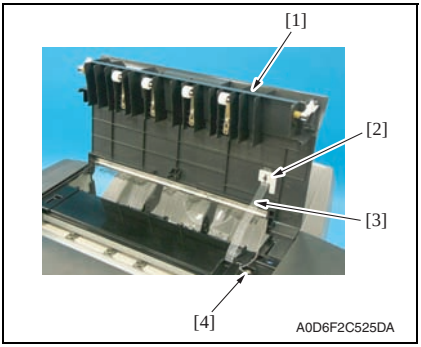
2.3.3 Rear cover

1. Remove the horizontal transport unit. See P.10
2. Remove the middle transport unit. See P.12

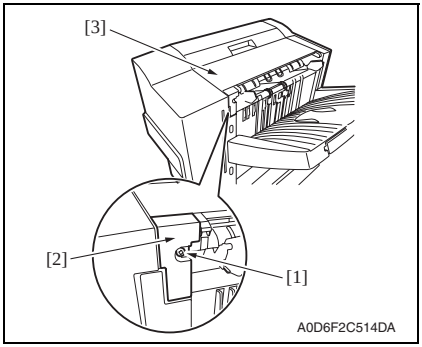


3. Remove two screws [1], and remove the rear cover [2].

2.3.4 Upper door



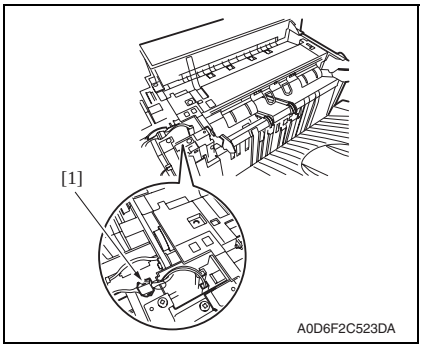
1. Open the upper door [1], and remove the door band holder [2] by turning it clockwise.
2. Remove the door band [3].
3. Remove the screw [4], and remove the grounding wire.



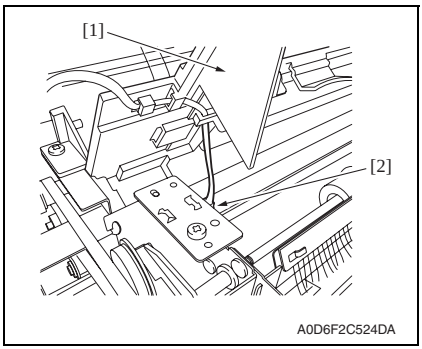
4. Remove the screw [1], remove the finisher tray rear cover [2].
5. Remove the upper door [3].

2.3.5 Finisher tray upper cover

1. Remove the front cover.
See P.7
2. Remove the rear cover.
See P.8
3. Remove the upper door.
See P.8



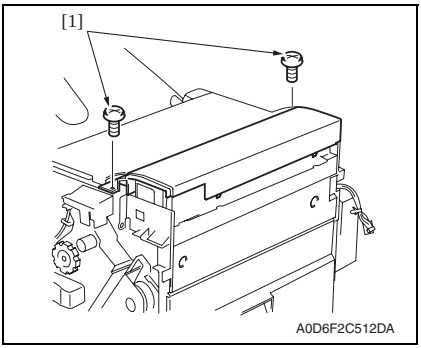
4. Disconnect the connector [1].



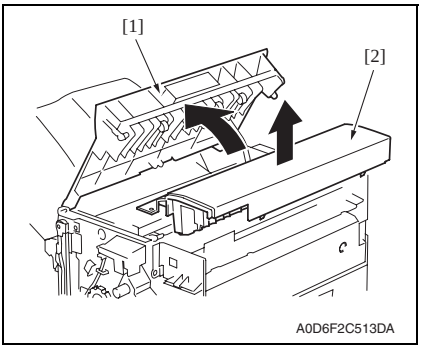
5. Disconnect the connector [2] while holding up the finisher tray upper cover [1], and remove the finisher tray upper cover [1].

2.3.6 Upper cover

1. Remove the front cover.
See P.7
2. Remove the rear cover.
See P.8



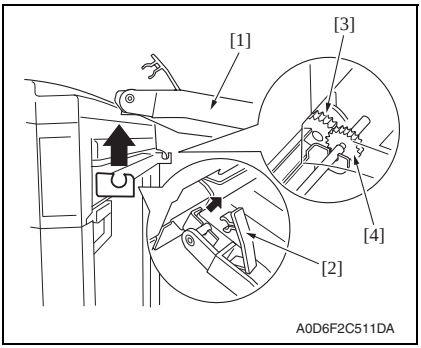
3. Remove two screws [1].



4. Open the upper door [1], and remove the upper cover [2].

2.3.7 Horizontal transport unit

1. Disconnect and move the finisher away from the main body.



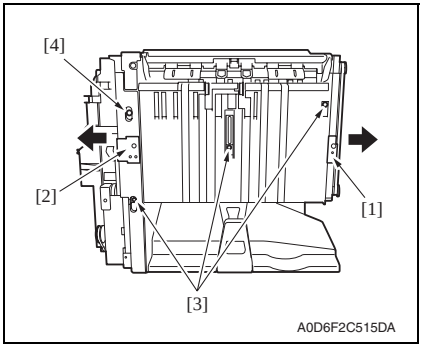
2. Raise the horizontal transport unit [1] straight upward and, keeping that condition, disengage the lock lever [2] and remove the horizontal transport unit [1].

NOTE

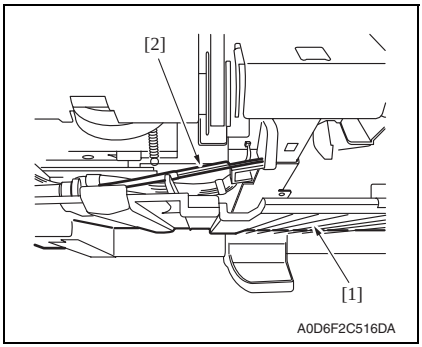
- **At reinstallation, be sure to engage the lock lever [2] in position.**
- **At reinstallation, make sure that the gear [3] of the finisher is in positive mesh with the gear [4] of the horizontal transport unit.**

2.3.8 Side guide

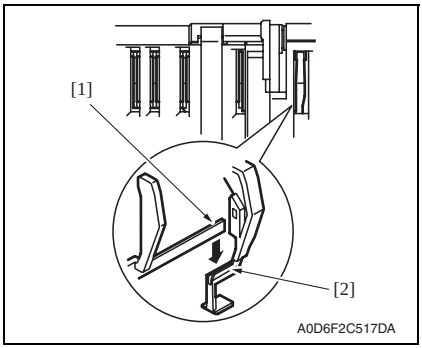
1. Remove the exit tray.
See P.7
2. Remove the front cover.
See P.7
3. Remove the rear cover.
See P.8



4. Derail the exit tray support plate (front) [1] and the exit tray support plate (rear) [2] to the outside off the respective rail grooves.
5. Remove three screws [3] and the shoulder screw [4].



6. Pull down the side guide [1] lightly, disengage the exit tray home position detecting lever (rear) [2], and then remove the side guide [1].

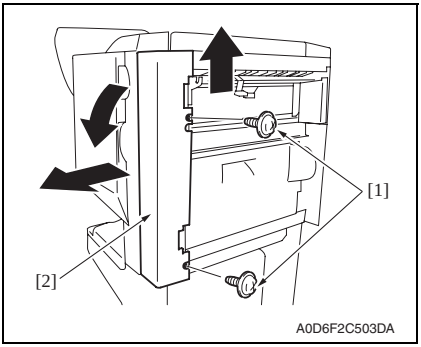


NOTE

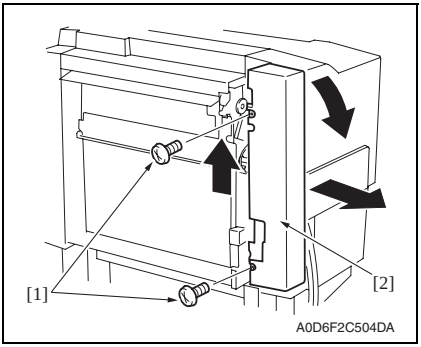
- **In reassembling, ensure of exact installation with the exit tray home position detecting lever (rear) [1] set in the slot of the exit tray home position detecting lever (center) [2].**
- **After reassembly, press each of these levers for several times to make sure of exact installation.**

2.3.9 Middle transport unit

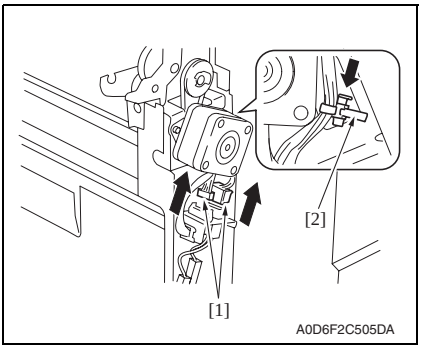
1. Remove the horizontal transport unit.
See P.10



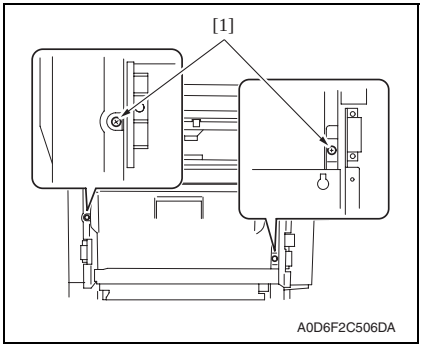
2. Remove two screws [1], and remove the middle front cover [2].



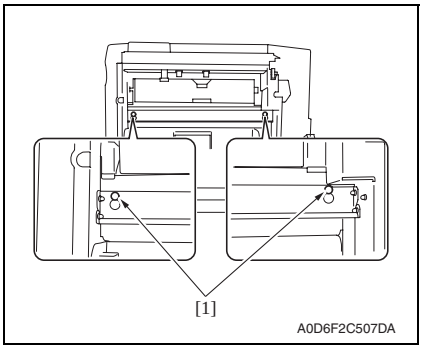
3. Remove two screws [1], and remove the middle rear cover [2].



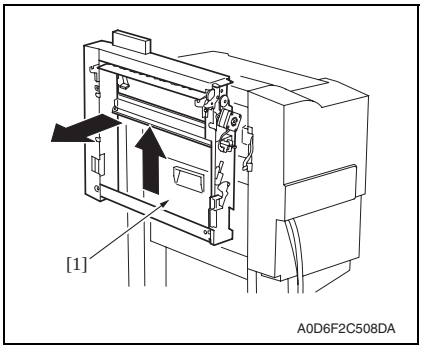
4. Disconnect two connectors [1].
5. Pinch the tie band [2], and remove it from the sheet metal.



6. Remove two screws [1].

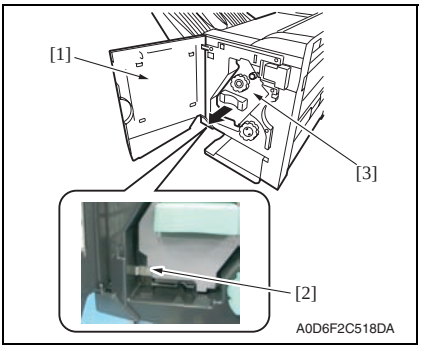


7. Loosen two screws [1].

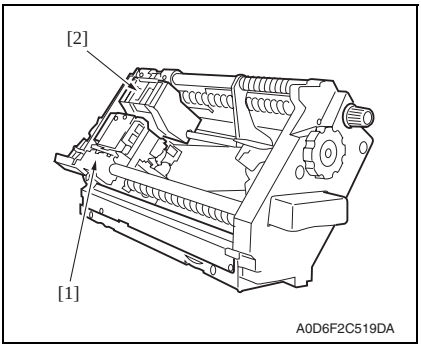


8. Remove the middle transport unit by sliding it upwards.

2.3.10 Stapler



1. Open the front door [1].
2. Pull out the stapler [3] while pressing the stop lever [2].

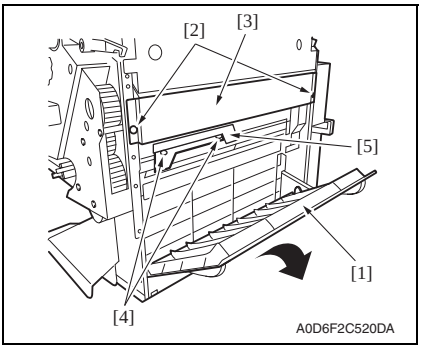


NOTE

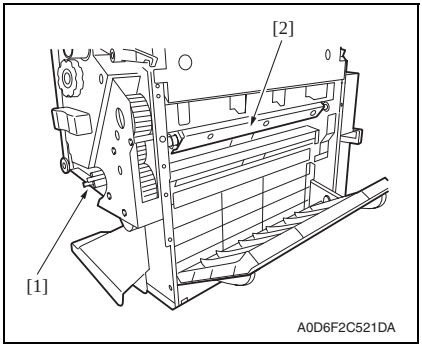
- **Do not remove the stapler from the shaft of the stapler frame, or displacement will be caused between the position to which the staple driver [1] (the lower unit of the stapler) feeds staples and the position from which the staple clincher [2] (the upper unit of the stapler) receives them.**

2.3.11 Saddle section

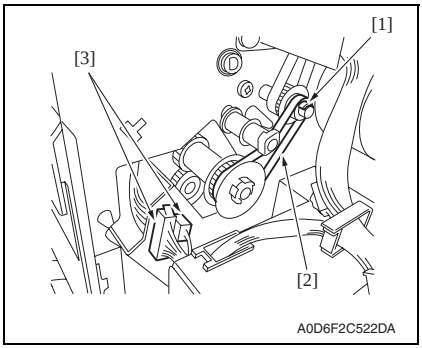
1. Remove the front cover.
See P.7
2. Remove the rear cover.
See P.8
3. Remove the punch dust box.



4. Open the jam access cover [1], remove two screws [2], and remove the right stay [3].
5. Remove two screws [4], and remove the lever [5].

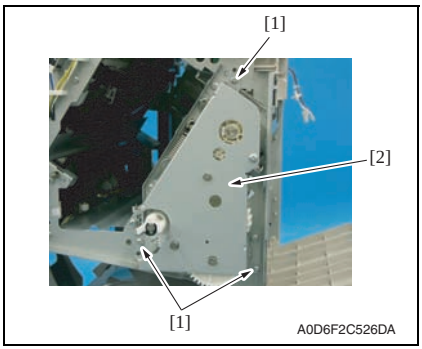


6. Turn the folding jam release dial [1] to move the paper pressure [2] inside.



7. Remove the C-clip [1], and remove the belt [2].
8. Disconnect two connectors [3].

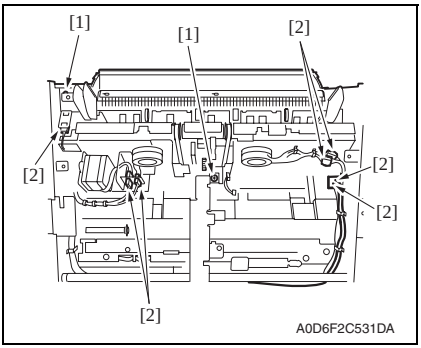
9. Remove the stapler.
See P.14



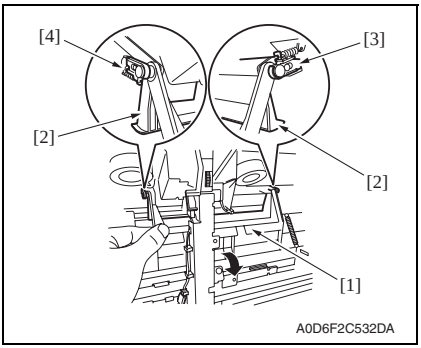
10. Remove three screws [1], and pull out and remove the saddle [2].

2.3.12 Finisher tray

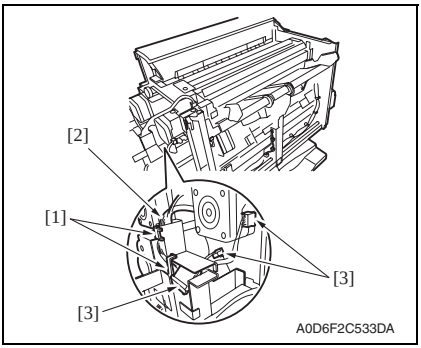
1. Remove the finisher tray upper cover.
See P.9
2. Remove the side guide.
See P.11



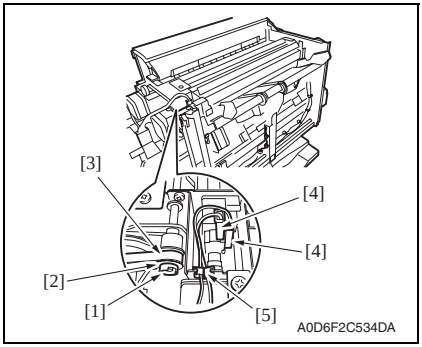
3. Remove two screws [1], and disconnect seven connectors [2].



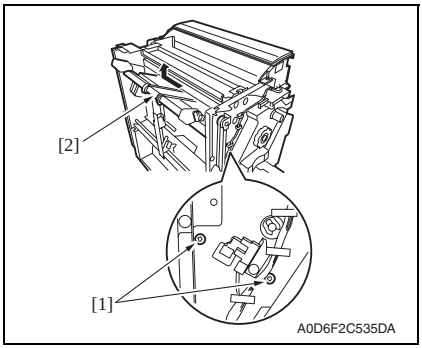
4. Pull out the finisher stopper base [1], and disengage the front claw [3] and the rear claw [4] of the finisher stopper [2].



5. Remove the motor harness [2] from two harness saddles [1].
6. Disconnect three connectors [3].



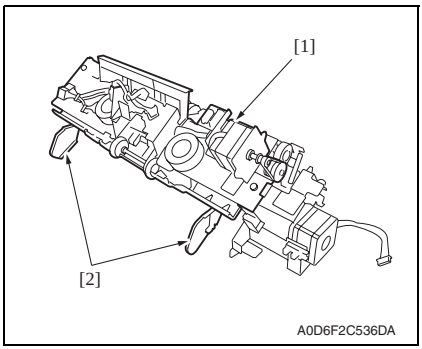
7. Remove the C-clip [1], and remove the spacer [2], and remove the belt [3] from the gear.
8. Disconnect the connector [4], and remove the harness from the wire saddle [5].



9. Remove two screws [1], and remove the finisher tray [2] by sliding it to the far side and lifting it.

2.3.13 Paddle section

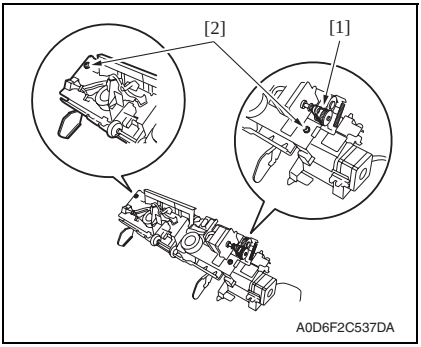
1. Remove the finisher tray.
See P.16



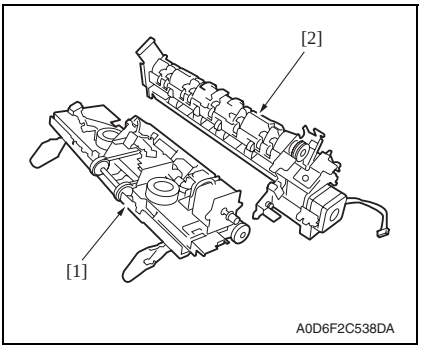
2. Place the finisher tray [1] as shown in the figure.

NOTE

- **Be careful not to damage the aligning plate [2].**



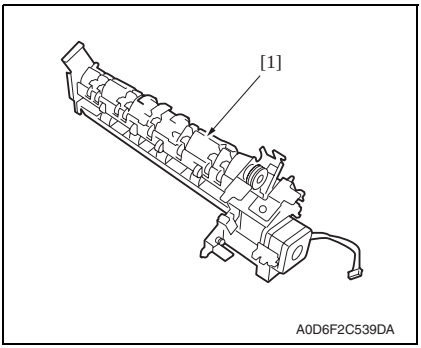
3. Remove the belt [1], and remove two screws [2].



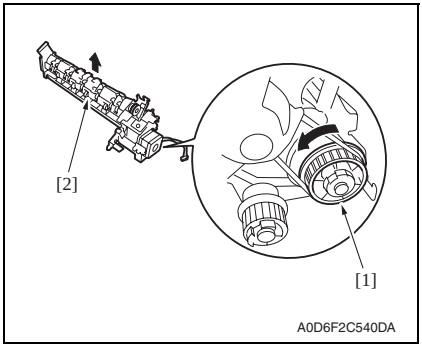
4. Separate the section into the tray section [1] and the paddle section [2].

2.3.14 Exit roller (upper)

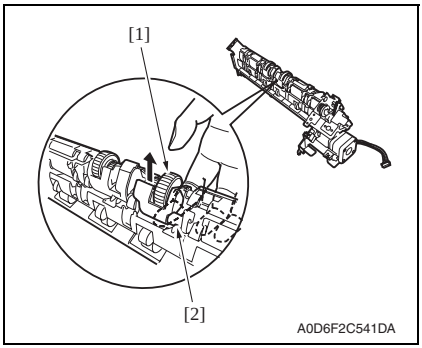
1. Remove the paddle section.
See P.17



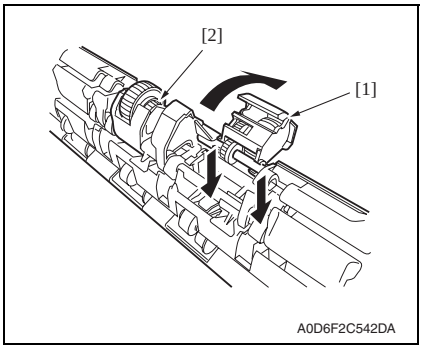
2. Place the paddle section [1] as shown in the figure.



3. Turn the gear [1] in the direction indicated by an arrow to move up the exit roller (upper) section [2].



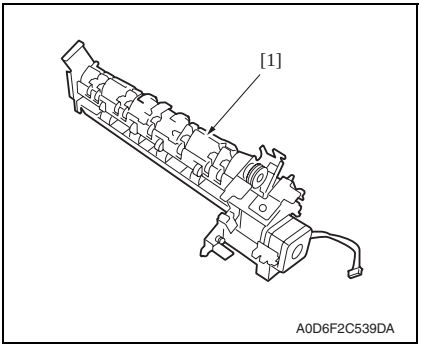
4. Push up the exit roller (upper) [1] from the bottom to release it from the shaft [2].



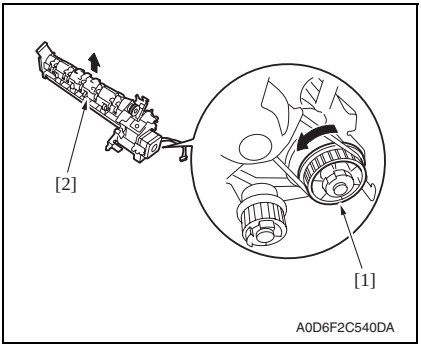
5. Turn up the exit roller (upper) [1], and then push it down to remove it.
6. Remove the front exit roller (upper) [2] as well in the same way.

2.3.15 Paddle

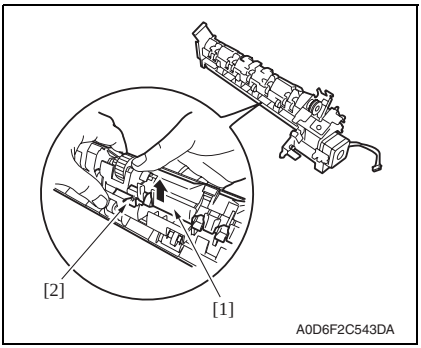
1. Remove the paddle section.
See P.17



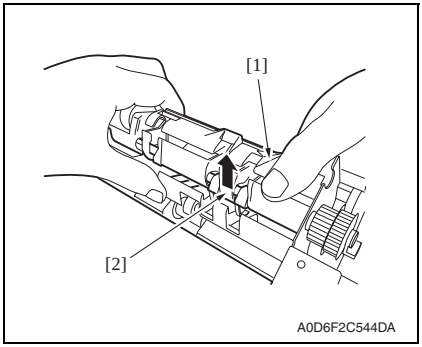
2. Place the paddle section [1] as shown in the figure.



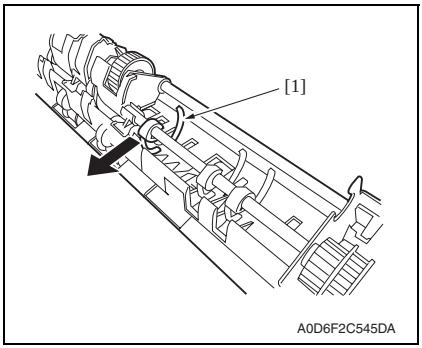
3. Turn the gear [1] in the direction indicted by an arrow to move up the exit roller (upper) section [2].



4. Push up the safety guide [1] from the bottom to release it on one side from the shaft [2].



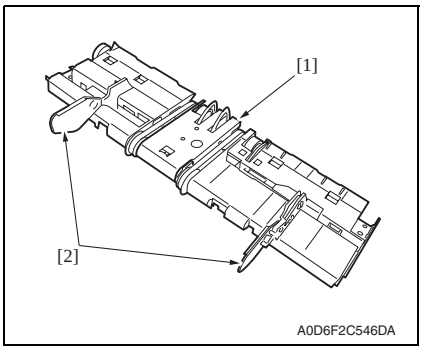
5. Push up the safety guide [1] from the bottom to release it from the shaft [2] and remove it.



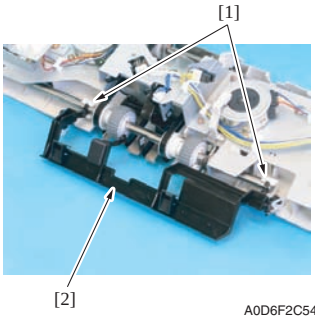
6. Remove the paddle [1].
7. Remove the other paddles as well in the same way.

2.3.16 Exit roller (lower) and paper exit belt

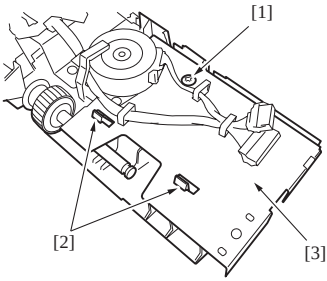
1. Remove the tray section.
See P.17



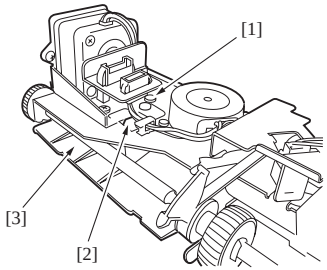
2. Slide the aligning plate (front) [2] and the aligning plate (rear) [3] outside to remove them from the tray [1].



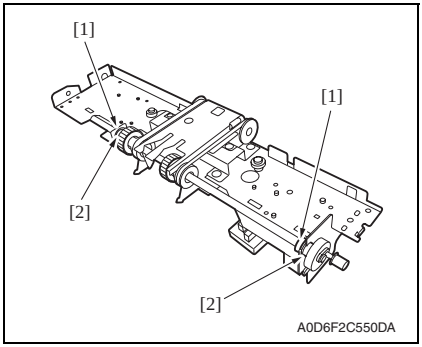
3. Remove two holders [1], and remove the finisher tray stopper [2].



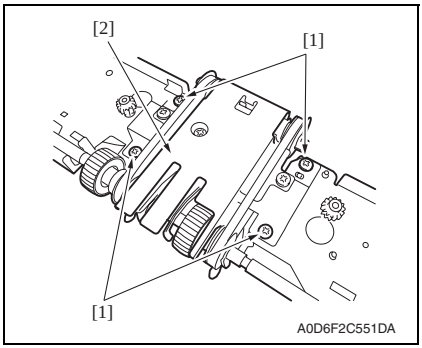
4. Remove the screw [1], and remove the paper guide (front) [3] while disengaging two claws [2].



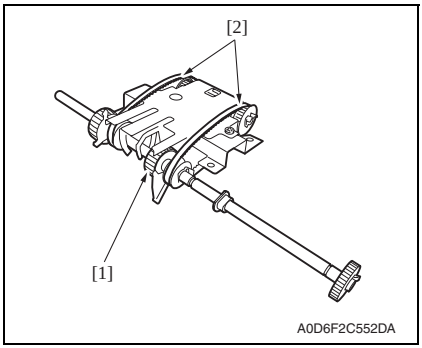
5. Remove the screw [1], and remove the paper guide (rear) [3] while disengaging the claw [2].



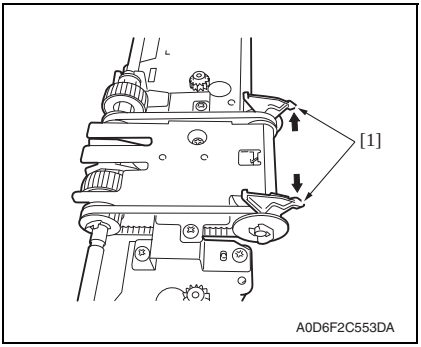
6. Remove two C-clips [1], and move two bushings [2] inside, respectively.



7. Remove four screws [1], and remove the exit roller (lower) section [2] by lifting it.



8. Remove the exit roller (lower) [1] and two paper exit belts [2].

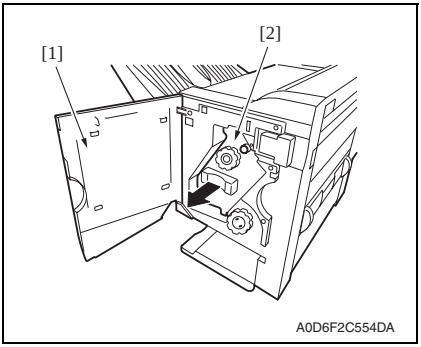


NOTE

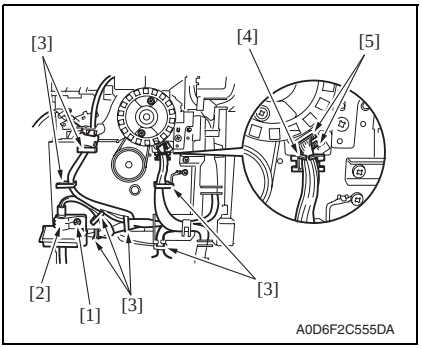
- **When installing, align the edge of claws of the paper exit belt [1].**

2.3.17 Stapler/folding drive unit

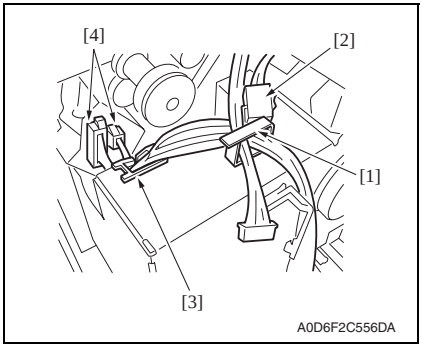
1. Remove the rear cover.
See P.8



2. Open the front door [1], and slightly pull out the stapler section [2].

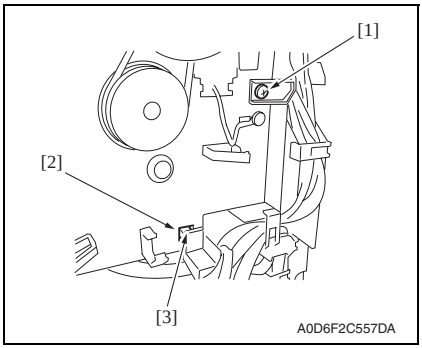


3. Remove screw [1], and remove the interface cable presser [2].
4. Remove the harness from seven wire saddles [3].
5. Remove the harness from the wire saddle [4], and disconnect two connectors [5].

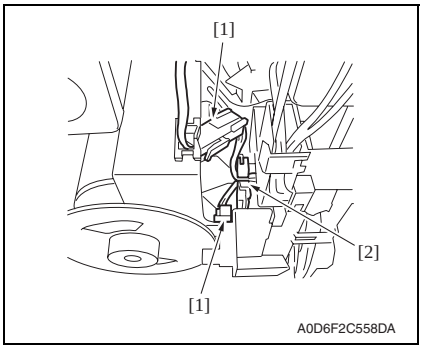


6. Remove the harness from the harness saddle [1], and disconnect the connector [2].

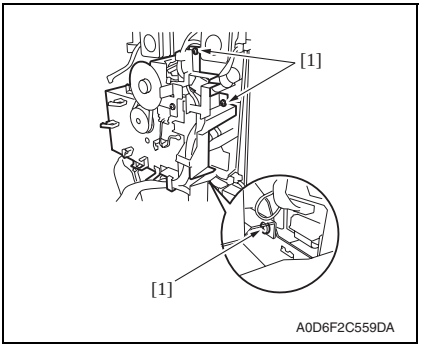
7. Remove the harness from the wire saddle [3], and disconnect two connectors [4].



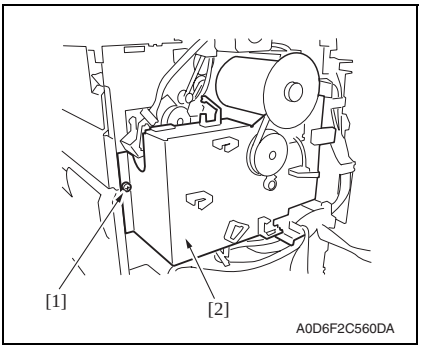
8. Remove the screw [1], and remove the claw [3] of harness guide from the square hole [2] in the base plate.



9. Disconnect two connectors [1], and remove the harness from the wire saddle [2].



10. Remove three screws [1].

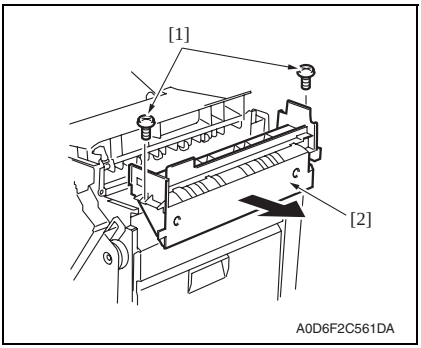


11. Remove the screw [1], and remove the stapler/folding drive unit [2].

2.3.18 Transport roller

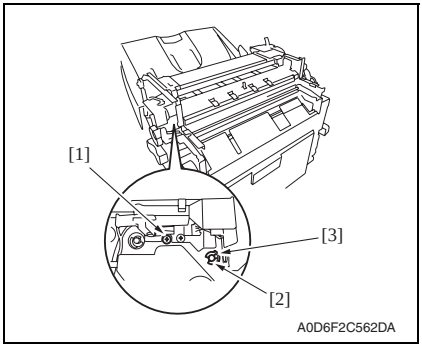
1. Remove the upper door.
See P.8

2. Remove the upper cover.
See P.10

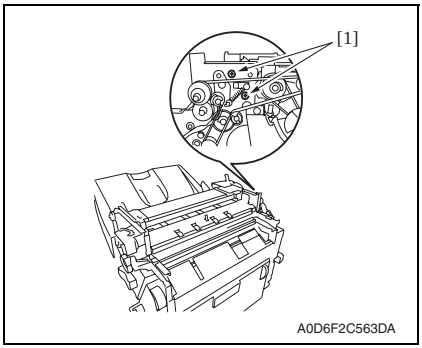


3. Remove two screws [1], and remove the upper cover unit [2].

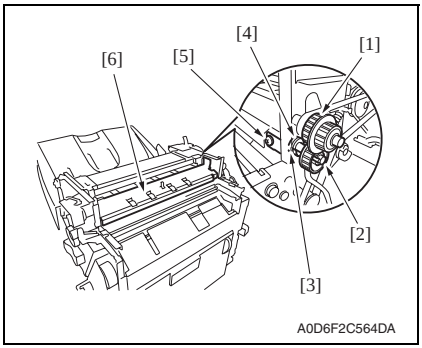
4. Remove the transport motor unit.
See P.31



5. Remove the screw [1].
6. Remove the C-clip [2], and remove the bushing [3].



7. Remove two screws [1].

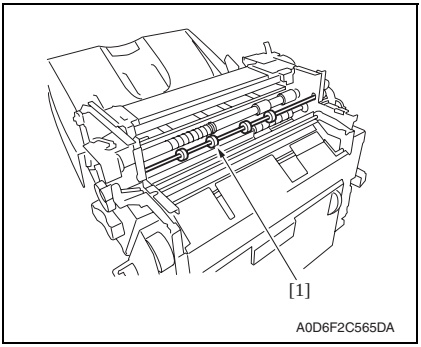


8. Remove the gear 1 [1], and remove the gear 2 [2] while disengaging the claw.

NOTE

- **Be careful not to lose the gear pin.**

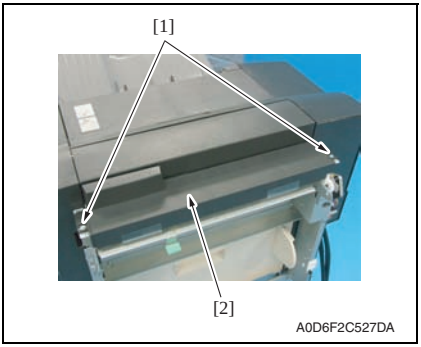
9. Remove the C-clip [3], and remove the bushing [4].
10. Remove the screw [5], and remove the paper guide (lower) [6].



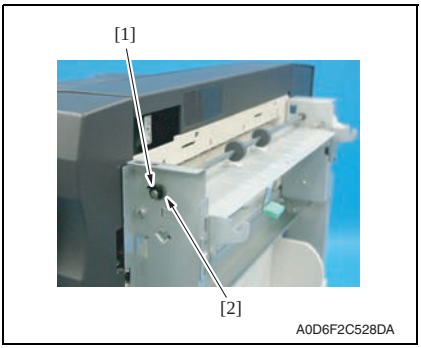
11. Remove the transport roller [1].

2.3.19 Middle transport roller

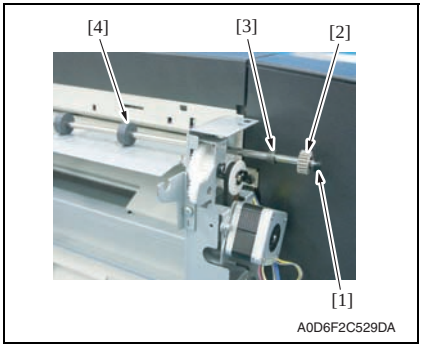
1. Remove the middle front cover and the middle rear cover.
See P.12



2. Remove two screws [1], and remove the middle upper cover [2].



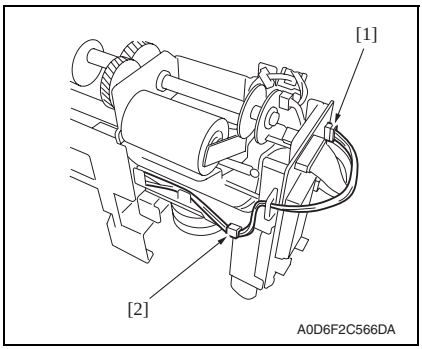
3. Remove the C-clip[1], and remove the bushing [2].



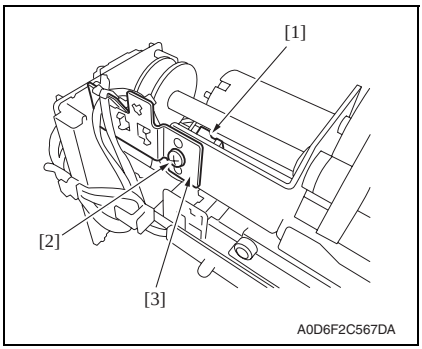
4. Shift the shaft assy in the orientation as shown on the left.
5. Remove the C-clip [1], the gear [2], the bushing [3], and remove the middle transport roller [4].

2.3.20 Punch unit

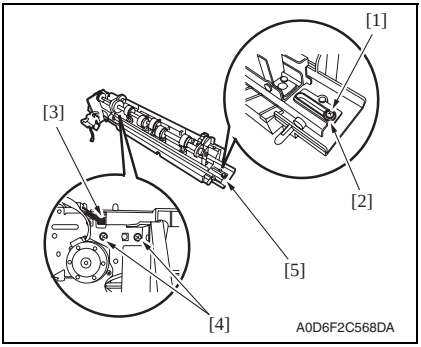
1. Remove the punch trash box.



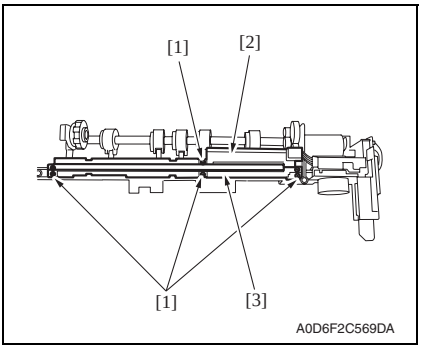
2. Disconnect the connector J1005 [1].
3. Remove the harness from the harness guide [2].



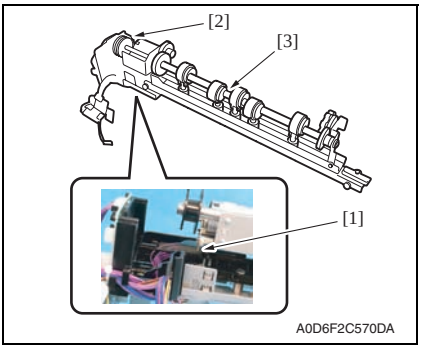
4. Disconnect the connector [1].
5. Remove the screw [2], and remove the sensor support plate [3].



6. Remove the screw [1] and the washer [2].
7. Disconnect the connector [3].
8. Remove two screws [4], and remove the base cover [5].



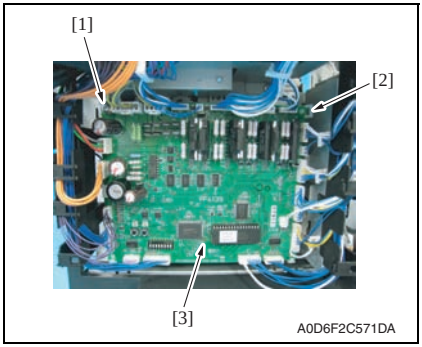
9. Remove four screws [1], and remove the Sensor unit (upper) [2] and the sensor unit (lower) [3].



10. Remove the spring [1].
11. Remove the punch unit [2] from the side registration motor section [3].

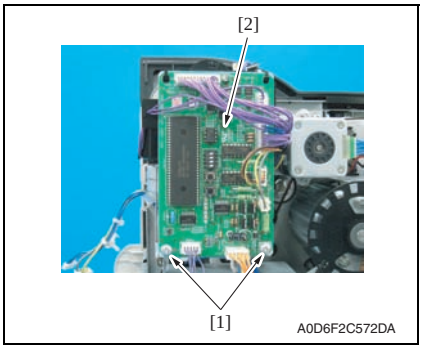
2.3.21 Finisher control board (FSCB)

1. Remove the rear cover.
See P.8



2. Disconnect all connectors on the board, and remove the screw [1].
3. Release the PCB support [2], and remove the finisher control board [3].

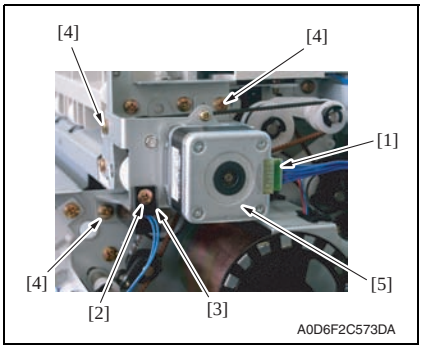
2.3.22 Punch control board (PKCB)



1. Remove two screws [1].
2. Disconnect all connectors, and remove the punch control board [2].

2.3.23 Transport motor unit

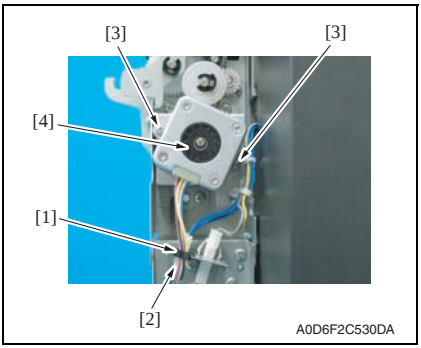
1. Remove the rear cover.
See P.8



2. Disconnect the connector [1].
3. Remove screw [2], and remove the harness guide [3].
4. Remove three screws [4], and remove the transport motor unit [5].

2.3.24 Entrance motor

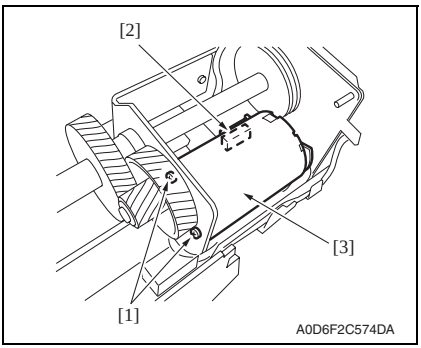
1. Remove the middle rear cover.
See P.12



2. Remove the harness from the wire saddle [1].
3. Disconnect the connector [2].
4. Remove two screws [3], remove the entrance motor [4].

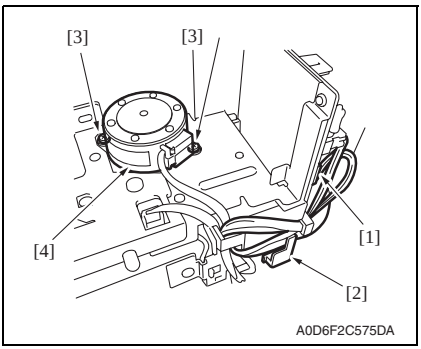
2.3.25 Punch motor

1. Remove the upper cover.
See P.10



2. Remove two screws [1].
3. Disconnect the connector [2], and remove the punch motor [3].

2.3.26 Side registration motor



1. Disconnect the connector J1001 [1].
2. Remove the harness from the harness guide [2].
3. Remove two screws [3], and remove the side registration motor [4].

Adjustment/Setting

3. How to use the adjustment section

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

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

- The power supply voltage meets the specifications.
- The power supply is properly grounded.
- The machine shares the power supply with any other machine that draws large current intermittently (e.g., elevator and air conditioner that generate electric noise).
- The installation site is environmentally appropriate: high temperature, high humidity, direct sunlight, ventilation, etc.; levelness of the installation site.
- The original has a problem that may cause a defective image.
- The density is properly selected.
- The Original Glass, slit glass, or related part is dirty.
- Correct 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.**

4. Finisher Adjust

4.1 FN-X3 Adjust

4.1.1 Center Staple Pos (Center-Staple Position Adj.)

- The stapling position is adjusted by aligning the stapling position to the folding position.
- This adjustment is made in the service mode of the main body. Since the adjustment is made in increments of 1 mm, this adjustment is useful for eliminating a displacement of 1mm or more.
- For the effective adjustment of a minimal displacement smaller than 1 mm, refer to "6. Board switch."
See P.48

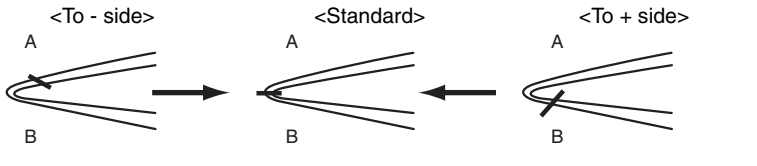
Adjustable range: - 7 to + 7 mm (Increment: 1 mm)

1. Load the feed tray with five or more sheets of A3 or 11x17 paper.
2. Produce five test prints in the center staple mode.
- These five sheets are used for adjustment to minimize variation.
3. Renew the center folding of the printed papers.
Take the top surface of the printed papers as A, and the under surface as B.
4. Check the deviation of the stapling position from the newly folded position.

NOTE

- **In checking the deviation, refer not to the folded position by the finisher but to the newly folded position.**

Standard:0 ± 2 mm



5. Set the mode to the service mode.
See P.202 of the main body service manual.
6. Select [Finisher Adjust] - [FN-X3 Adjust] - [Center Staple Pos].
7. Press the Menu/Select key.
8. Adjust with the ▲/▼ Keys.
When the stapling position is shifted to the direction A: Adjust the value to the - side.
When the stapling position is shifted to the direction B: Adjust the value to the + side.
9. Press the Menu/Select key.
10. Turn OFF the power switch, then wait for 10 sec. or more and turn ON the power switch.
11. Run a test print cycle again and check the stapling position.

4.1.2 Half-Fold Pos. (Half-Fold Position Adj.)

- The folding position is adjusted by aligning the folding position to the stapling position.
- This adjustment is made in the service mode of the main body. Since the adjustment is made in increments of 1 mm, this adjustment is useful for eliminating a displacement of 1 mm or more.
- For the effective adjustment of a minimal displacement smaller than 1 mm, refer to 6. Board switch.
See P.48

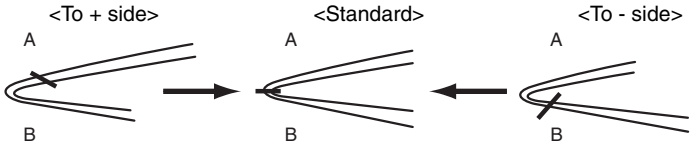
Adjustment range: - 7 to + 7 mm (Increment: 1 mm)

1. Load the feed tray with five or more sheets of A3 or 11x17 paper.
2. Produce five test prints in the center staple mode.

- These five sheets are used for adjustment to minimize variation.

3. Check the printed papers for deviation of the stapling position of from the newly folded position.
Take the top surface of the printed papers as A, and the under surface as B.

Standard: 0 ± 2 mm



4. Set the mode to the service mode.
See P.202 of the main body service manual.
5. Select [Finisher Adjust] - [FN-X3 Adjust] - [Half-Fold Pos.]
6. Press the Menu/Select key.
7. Adjust with the ▲/▼ Keys.
When the stapling position is shifted to the direction A: Adjust the value to the + side.When the stapling position is shifted to the direction B: Adjust the value to the - side.
8. Press the Menu/Select key.
9. Turn OFF the power switch, then wait for 10 sec. or more and turn ON the power switch.
10. Run a test print cycle again and check the center folding position.

4.2 Punch Option

4.2.1 Punch Kit type

Functions	• To set installation and model of the punch kit.
Use	• Use when the punch kit is installed.
Setting/ Procedure	• The default setting is Not Installed. "Not Installed" PK-501 PK-515 • Select the model of the punch kit currently installed.

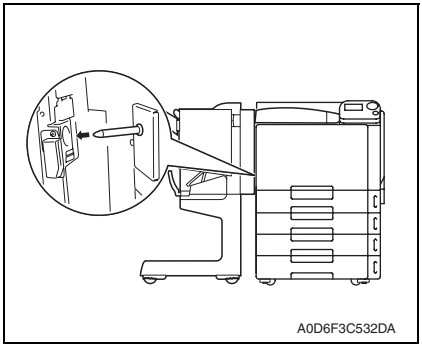
4.2.2 # of Punch-Holes

Functions	• To set the number of holes to be made by the punch kit installed.
Use	• Use when the punch kit is installed.
Setting/ Procedure	• The default setting is 2-Hole. "2-Hole" SWE 4-Hole EU 4-Hole 2-Hole/3-Hole **NOTE** **• Select only the number of holes supported by the punch kit installed.**

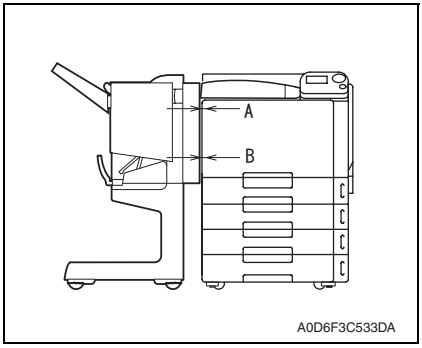
5. Mechanical adjustment

5.1 Adjustment of height and inclination

1. Gently move the finisher toward the machine and check for following.

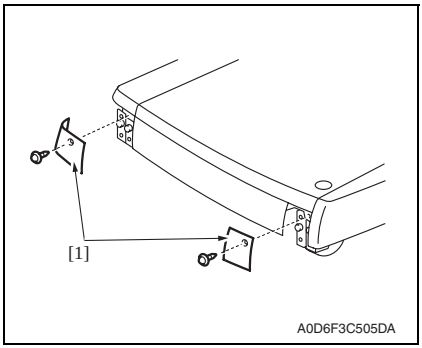


- Is the positioning pin aligned with the hole in the finisher?

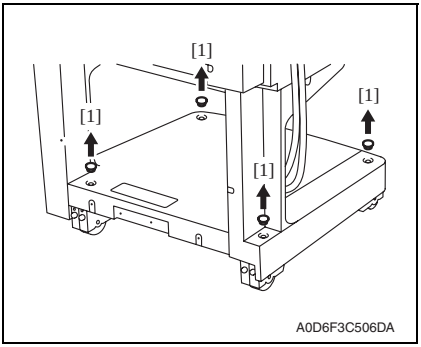


- Does the horizontal transport unit run excessively slantwise?
- Does the clearance at A equal that at B?

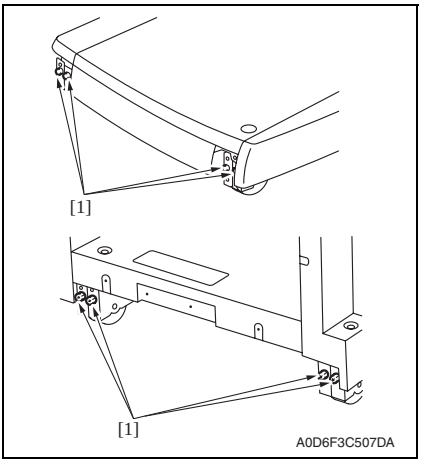
2. If the finisher is not at the same height as the machine, adjust the machine as follows.



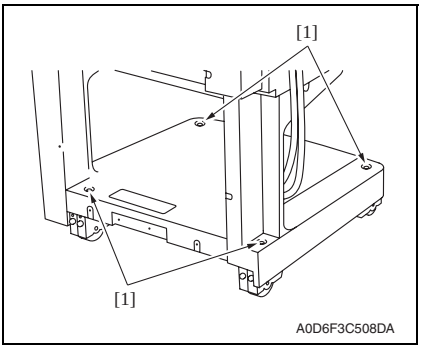
3. Remove the finisher from the main body, and remove two caster covers [1].



4. Remove four adjusting screw covers [1].



5. Loosen eight caster fixing screws [1].



6. Turn the adjustment screw [1] to make adjustment.

- To heighten: Turn the screw counter-clockwise.
- To bring down: Turn the screw clockwise.

7. Fasten the caster fixing screws.

8. Install the caster covers and the adjustment screw covers.

5.2 Adjustment of the folding position

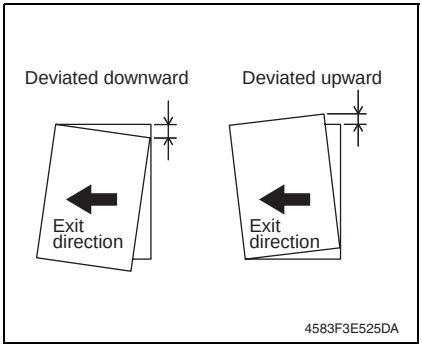
- Folding position is adjusted by adjusting the tray section and the saddle section.
- Adjust the folding position by aligning the tray section. Adjust the position of the saddle section if the position is still not proper.

<Deviation amount which will be adjusted>

Paper Size	Amount of deviation which will be adjusted by aligning the Tray Section	Amount of deviation which will be adjusted by aligning the Saddle Section position	Total amount which will be adjusted
A3	0.55 mm	0.55 mm	1.1 mm
A4	0.4 mm	0.4 mm	0.8 mm
B4	0.5 mm	0.5 mm	1.0 mm
Ledger	0.55 mm	0.55 mm	1.1 mm
Letter	0.35 mm	0.35 mm	0.7 mm

5.2.1 Adjustment procedure

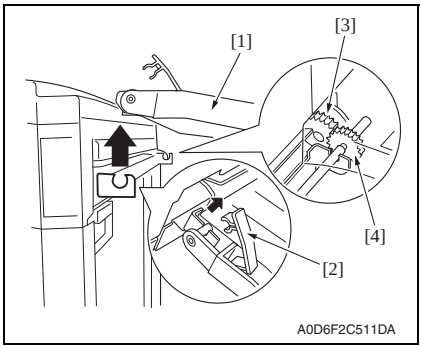
A. Checking the deviation amount



1. Load the paper take-up tray with A3 or 11 x 17 paper.
2. Run a test print cycle in the center staple mode.
3. Check the test print for folding deviation.

B. Adjusting the folding deviation

1. Turn power switch OFF, and remove the finisher from the machine.

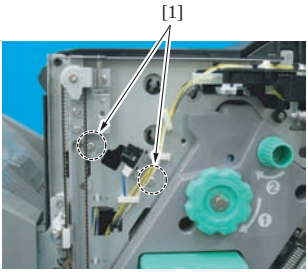


2. Raise the horizontal transport unit [1] straight upward and, keeping that condition, disengage the lock lever [2] and remove the horizontal transport unit [1].

NOTE

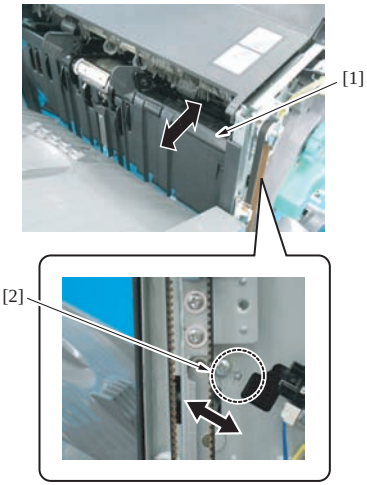
- **At reinstallation, be sure to engage the lock lever [2] in position.**
- **At reinstallation, make sure that the gear [3] of the finisher is in positive mesh with the gear [4] of the horizontal transport unit.**

3. Remove the middle transport unit.
See P.12
4. Remove the front cover.
See P.7



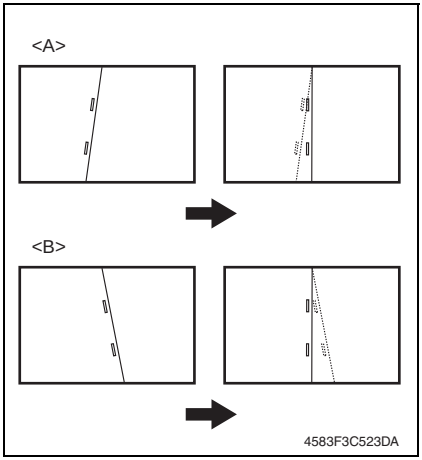
A0D6F3C509DA

5. Loosen two screws [1] on the tray section.



A0D6F3C510DA

6. Move the tray section [1] back and forth, and move the positioning dowels [2] right and left to adjust.

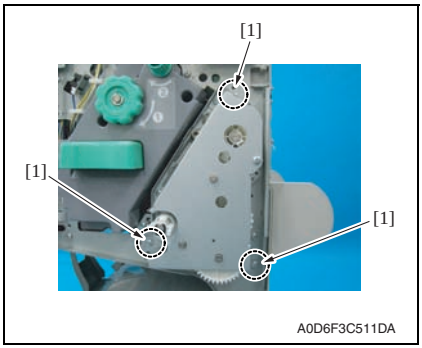


- If it is deviated downward <A>, move the positioning dowels to the left.
- If it is deviated upward <B>, move the positioning dowels to the right.

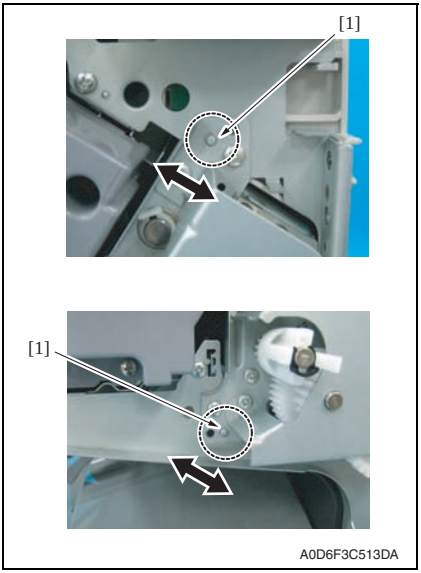
NOTE

- **The folding line will move along with the staples.**

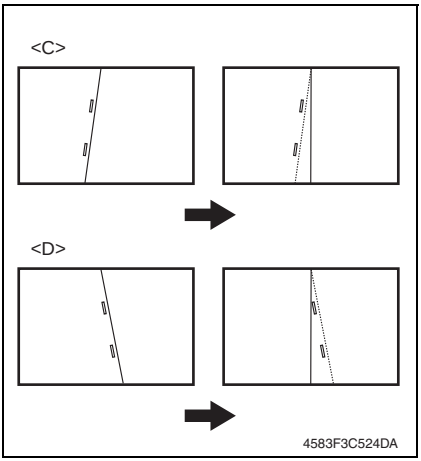
7. Carry out the test print to see if there is any folding deviation.
If the deviation is not adjusted, repeat the procedure from step 8 to adjust the saddle section position.



8. Loosen three set screws [1] on the saddle section.



9. Move the two positioning dowels [1] to adjust.



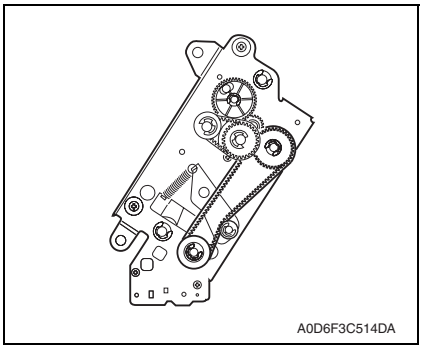
- If it is deviated downward <C>, move the positioning dowel to the left.
- If it is deviated upward <D>, move the positioning dowel to the right.

NOTE

- **Only the folding line will move.**

10. Feed out the test print and check if there is any folding deviation.

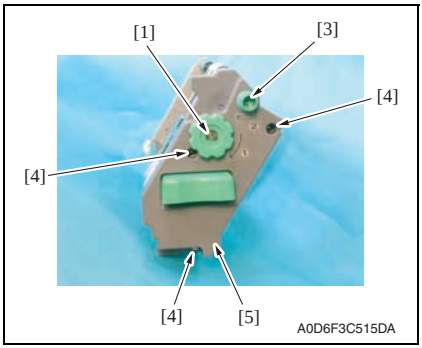
5.3 Stapler phase adjustment



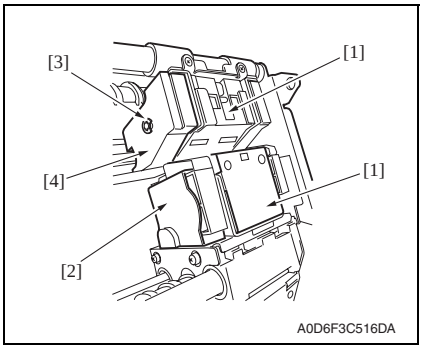
- Make phase adjustment of the stapler following the procedures given below whenever the gear or timing belt in front of the stapler has been replaced or removed for some reason, since such replacement or removal will cause mistiming between the staple driving by the staple driver (the lower unit of the stapler) and the staple clinching by the staple clincher (the upper unit of the stapler).

5.3.1 Adjustment procedure

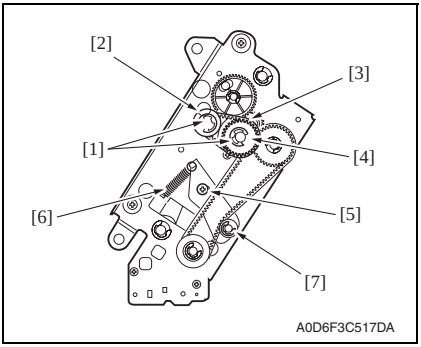
1. Remove the stapler.
See P.14



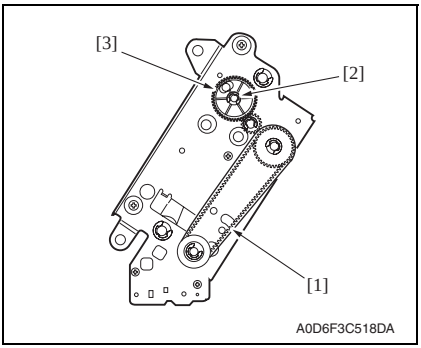
2. Remove the E-ring [1], and remove the jam release dial 1[2].
3. Remove the jam release dial 2 [3].
4. Remove the three screws [4], and remove the stapler front cover [5].



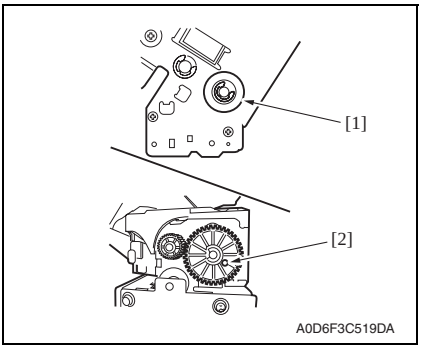
5. Remove the gear cover [2] from the staple driver [1].
6. Remove the E-ring [3], and remove the side cover [5] from the staple clincher [4].



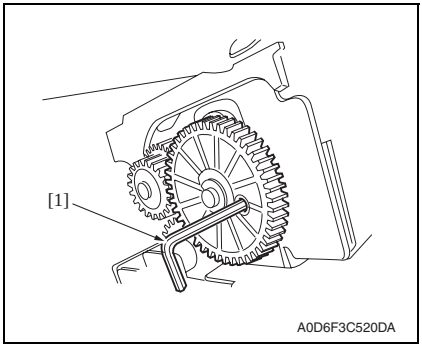
7. Remove two E-rings [1], and remove the staple jam release gear [2], the timing belt [3] and the middle gear 1 [4].
8. Remove the spacer and the spring located behind the staple jam release gear.
9. Remove the screw [5] and the spring [6], and remove the belt tension roller [7].



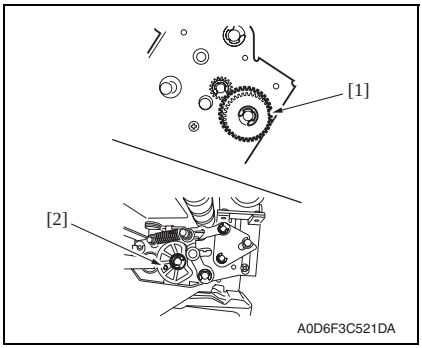
10. Remove the timing belt [1].
11. Remove the E-ring [2], and remove the staple position confirm gear [3].



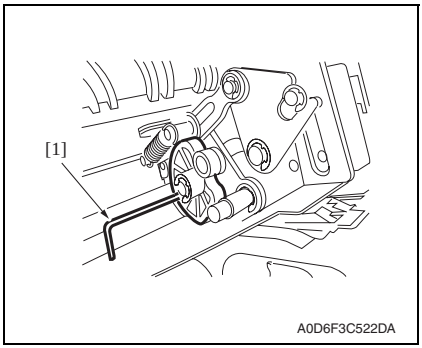
12. Turn the gear [1] to position the hole [2] in the gear of the staple driver to the hole behind.



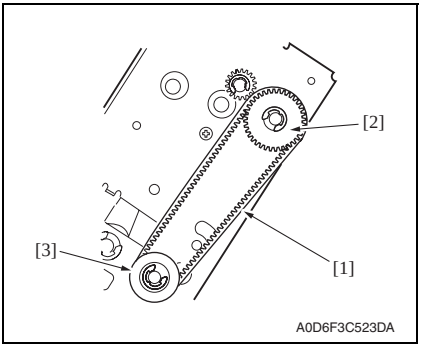
13. Insert a pin of approx. ϕ2 [1] (alternatively, 2 mm hexagonal wrench or the like can be preferably used) into the hole, and fix the gear.



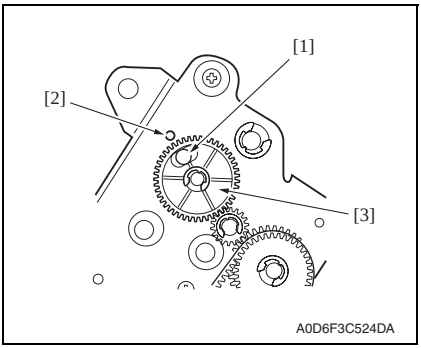
14. Turn the gear [1] to position the hole [2] in the cam of the staple clincher to the hole behind.



15. Insert a pin of approx.ϕ2 [1] (alternatively, 2 mm hexagonal wrench or the like can be preferably used) into the hole, and fix the cam.



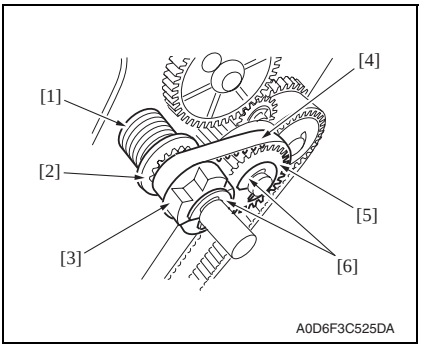
16. Set the timing belt [1] to the gear [2] and gear [3] with the gear and the cam in the fixed condition.



17. Install the staple position confirm gear [3] in such a way that the blue mark [1] of the gear comes face to face with the hole [2] in the frame.

NOTE

- **The position in which the blue mark meets face to face with the hole is the home position for stapling. If the staple jam release gear is turned for some reason, this home position will shift and the staple cartridge will not come off. In this case, the staple position confirm gear plays a role of resuming the stapling home position by referring to the blue mark. Therefore, the gear should be set in place correctly.**



18. Remove the pin fixing the gear and the cam to release them.

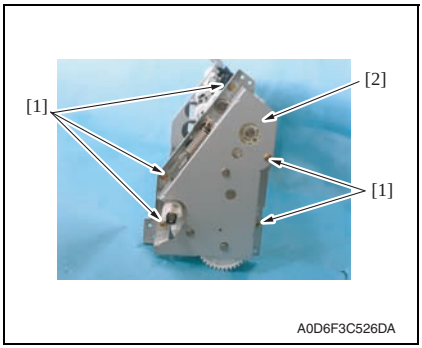
19. Set the spring [1], the spacer [2], the staple jam release gear [3], the timing belt [4] and the middle gear 1 [5], and fix them with two E-rings [6].

5.4 Saddle gear phase adjustment

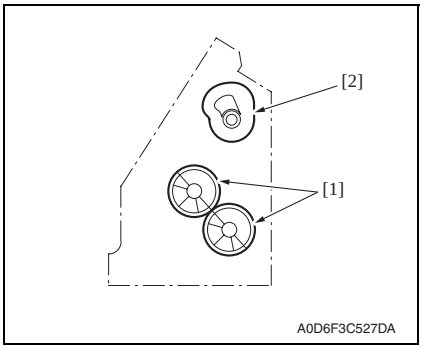
- Whenever the gear in front of the saddle or the folding roller has been replaced or removed for some reason, make gear phase adjustment following the procedures given below.

5.4.1 Adjustment procedure

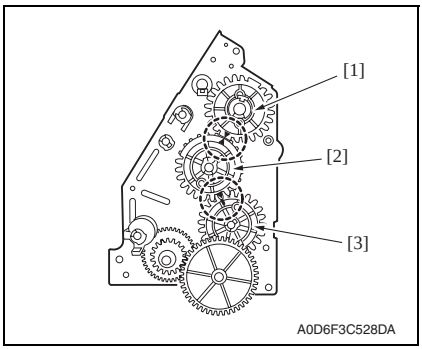
1. Remove the saddle.
See P.14



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



3. Set the folding roller [1] and saddle cam [2] within the saddle as shown in the figure.
4. With the folding roller and the saddle cam positioned as shown in the left figure, set the gears as shown in the figure in the following way.



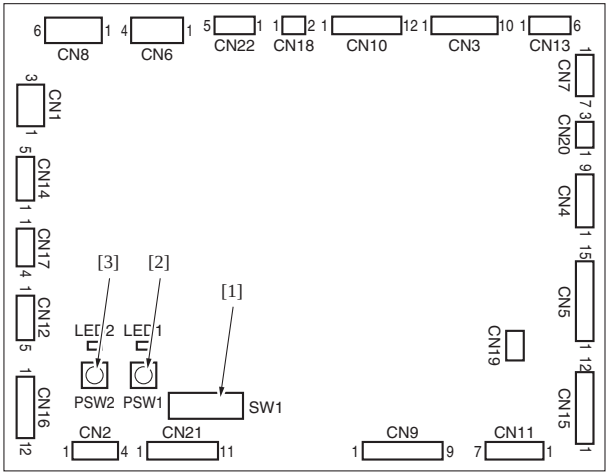
NOTE

- **The mark on the saddle cam drive gear [1] (either of the two marks) comes face to face with the mark on the middle gear [2] (the mark on the semi spherical part with narrow gear face width).**

5. With the saddle cam drive gear [1] and the middle gear [2] positioned as above, the mark on the middle gear [2] (the mark on the other semi spherical part) meets face to face with the rib of the folding roller drive gear [3].

6. Board switch

6.1 FSCB (Finisher control board)



	Symbol	Description
[1]	SW1	Used to adjust the folding position, adjust the center 2-point stapling position and adjust the alignment plate position.
[2]	PSW1	Used to adjust the folding position, adjust the center 2-point stapling position and adjust the alignment plate position.
[3]	PSW2	Used to adjust the folding position, adjust the center 2-point stapling position and adjust the alignment plate position.

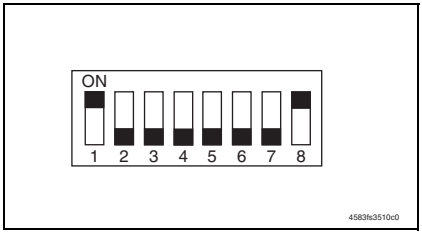
6.1.1 Adjustment of the folding positions

- When a folding position is adjusted, adjust the folding position to the stapling position. make this adjustment after replacing the finisher control board or when the folding position must be changed for some reason.

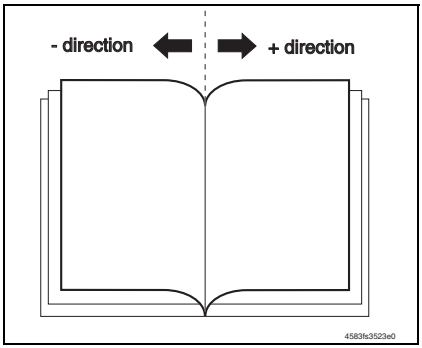
NOTE

- **Depending on the type of paper, both the folding position and the stapling position may be inaccurate. In this case, make adjustment independently from the finisher. In this independent adjustment from the finisher, set the adjustment value of [Center Staple pos] and [Half-Fold Pos.] in the service mode to ± 0 mm on the main body.**

1. Turn power switch OFF, and remove the finisher from the machine.
2. Remove the rear cover form the finisher.
See P.8



3. Set SW1 on the finisher control board as shown on the left figure.



4. Press PSW1 or PSW2 on the finisher control board for the required times to adjust the folding position. One pressing of the switch moves the folding position by approx. 0.16 mm.
   - Press PSW1 to move the folding position in the - direction.
   - Press PSW2 to move the folding position in the + direction.
   - Press PSW1 and PSW2 simultaneously to clear the present set adjustment value.
5. After setting the adjustment value of the folding position, set all bits of SW1 on the finisher control board to OFF.
6. Perform the booklet creation on the main body, and confirm that the folding position has been correctly adjusted. If not, redo the adjustment.

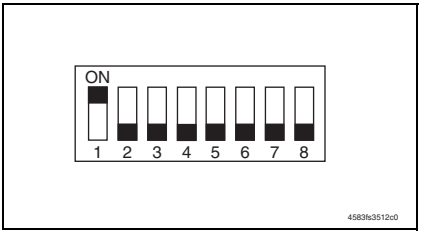
6.1.2 Adjustment of the center stapling position

- When a stapling position is adjusted, adjust the stapling position to the folding position. Make this adjustment after replacing the finisher control board or when the stapling position must be changed for some reason.

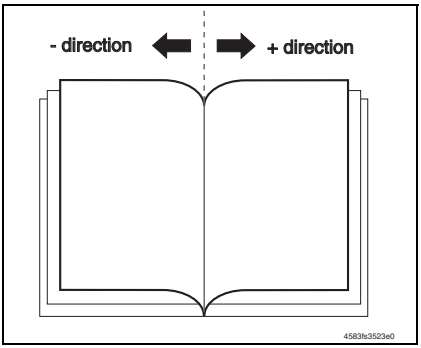
NOTE

- **Depending on the type of paper, both the folding position and the stapling position may be inaccurate. In this case, make adjustment independently from the finisher. In this independent adjustment from the finisher, set the adjustment value of [Center Staple pos] and [Half-Fold Pos.] in the service mode to ± 0mm on the main body.**

1. Turn power switch OFF, and remove the finisher from the machine.
2. Remove the rear cover form the finisher.
See P.8



3. Set SW1 on the finisher control board as shown on the left figure.



4. Press PSW1 or PSW2 on the finisher control board for the required times to adjust the stapling position. One pressing of the switch moves the stapling position by approx. 0.14 mm.
- Press PSW1 to move the stapling position in the - direction.
- Press PSW2 to move the stapling position in the + direction.
- Press PSW1 and PSW2 simultaneously to clear the present set adjustment value.

5. After setting the adjustment value of the stapling position, set all bits of SW1 on the finisher control board to OFF.
6. Perform the booklet creation on the main body, and confirm that the stapling position has been correctly adjusted. If not, redo the adjustment.

6.1.3 Adjustment of the alignment plate position

- Alignment plate should be adjusted when there is a faulty alignment, the staple position deviates.

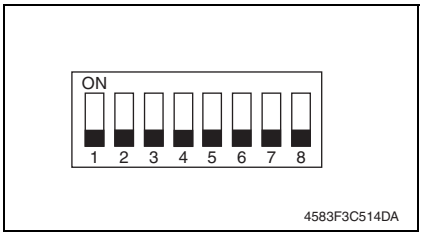
A. Alignment procedure

NOTE

- **If a step or steps are wrongly performed in mid procedure, stop the procedure immediately. Then turn OFF the power switch of the main body, wait for 10 sec. or more, and turn ON the power switch. After performing these steps, start the procedure over.**

1. Turn power switch OFF, and remove the finisher from the machine.

2. Remove the rear cover form the finisher.
See P.8

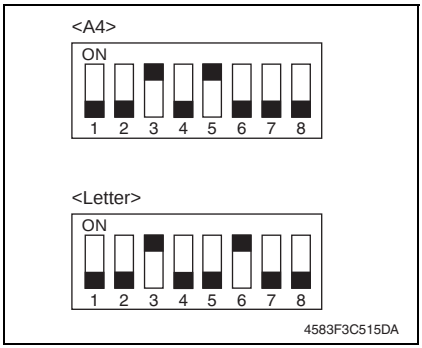


3. Check to make sure that all SW1 on the finisher controller board are set to OFF.

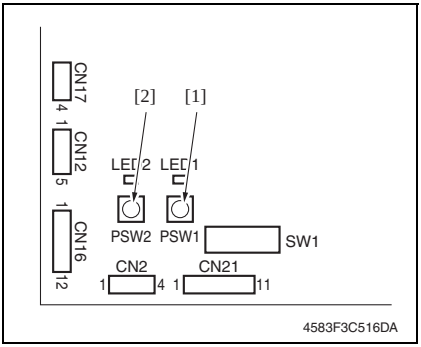
NOTE

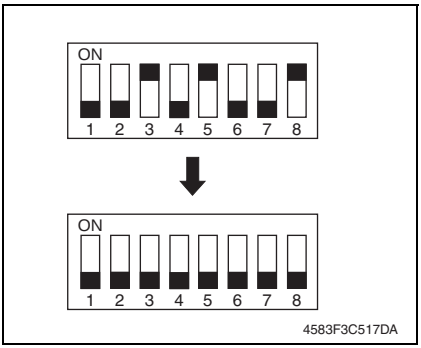
- **When not all of them are OFF, write down the switch status and turn them OFF.**

4. With the rear cover of the finisher removed, install the finisher to the machine, and turn power switch ON.



5. When the initial operation of the finisher is complete, turn on the following switches of SW1.
When adjusting with A4: 3, 5
When adjusting with Letter: 3, 6





11. Return the finisher to the original status.

6. After the initial operation of the finisher, press the PSW1 [1] on the finisher control board and make sure that the alignment plate moves to the selected paper size area.

7. Adjust the alignment plate position with PSW1 [1] or PSW2 [2].
When adjusting inward: Press PSW1.
When adjusting outward: Press PSW2.

The alignment plate will move 0.367mm every time the push switch is pressed.
Alignment range is ± 2.936 mm.

8. When the adjustment is complete, turn switch 8 of SW1 ON to set the adjustment value.

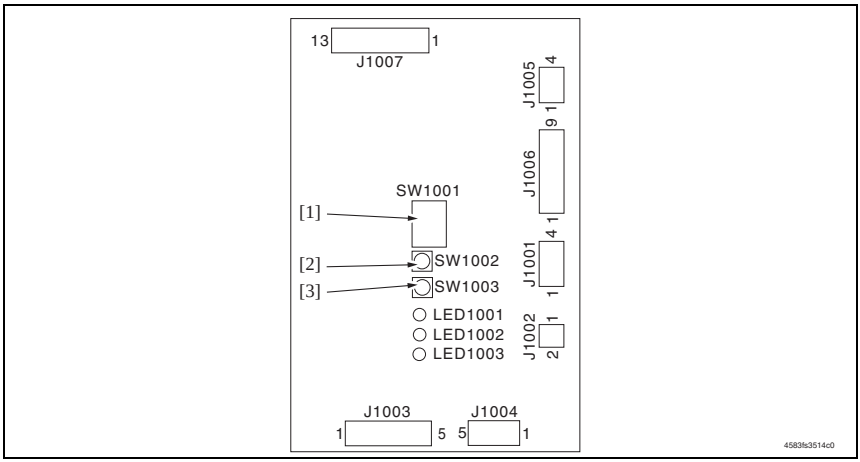
9. Turn all adjustment switches OFF.

10. Turn power switch OFF.

NOTE

- **When not all SW1 are OFF in step 3, return to the original condition according to the written note.**

6.2 PKCB (Punch control board)

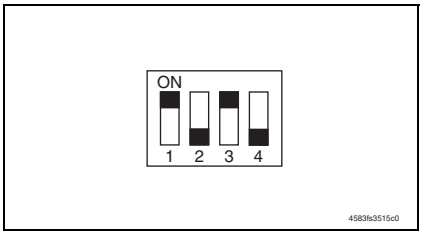


	Symbol	Description
1	SW1001	Used to register the number of punched holes and adjust the sensor output.
2	SW1002	Used to register the number of punched holes and adjust the sensor output.
3	SW1003	Used to register the number of punched holes and adjust the sensor output.

6.2.1 Adjustment of the sensor output

- Be sure to make this adjustment after replacing the punch control board, the side registration sensor (Photosensor board or LED board) or the punch dust full sensor (punch dust full sensor board or punch dust full LED board).

1. Turn power switch OFF, and remove the finisher from the machine.
2. Remove the rear cover form the finisher.
See P.8



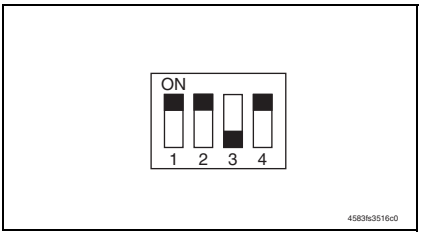
3. Set the bits 1 through 4 of DIPSW1001 on the punch control board as shown on the left figure.
4. Press SW1002 or SW1003 on the punch control board. The sensor output will be automatically adjusted.

- When all LED1001, LED1002 and LED1003 light up, the adjustment has been completed.

5. Set all bits of DIPSW1001 to OFF.

6.2.2 Registration of the number of punch holes

- In order for the finisher to recognize the number of punch holes that can be achieved by the installed punch unit, such number of punch holes is registered in the IC on the punch control board. Make this registration whenever the punch control board has been replaced.
- However, this registration is not necessary if the EEP-ROM used on an old board has been reinstalled to a new board.



1. Set the bits 1 through 4 of DIPSW1001 on the punch control board as shown on the left figure.

2. Press SW1002 on the punch control board to select the number of punch holes.
- Each time SW1002 is pressed, the following display changes in the descending order shown below:

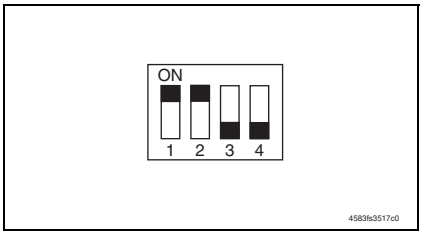
Number of punch holes	LED 1001	LED 1002	LED 1003
2 (Punch unit J1)	ON	OFF	OFF
2/3 (Punch unit K1)	ON	ON	OFF
4 (Punch unit G1)	OFF	ON	OFF
4 (Punch unit H1)	OFF	OFF	ON

3. Press SW1003 on the punch control board twice. The number of punch holes will be registered in the punch control board.
- The pressing of SW1003 changes the steady lighting of the LED to flickering, and the pressing of SW1003 again changes the flickering of the LED to steady lighting. This completes the registration.

4. Set all bits of DIPSW1001 to OFF.

6.2.3 Procedure after replacing the EEP-ROM (IC1002)

1. Turn OFF the power switch of the main body.



2. Set the bits 1 through 4 of DIPSW1001 on the punch control board as shown on the left figure.
3. Press SW1002 and SW1003 on the punch control board simultaneously.

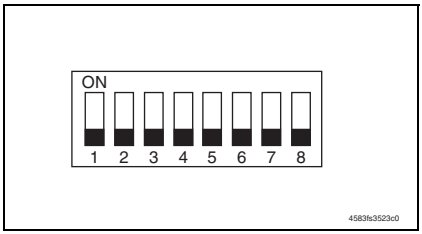
- This will initialize the EEP-ROM. After the initialization, all LED1001, LED1002 and LED1003 light up.

4. Adjust the sensor output, and register the number of punch holes.
5. Set all bits of DIP SW 1001 to OFF.

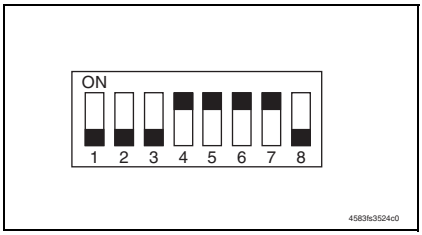
6.2.4 Punch center position adjustment

- This adjustment is made when the punch lateral movement is changed from the lateral registration motion (automatic through end face detection) to fixed system based on the paper size.

1. Turn power switch OFF, and remove the finisher from the machine.
2. Remove the rear cover form the finisher.
See P.8

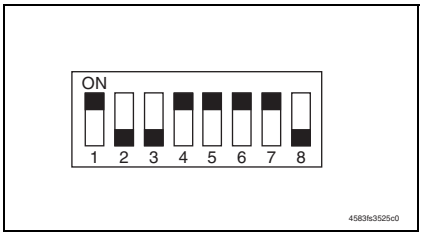


3. Check that all keys of SW1 of the finisher control board are OFF.
4. Turn ON the power switch of the main body and wait until the finisher completes its initial operation.

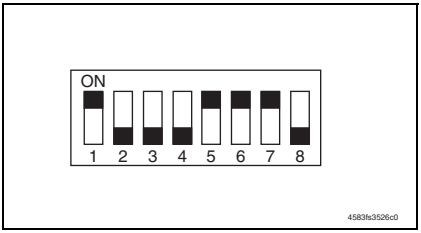


- Use the following procedure to clear the adjustment of the punch lateral movement.

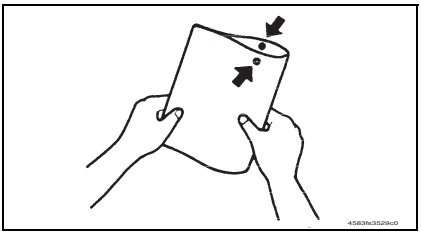
5. Turn ON keys 4, 5, 6, and 7 of SW1 of the finisher control board.



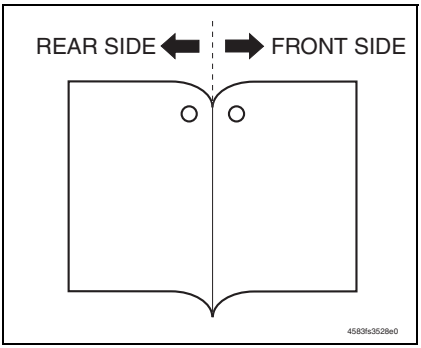
6. Turn ON key 1 of SW1 of the finisher control board.
7. Press PSW1 and PSW2 of the finisher control board at the same time.



8. Turn OFF key 4 of SW1 of the finisher control board.
9. Wait until the machine becomes capable of paper feed.

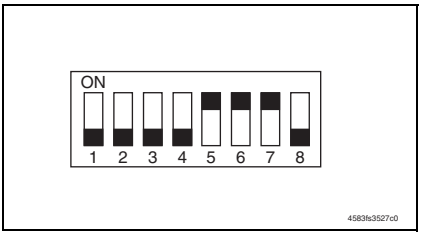


10. Feed one sheet of paper through the machine. Fold the print fed out of the machine in half and check that the punch holes are aligned with each other.
Specifications:0 ± 2 mm
- If the specified range is not met, use the following procedure to adjust the punch center position.



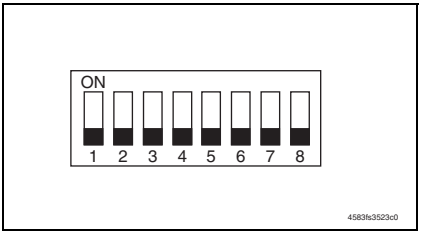
11. Press PSW1 or PSW2 of the finisher control board once according to the direction of deviation.
- Pressing PSW1 moves the punch position to the front.
- Pressing PSW2 moves the punch position to the rear.
- Each press of PSW1 or PSW2 moves the position 1 mm. The adjustment range should be within ± 5 mm.

12. Feed another sheet of paper. If the punch hole position is not properly adjusted, make the adjustment once again.

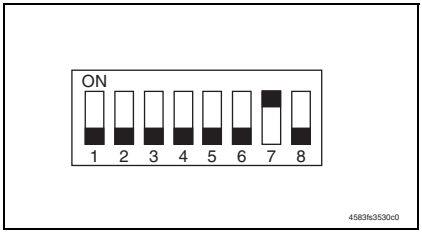


- When the adjustment procedure has been completed, use the following procedure to finish the adjustment mode.

13. Turn OFF key 1 of SW1 of the finisher control board.



14. Turn OFF keys 5, 6, and 7 of SW1 of the finisher control board.
15. Turn OFF the power switch of the main body.



16. Turn ON key 7 of SW1 of the finisher control board.

NOTE

- **Flipping ON key 7 of SW1 validates the setting made to the fixed system based on the paper size as changed from the lateral registration motion (automatic through end face detection).**
- **To return the setting back to the lateral registration motion, flip OFF key 7 of SW1.**

17. Turn ON the power switch of the main body.

18. Reinstall the rear cover.

See P.8

NOTE

- **The procedure must be carried out as specified. In particular, switching ON or OFF must be performed properly.**
- **If a step or steps are wrongly performed in mid procedure, stop the procedure immediately. Then turn OFF the power switch of the main body, wait for 10 sec. or more, and turn ON the power switch. After performing these steps, start the procedure over.**
- **This adjustment is applicable only to the punch position center adjustment. The adjustment range is ± 5 mm. It does not adjust for variations in the punch hole positions.**

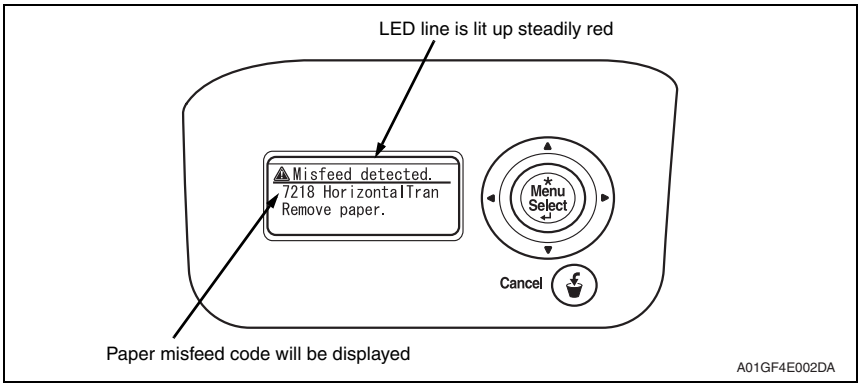
Blank Page

Troubleshooting

7. Jam display

7.1 Misfeed display

- When a paper misfeed occurs, the LED line lights up red steadily and the misfeed message is displayed on the control panel of the machine.

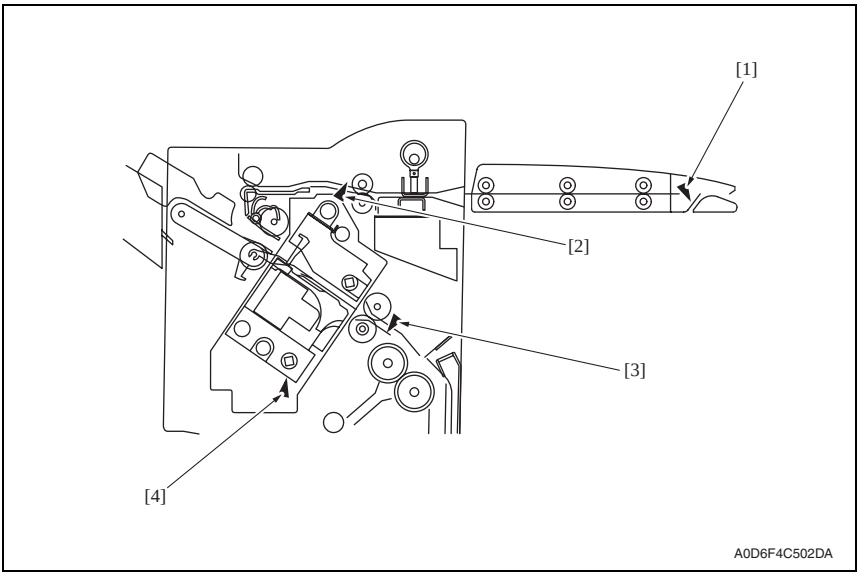


No.	Code	Misfeed location	Misfeed access location	Action
[1]	7218	Transport section	Front door	P.62
[2]	7216	Horizontal transport section	Horizontal transport cover	P.62
[3]	7225	Folding position section	Front door	P.63
[4]	7281	Stapler section	Front door	P.63
[5]	7221	Paper stack exit section	Front door	P.64

7.1.1 Misfeed display resetting procedure

- Open the corresponding door, clear the sheet of paper misfeed, and close the door.

7.2 Sensor layout



[1]	Turnover empty sensor	PS27	[3]	Folding position sensor	PS10
[2]	Entrance sensor	PS1	[4]	Stapler drive home position sensor	PS19

7.3 Solution

7.3.1 Initial check items

- When a paper misfeed occurs, first perform the following initial check items.

Check Item	Action
Does the paper meet product specifications?	Change the paper.
Is paper curled, wavy, or damp?	See “Solution when paper curl occurs” on P.61.
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 rolls/rollers dirty, deformed, or worn?	Clean or change 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 found operational when checked for correct operation?	Correct or change the defective actuator.

7.3.2 Solution when paper curl occurs

Step	Check items/actions		
1	Turn over the stacked paper in the paper tray.	OK	—
		NG	Go to step 2.
2	Does paper curl occur just after a warm-up has been completed or the sleep mode has been turned OFF?	YES	Go to step 3.
	Does paper curl occur under normal conditions (under conditions other than those mentioned above)?	YES	Go to step 5.
3	*1.* Call the Service Mode to the screen. *2.* Select [System 1] → [Change Warm Up Time]. *3.* Change the setting to [Mode3]. See P.217 of the main body service manual.	OK	—
		NG	Go to step 4.
4	*1.* Call the Service Mode to the screen. *2.* Select [System 1] → [Change Warm Up Time]. *3.* Change the setting to [Mode4]. See P.217 of the main body service manual.	—	—
5	*1.* Call the Service Mode to the screen. *2.* Select [Machine] → [Fusing Temperature]. *3.* Select a paper type. *4.* Change the temperature of Heater Roller to [-10 °C]. See P.225 of the main body service manual.	OK	—
		NG	Go to step 6
6	*1.* Call the Service Mode to the screen. *2.* Select [Machine] → [Fusing Temperature]. *3.* Select a paper type. *4.* Change the temperature of Heater Roller to [-20 °C]. See P.225 of the main body service manual.	—	—

7.3.3 Transport section misfeed

A. Detection timing

Type	Description
Transport section misfeed detection	The entrance sensor (PS1) does not detect paper even after the lapse of approx. 1.5 sec. after the entrance sensor (PS1) has received the paper exit signal from the main body.
	Paper is not removed from the entrance sensor (PS1) even after the lapse of approx. 2 sec. after the entrance sensor (PS1) has detected paper edge.

B. Action

Relevant electrical parts	
Entrance sensor (PS1)	Finisher control board (FSCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Initial check items	—	—
2	PS1 I/O, sensor check	FSCB CN16FSCB-11 (ON)	FS-609/PK-501 C-11
3	FSCB replacement	—	—

7.3.4 Horizontal transport section misfeed

A. Detection timing

Type	Description
Horizontal transport section misfeed detection	The turnover empty sensor (PS27) is not unblocked even after the lapse of a given period of time after the leading edge of the paper has blocked the turnover empty sensor (PS27).

B. Action

Relevant electrical parts	
Turnover empty sensor (PS27)	Finisher control board (FSCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Initial check items	—	—
2	PS27 I/O, sensor check	FSCB CN21FSCB-5 (ON)	FS-609/PK-501 I-10
3	FSCB replacement	—	—

7.3.5 Folding position section misfeed

A. Detection timing

Type	Description
Folding position section misfeed detection	The folding position sensor (PS10) does not detect paper even after the set period of time after the paper has been fed from the transport booklet tray to the stapling position during stapling operation.
	Paper is not removed from the folding position sensor (PS10) even after the lapse of approx. 10.5 sec. after the staple/folding motor (M7) has been driven during stapling operation.

B. Action

Relevant electrical parts	
Folding position sensor (PS10)	Finisher control board (FSCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Initial check items	—	—
2	PS10 I/O, sensor check	FSCB CN16FSCB-2 (ON)	FS-609/PK-501 C-12
3	FSCB replacement	—	—

7.3.6 Stapler section misfeed

A. Detection timing

Type	Description
Stapler section misfeed detection	The stapler drive home position sensor (PS19) is not turned OFF or does not return to its home position even after the set period of time after the stapler has been driven.

B. Action

Relevant electrical parts	
Stapler drive home position sensor (PS19)	Finisher control board (FSCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Initial check items	—	—
2	PS19 I/O, sensor check	—	—
3	FSCB replacement	—	—

7.3.7 Paper stack exit section misfeed

A. Detection timing

Type	Description
Paper stack exit section misfeed detection	The finisher tray sensor (PS6) remains activated when a copy stack, which has been stapled together, is fed out.

B. Action

Relevant electrical parts	
Exit motor (M3) Finisher tray sensor (PS6)	Finisher control board (FSCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Initial check items	—	—
2	PS6 I/O, sensor check	FSCB CN5FSCB-3 (ON)	FS-609/PK-501 I-7
3	M3 operation check	FSCB CN13FSCB-3 to 6	FS-609/PK-501 C-6
4	FSCB replacement	—	—

8. Trouble code

8.1 Trouble code display

NOTE

- **Before starting the troubleshooting in relation to the punch mechanism C11CX, be sure to turn OFF the power switch of the machine.**

8.2 Trouble code list

Code	Item	Description
C1180	Transport system drive malfunctions	• The folding roller home position sensor (PS12) is not unblocked even after the lapse of a given period of time after the folding roller has started moving from its home position. • The folding roller home position sensor (PS12) is not blocked even after the lapse of a given period of time after the folding roller has started moving from a position not the home position.
C1181	Paddle motor malfunctions	• The paddle home position sensor (PS2) is not unblocked even after the lapse of a given period of time after the paddle has started moving from its home position. • The paddle home position sensor (PS2) is not blocked even after the lapse of a given period of time after the paddle has started moving from a position not the home position. • The bundle exit roller home position sensor (PS3) is not unblocked even after the lapse of a given period of time after the booklet roller has started moving from its home position. • The bundle exit roller home position sensor (PS3) is not blocked even after the lapse of a given period of time after the booklet roller has started moving from a position not the home position.
C1183	Elevate mechanism malfunctions	• The exit tray home position sensor (PS9) is not blocked even after the lapse of a given period of time after the tray has started moving up. • An encoder clock input is not detected within a given period of time during operation of the tray.
C1192	Front aligning plate motor malfunctions	• The front aligning plate home position sensor (PS4) is not unblocked even after the lapse of a given period of time after the front aligning plate has started moving from its home position to a position out of the home position. • The front aligning plate home position sensor (PS4) is not blocked even after the lapse of a given period of time after the front aligning plate has started moving from a position out of the home position to the home position.
C1193	Rear aligning plate motor malfunctions	• The rear aligning plate home position sensor (PS5) is not unblocked even after the lapse of a given period of time after the rear aligning plate has started moving from its home position to a position out of the home position. • The rear aligning plate home position sensor (PS5) is not blocked even after the lapse of a given period of time after the rear aligning plate has started moving from a position out of the home position to the home position.

Code	Item	Description
C11A4	Booklet exit motor malfunctions	• The exit belt home position sensor (PS7) is not unblocked even after the lapse of a given period of time after the booklet exit belt has started moving from its home position during an initial operation. • The exit belt home position sensor (PS7) is not unblocked even after the lapse of a given period of time after the booklet exit belt has started moving from its home position during an ordinary operation. • The exit belt home position sensor (PS7) is not blocked even after the lapse of a given period of time after the booklet exit belt has started moving from a position not the home position during an initial operation. • The exit belt home position sensor (PS7) is not blocked even after the lapse of a given period of time after the booklet exit belt has started moving from a position not the home position during an ordinary operation.
C11B1	Stapler unit slide motor malfunctions	• The slide home position sensor (PS18) is not unblocked even after the lapse of a given period of time after the stapler unit has started moving from its home position. • The slide home position sensor (PS18) is not blocked even after the lapse of a given period of time after the stapler unit has started moving from a position not the home position.
C11B4	Stapler/folding motor malfunctions	• The stapler drive home position sensor (PS19) is not blocked even after the lapse of a given period of time after the clinch operation has started. • An encoder clock input is not detected within a given period of time during a clinch operation. • The folding home position sensor (PS11) is not blocked even after the lapse of a given period of time after the folding unit has started moving from a position out of the home position during an initial operation. • The folding home position sensor (PS11) is not unblocked even after the lapse of a given period of time after a folding operation has been started during an ordinary operation. • The folding home position sensor (PS11) is not blocked even after the lapse of a given period of time after a folding operation has been started and the sensor has been unblocked during an ordinary operation. • An encoder clock input is not detected within a given period of time during a folding operation.
C11C1	Punch control board malfunctions	• No response is received to a request made by the finisher within a given period of time during initial communications. • No response is received to a request made by the finisher within a given period of time during ordinary communications. • There is no match in the checksum values of the backup data as checked twice. • The 24 V power source of the punch unit is OFF when an operation request is made from the finisher.
C11C2	Punch side registration motor malfunctions	• The side registration home sensor (PS2) is not unblocked even after the lapse of a given period of time after the punch side registration unit has started moving from its home position. • The side registration home sensor (PS2) is not blocked even after the lapse of a given period of time after the punch side registration unit has started moving from a position not the home position.

Code	Item	Description
C11C3	Punch motor malfunctions	• The home position is not detected within a given period of time after the punch motor has been rotated a half turn. • An encoder clock input is not detected even after the lapse of a given period of time during operation of the punch motor. • The setting value calculated during the initial operation falls outside the threshold value range.
C11C5	Punch sensor malfunctions	• The light receiving voltage is 2.5 V or less when the illuminating voltage is set to 4.4 V. • The light receiving voltage is 2.5 V or more when the illuminating voltage is set to 0 V. • The illuminating voltage setting is 4.4 V or more after the adjustment has been made.
C1401	Backup RAM malfunction	• Data written in the backup memory differs from what is recorded in it and writing operation is not correctly performed even with two retry sequences (a total of three writing sequences).

NOTE

- **The punch unit detects punch-related malfunctions and notifies the finisher of any malfunction detected.**

8.3 Solution

8.3.1 C1180: Transport system drive malfunctions

Relevant electrical parts	
Folding roller home position sensor (PS12) Transport motor (M1)	Finisher control board (FSCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Check the motor connectors for proper connection, and correct as necessary.	—	—
2	Check the connector of motor for proper drive coupling, and correct as necessary.	—	—
3	PS12 I/O, sensor check	FSCB CN16FSCB-9 (ON)	FS-609/PK-501 C-11
4	M1 operation check when the power switch is turned OFF and ON.	FSCB CN10FSCB-3 to 6	FS-609/PK-501 C-8 to 9
5	FSCB replacement	—	—

8.3.2 C1181: Paddle motor malfunctions

Relevant electrical parts	
Paddle home position sensor (PS2) Bundle exit roller home position sensor (PS3) Paddle motor (M2)	Finisher control board (FSCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Check the motor and sensor connectors for proper connection, and correct as necessary.	—	—
2	Check the connector of motor for proper drive coupling, and correct as necessary.	—	—
3	PS2 I/O, sensor check	FSCB CN9FSCB-2 (ON)	FS-609/PK-501 I-12
4	PS3 I/O, sensor check	FSCB CN9FSCB-8 (ON)	FS-609/PK-501 I-12
5	M2 operation check when the power switch is turned OFF and ON.	FSCB CN10FSCB-9 to 12	FS-609/PK-501 C-9
6	FSCB replacement	—	—

8.3.3 C1183: Elevate mechanism malfunctions

(1) Upper limit sensor

Relevant electrical parts	
Lift upper limit sensor (PS15)	Finisher control board (FSCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Check the sensor connectors for proper connection, and correct as necessary.	—	—
2	PS15 I/O, sensor check	FSCB CN15FSCB-12 (ON)	FS-609/PK-501 I-7
3	FSCB replacement	—	—

8.3.4 C1192: Front aligning plate motor malfunctions

Relevant electrical parts	
Front aligning plate home position sensor (PS4) Front aligning motor (M4)	Finisher control board (FSCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Check the motor and sensor connectors for proper connection, and correct as necessary.	—	—
2	Check the connector of motor for proper drive coupling, and correct as necessary.	—	—
3	PS4 I/O, sensor check	FSCB CN4FSCB-2 (ON)	FS-609/PK-501 I-8 to 9
4	M4 operation check when the power switch is turned OFF and ON.	FSCB CN3FSCB-2 to 5	FS-609/PK-501 C-5
5	FSCB replacement	—	—

8.3.5 C1193: Rear aligning plate motor malfunctions

Relevant electrical parts	
Rear aligning plate home position sensor (PS5) Rear aligning motor (M5)	Finisher control board (FSCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Check the motor and sensor connectors for proper connection, and correct as necessary.	—	—
2	Check the connector of motor for proper drive coupling, and correct as necessary.	—	—
3	PS5 I/O, sensor check	FSCB CN5FSCB-15 (ON)	FS-609/PK-501 I-8
4	M5 operation check when the power switch is turned OFF and ON.	FSCB CN3FSCB-7 to 10	FS-609/PK-501 C-5 to 6
5	FSCB replacement	—	—

8.3.6 C11A4: Booklet exit motor malfunctions

Relevant electrical parts	
Exit belt home position sensor (PS7) Exit motor (M3)	Finisher control board (FSCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Check the motor and sensor connectors for proper connection, and correct as necessary.	—	—
2	Check the connector of motor for proper drive coupling, and correct as necessary.	—	—
3	PS7 I/O, sensor check	FSCB CN5FSCB-6 (ON)	FS-609/PK-501 I-7
4	M3 operation check when the power switch is turned OFF and ON.	FSCB CN13FSCB-3 to 6	FS-609/PK-501 C-6
5	FSCB replacement	—	—

8.3.7 C11B1: Stapler unit slide motor malfunctions

Relevant electrical parts	
Slide home position sensor (PS18) Slide motor (M8)	Finisher control board (FSCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Check the motor and sensor connectors for proper connection, and correct as necessary.	—	—
2	Check the connector of motor for proper drive coupling, and correct as necessary.	—	—
3	PS18 I/O, sensor check	FSCB CN11FSCB-3	FS-609/PK-501 C to D-7
4	M8 operation check when the power switch is turned OFF and ON.	FSCB CN7FSCB-3 to 6	FS-609/PK-501 C-6 to 7
5	FSCB replacement	—	—

8.3.8 C11B4: Stapler/folding motor malfunctions

(1) Wiring

Relevant electrical parts	
Stapler drive home position sensor (PS19) staple/folding motor (M7)	Finisher control board (FSCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Check the motor connectors for proper connection, and correct as necessary.	—	—
2	Check the connector of motor for proper drive coupling, and correct as necessary.	—	—
3	PS19 I/O, sensor check	—	—
4	M7 operation check when the power switch is turned OFF and ON.	FSCB CN6FSCB-3 to 4	FS-609/PK-501 C-4
5	FSCB replacement	—	—

(2) Stapler/crease clock sensor (Stapler Section)

Relevant electrical parts	
Staple/folding motor clock sensor (PS14) Staple/folding motor (M7)	Finisher control board (FSCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Check the motor and sensor connectors for proper connection, and correct as necessary.	—	—
2	Check the connector of motor for proper drive coupling, and correct as necessary.	—	—
3	PS14 I/O, sensor check	FSCB CN9FSCB-5 (ON)	FS-609/PK-501 I-12
4	M7 operation check when the power switch is turned OFF and ON.	FSCB CN6FSCB-3 to 4	FS-609/PK-501 C-4
5	FSCB replacement	—	—

(3) Home position sensor

Relevant electrical parts	
Folding home position sensor (PS11) Staple/folding motor (M7)	Finisher control board (FSCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Check the motor and sensor connectors for proper connection, and correct as necessary.	—	—
2	Check the connector of motor for proper drive coupling, and correct as necessary.	—	—
3	PS11 I/O, sensor check	FSCB CN16FSCB-6 (ON)	FS-609/PK-501 C-11
4	M7 operation check when the power switch is turned OFF and ON.	FSCB CN6FSCB-3 to 4	FS-609/PK-501 C-4
5	FSCB replacement	—	—

(4) Stapler/crease clock sensor (Saddle Section)

Relevant electrical parts	
Staple/folding motor clock sensor (PS14) Staple/folding motor (M7)	Finisher control board (FSCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Check the motor and sensor connectors for proper connection, and correct as necessary.	—	—
2	Check the connector of motor for proper drive coupling, and correct as necessary.	—	—
3	PS14 I/O, sensor check	FSCB CN9FSCB-5 (ON)	FS-609/PK-501 I-12
4	M7 operation check when the power switch is turned OFF and ON.	FSCB CN6FSCB-3 to 4	FS-609/PK-501 C-4
5	FSCB replacement	—	—

8.3.9 C11C1: Punch control board malfunctions

Relevant electrical parts	
Finisher control board (FSCB) Punch control board (PKCB)	

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Turn OFF the power switch, wait for 10 sec. or more, and turn ON the power switch.	—	—
2	Check the connection condition between the punch unit and FSCB.	—	—
3	Measure the voltage between CN14-5 (+) and CN14-3 (-) of the FSCB. Is the voltage 24VDC?	—	—
4	Initialize punch unit EEP-ROM.	—	—
5	PKCB replacement	—	—
6	FSCB replacement	—	—

8.3.10 C11C2: Punch side registration motor malfunctions

Relevant electrical parts	
Side registration home sensor (PS2)	Punch control board (PKCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Check the sensor connectors for proper connection, and correct as necessary.	—	—
2	PS2 I/O, sensor check	PKCB J1006PKCB-3 (ON)	FS-609/PK-501 J-3
3	PKCB replacement	—	—

8.3.11 C11C3: Punch motor malfunctions

Relevant electrical parts	
Punch home position sensor (PS1) Punch motor clock sensor (PS3) Punch motor (M1)	Punch control board (PKCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Check the motor and sensor connectors for proper connection, and correct as necessary.	—	—
2	Check the connector of motor for proper drive coupling, and correct as necessary.	—	—
3	PS1 I/O, sensor check	PKCB J1006PKCB-6 (ON)	FS-609/PK-501 J-3
4	PS3 I/O, sensor check	PKCB J1006PKCB-9 (ON)	FS-609/PK-501 J-3 to 4
5	M1 operation check when the power switch is turned OFF and ON.	PKCB J1002PKCB-1 to 2	FS-609/PK-501 J-2
6	PKCB replacement	—	—

8.3.12 C11C5: Punch sensor malfunctions

(1) Side registration sensor

Relevant electrical parts	
Side registration home sensor (PS2)	Punch control board (PKCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Check the sensor connectors for proper connection, and correct as necessary.	—	—
2	PS2 I/O, sensor check	PKCB J1006PKCB-3 (ON)	FS-609/PK-501 J-3
3	PKCB replacement	—	—

(2) Wastes full sensor

Relevant electrical parts	
Punch Trash Full Photo Sensor Board (PTFB/PR) Punch Trash Full LED Board (PTFB/LED)	Punch control board (PKCB)

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Check the connection condition between PKCB and PTFB/PR.	—	—
2	Check the connection condition between PWB-B PK and PTFB/LED.	—	—
3	PTFB/PR replacement	—	—
4	PTFB/LED replacement	—	—
5	PKCB replacement	—	—

(3) Finisher control board

Relevant electrical parts	
Exit tray home position sensor (PS9) Lift motor clock sensor (PS17) Lift motor (M6)	Finisher control board (FSCB)

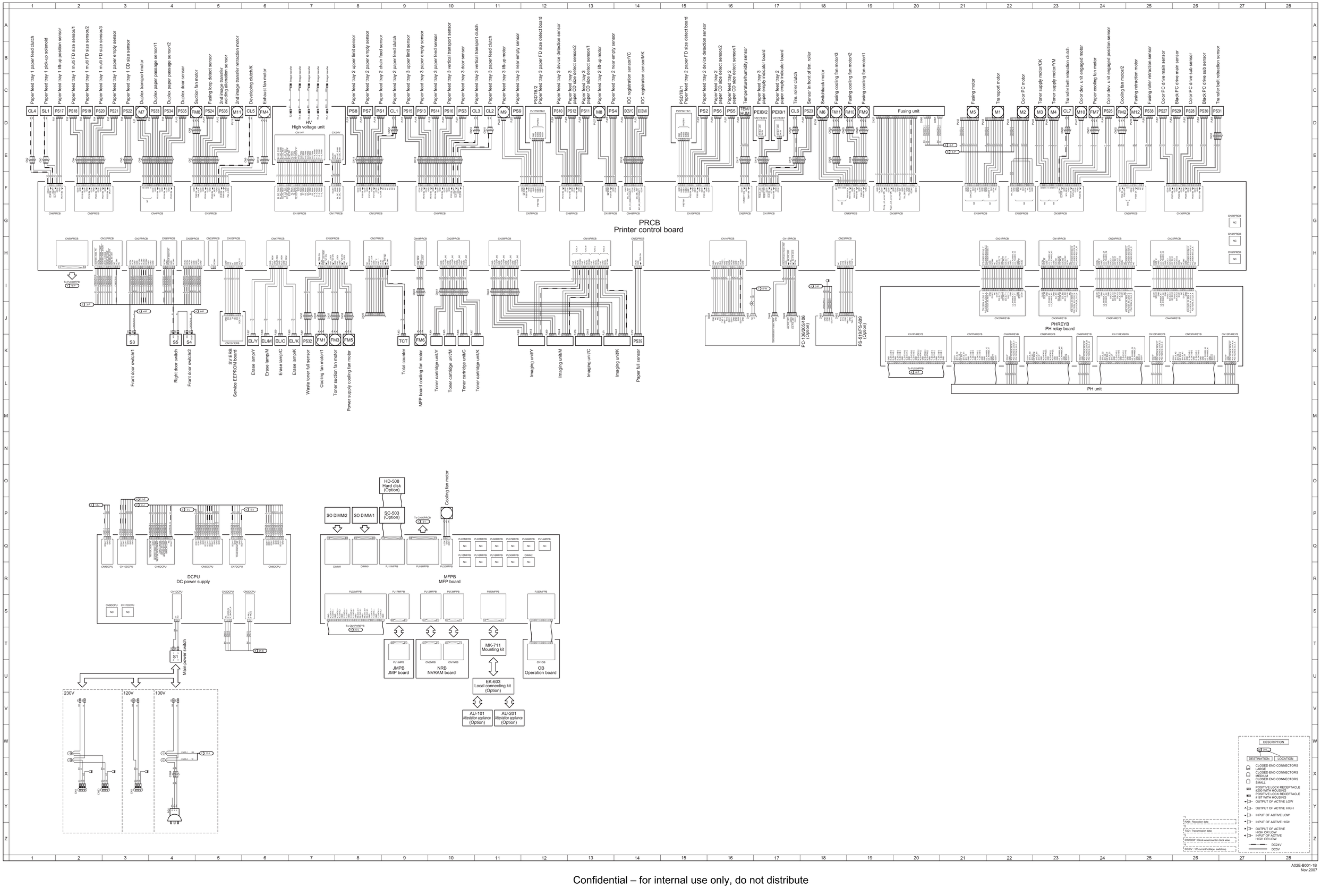
Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Check the motor and sensor connectors for proper connection, and correct as necessary.	—	—
2	Check the connector of motor for proper drive coupling, and correct as necessary.	—	—
3	PS9 I/O sensor check	FSCB CN5FSCB-12 (ON)	FS-609/PK-501 I-8
4	PS17 I/O sensor check	FSCB CN15FSCB-6 (ON)	FS-609/PK-501 I-6
5	M6 operation check when the power switch is turned OFF and ON.	FSCB CN6FSCB-1 to 2	FS-609/PK-501 C-4
6	FSCB replacement	—	—

8.3.13 C1401: Backup RAM malfunction

Relevant electrical parts	
Finisher control board (FSCB)	

Step	Action	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Disconnect and then connect the power cord. Turn OFF the power switch, wait for 10 sec. or more, and turn ON the power switch.	—	—
2	Check the connectors for proper connection on the FSCB.	—	—
3	FSCB replacement	—	—

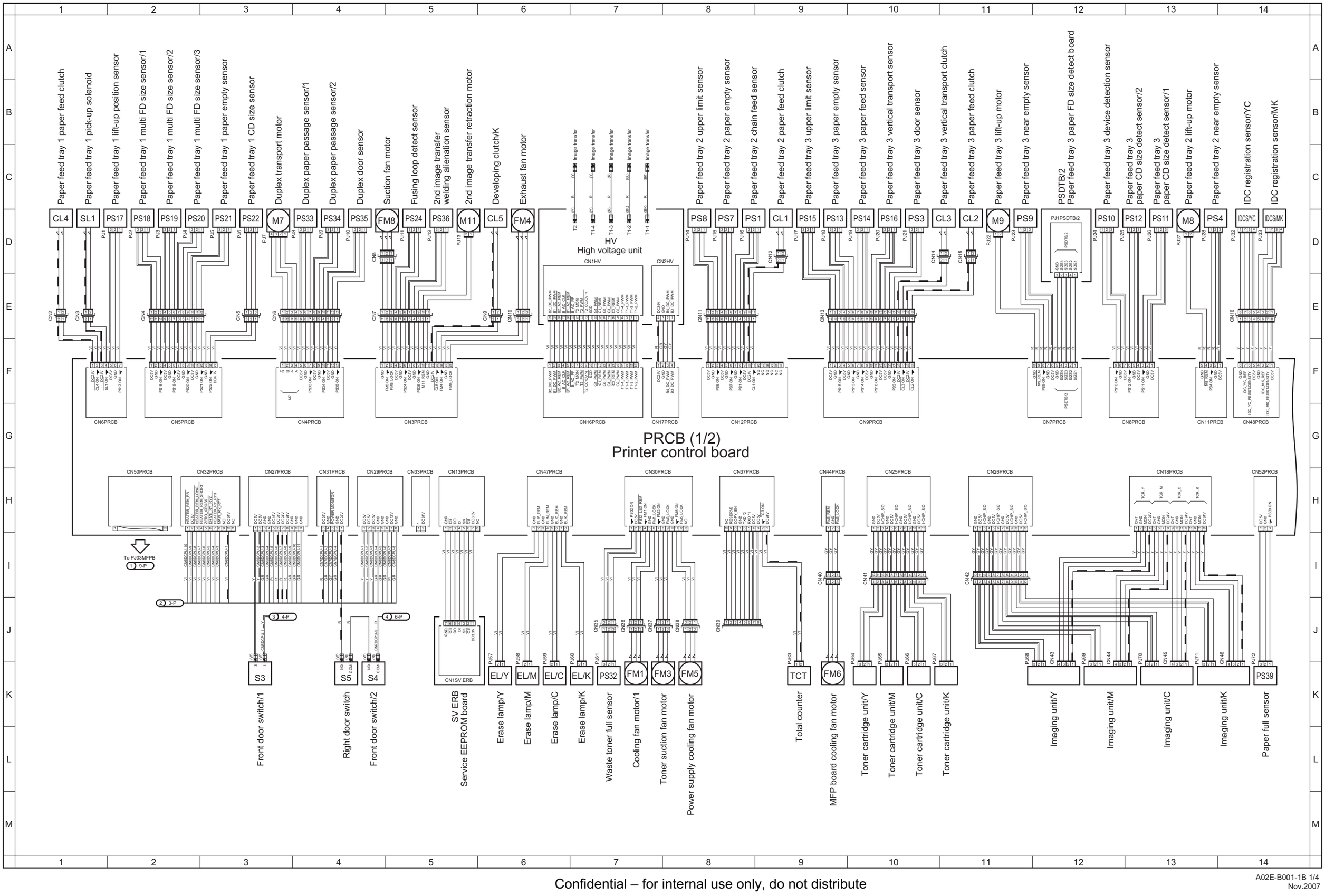
magicolor 8650 Overall wiring diagram



A02E-B001-1B
Nov.2007

Confidential – for internal use only, do not distribute

magicolor 8650 Overall wiring diagram 1/4



Confidential – for internal use only, do not distribute

magicolor 8650 Overall wiring diagram 2/4

PSDTB/1
Paper feed tray 2 paper FD size detect board
Paper feed tray 2 device detection sensor
Paper feed tray 2 paper CD size detect sensor/2
Paper feed tray 2 paper CD size detect sensor/1
Temperature/humidity sensor
Paper feed tray 3 paper empty indicator board
Paper feed tray 2 paper empty indicator board
Tim. roller clutch
Sensor in front of tim. roller
Switchback motor
Fusing cooling fan motor/3
Fusing cooling fan motor/2
Fusing cooling fan motor/1
Fusing unit
Fusing motor
Transport motor
Color PC motor
Toner supply motor/CK
Toner supply motor/YM
Transfer belt retraction clutch
Color dev. unit engaged motor
Paper cooling fan motor
Color dev. unit engaged position sensor
Cooling fan motor/2
Fusing retraction motor
Fusing roller retraction sensor
Color PC drive main sensor
Black PC drive main sensor
Color PC drive sub sensor
Black PC drive sub sensor
Transfer belt retraction sensor

CN10PRCB
CN2PRCB
CN1PRCB
CN40PRCB
CN38PRCB
CN34PRCB
CN35PRCB
CN39PRCB
CN28PRCB
CN36PRCB

PRCB (2/2)
Printer control board

CN24PRCB NC
CN41PRCB NC
CN51PRCB NC

CN14PRCB
CN15PRCB
CN23PRCB
CN21PRCB
CN19PRCB
CN20PRCB
CN22PRCB

PC-106/205/406 (Option)
FS-519/FS-609 (Option)

CN2PHREYB
CN3PHREYB
CN5PHREYB
CN4PHREYB

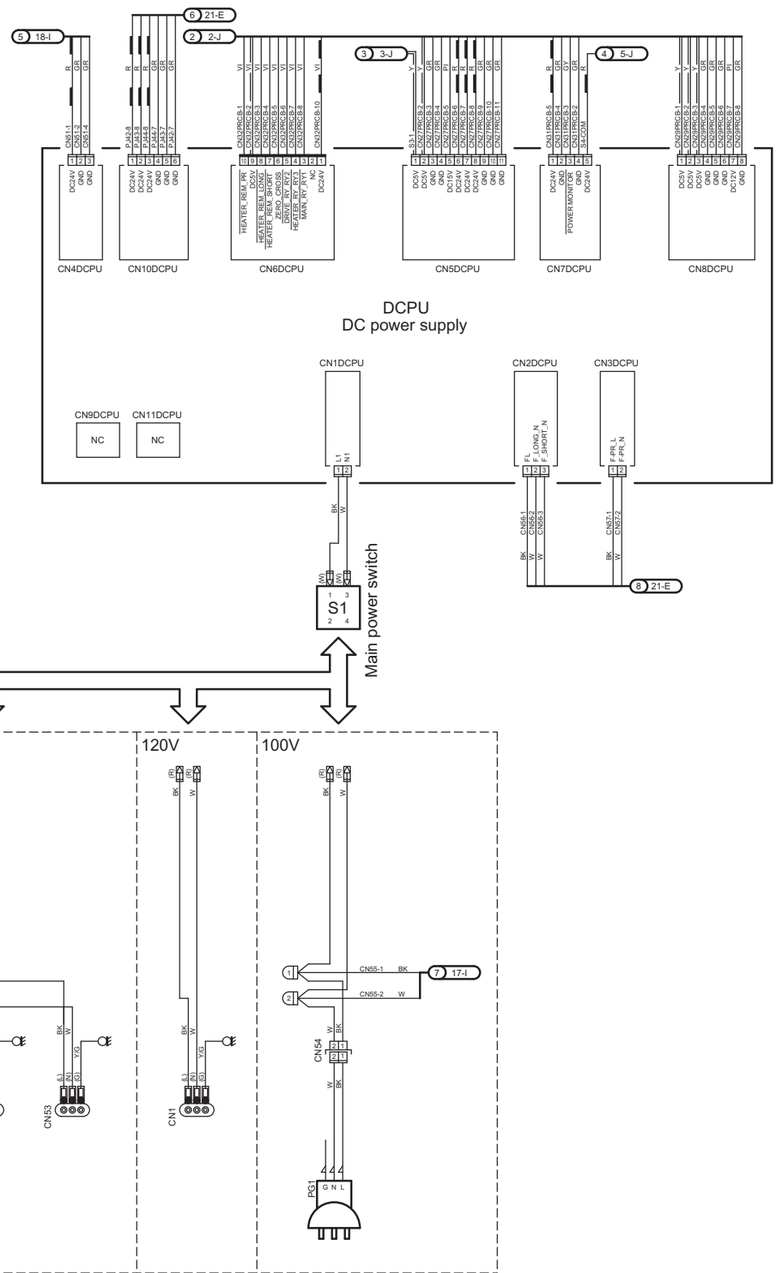
PHREYB
PH relay board

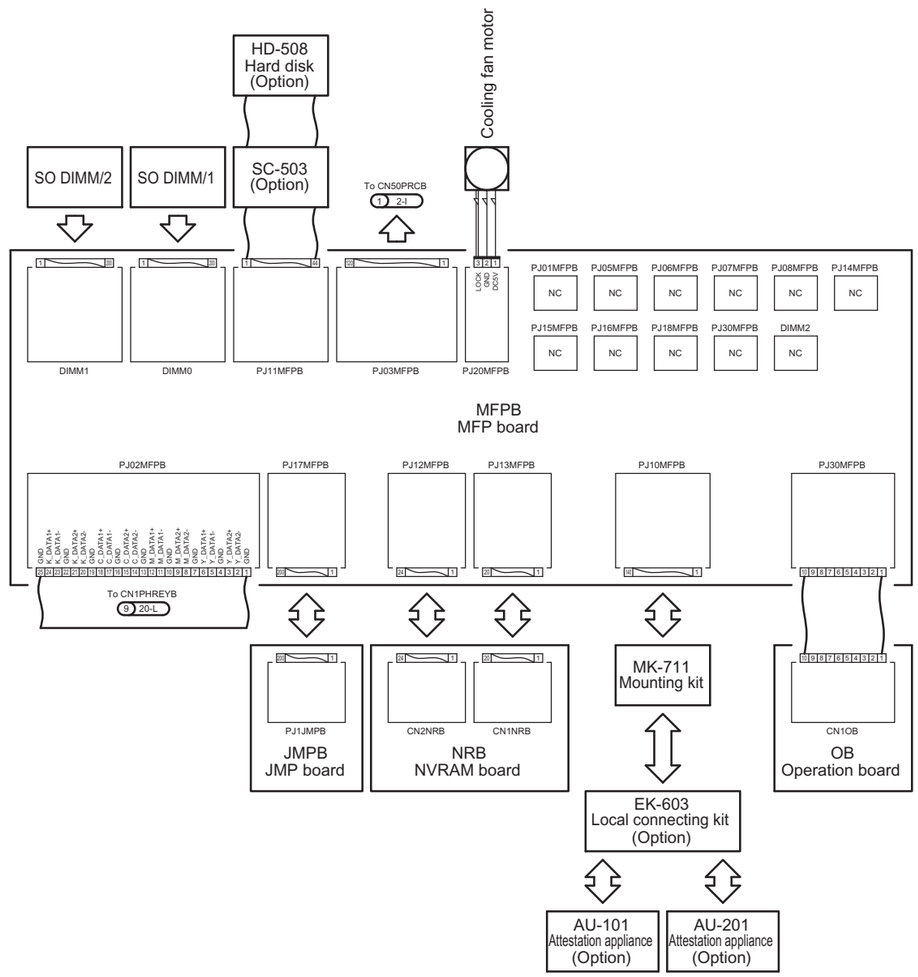
CN1PHREYB
CN7PHREYB
CN6PHREYB
CN9PHREYB
CN8PHREYB
CN11REYB/PH
CN10PHREYB
CN13PHREYB
CN12PHREYB

PH unit

Confidential – for internal use only, do not distribute

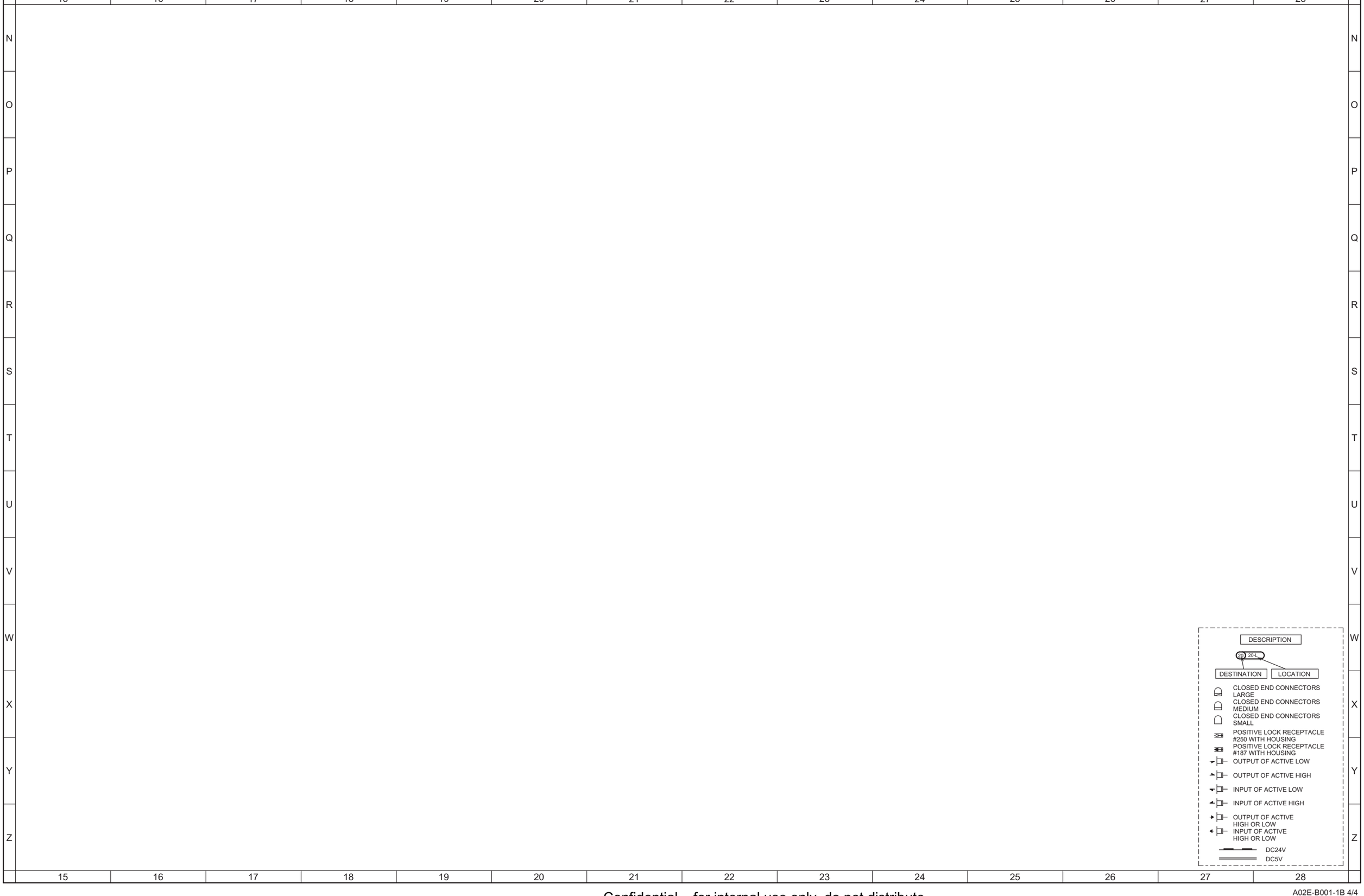
magicolor 8650 Overall wiring diagram 3/4





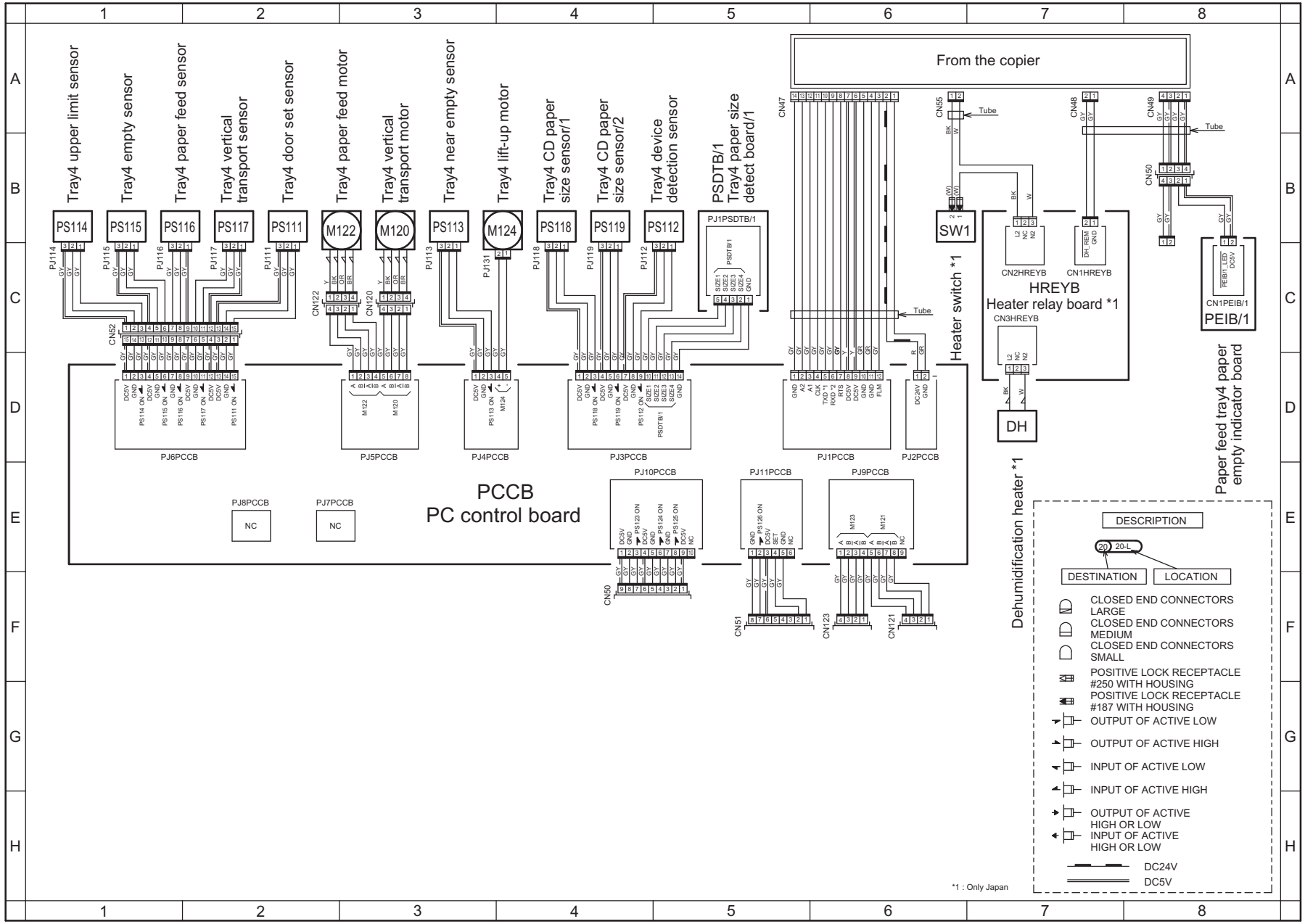
Confidential – for internal use only, do not distribute

magicolor 8650 Overall wiring diagram 4/4



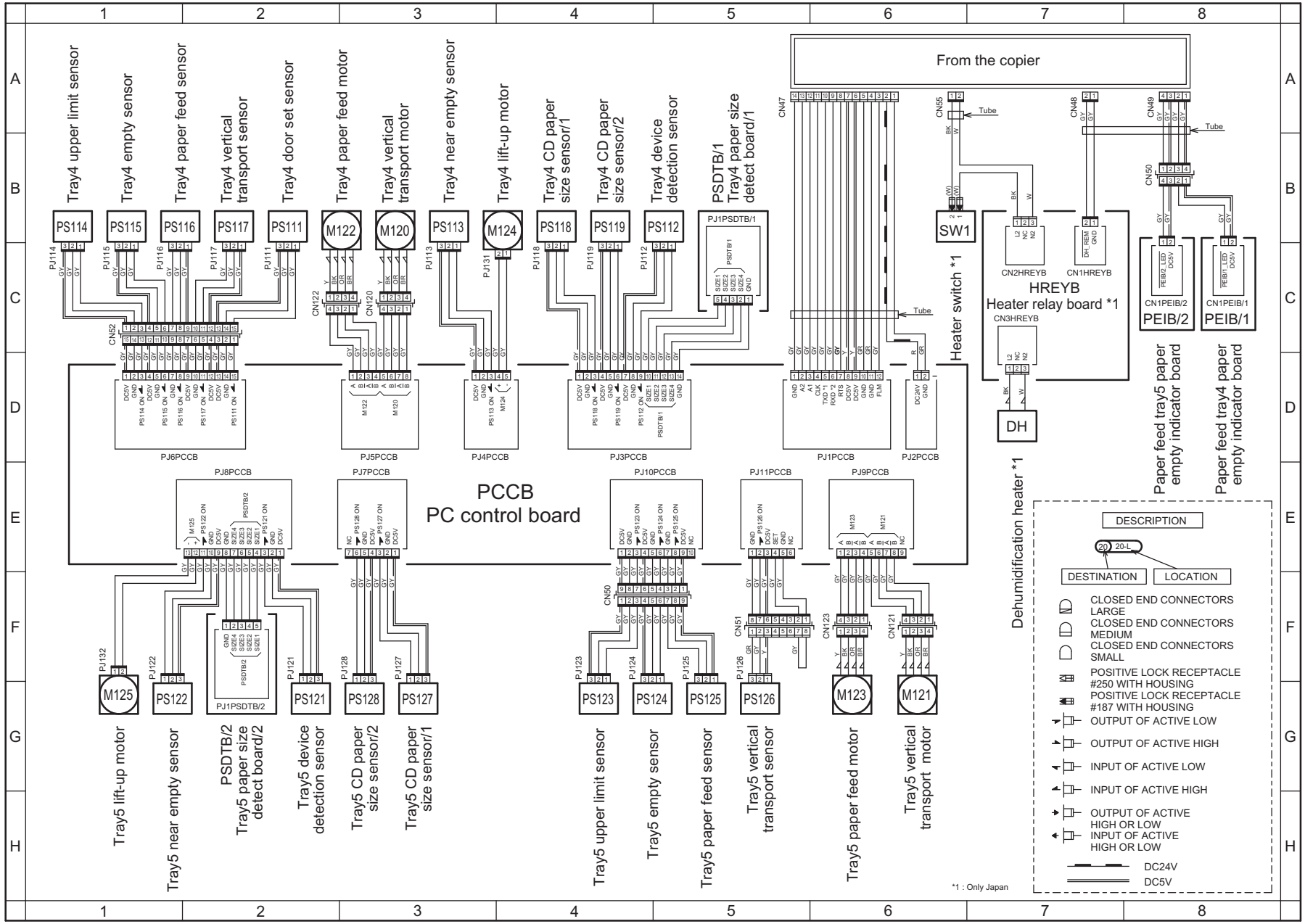
Confidential – for internal use only, do not distribute

PC-106 Overall wiring diagram



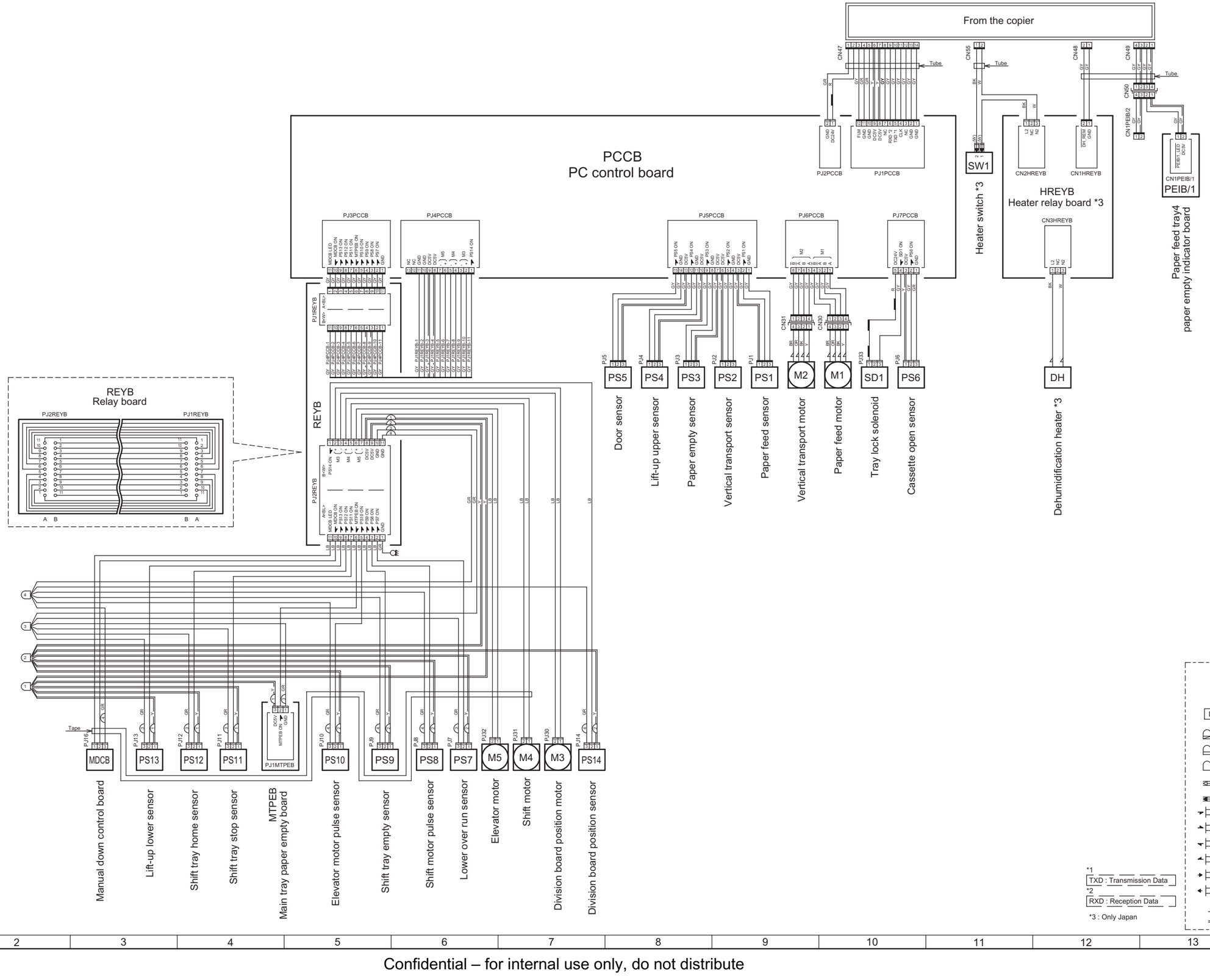
Confidential – for internal use only, do not distribute

PC-205 Overall wiring diagram



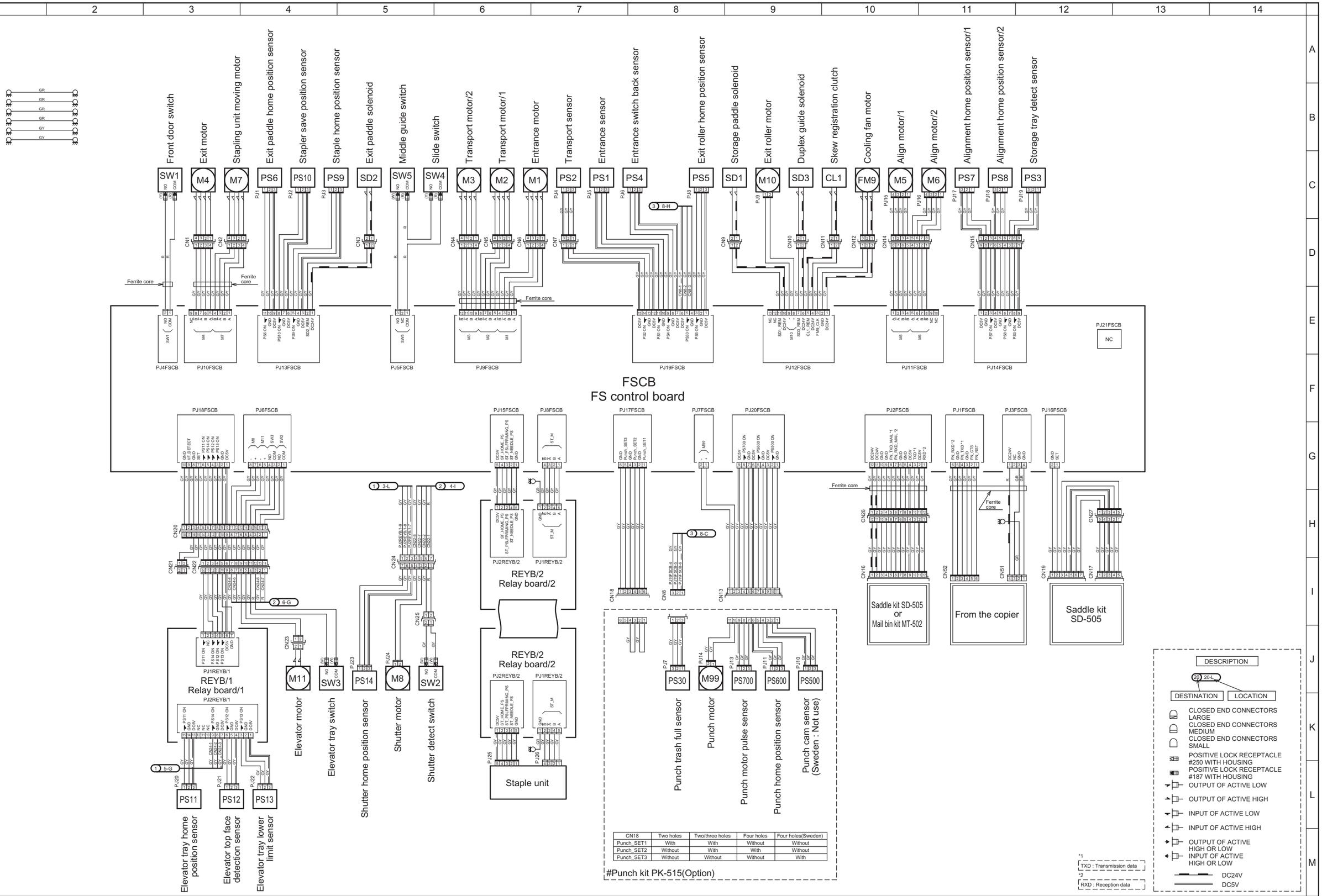
Confidential – for internal use only, do not distribute

PC-406 Overall wiring diagram



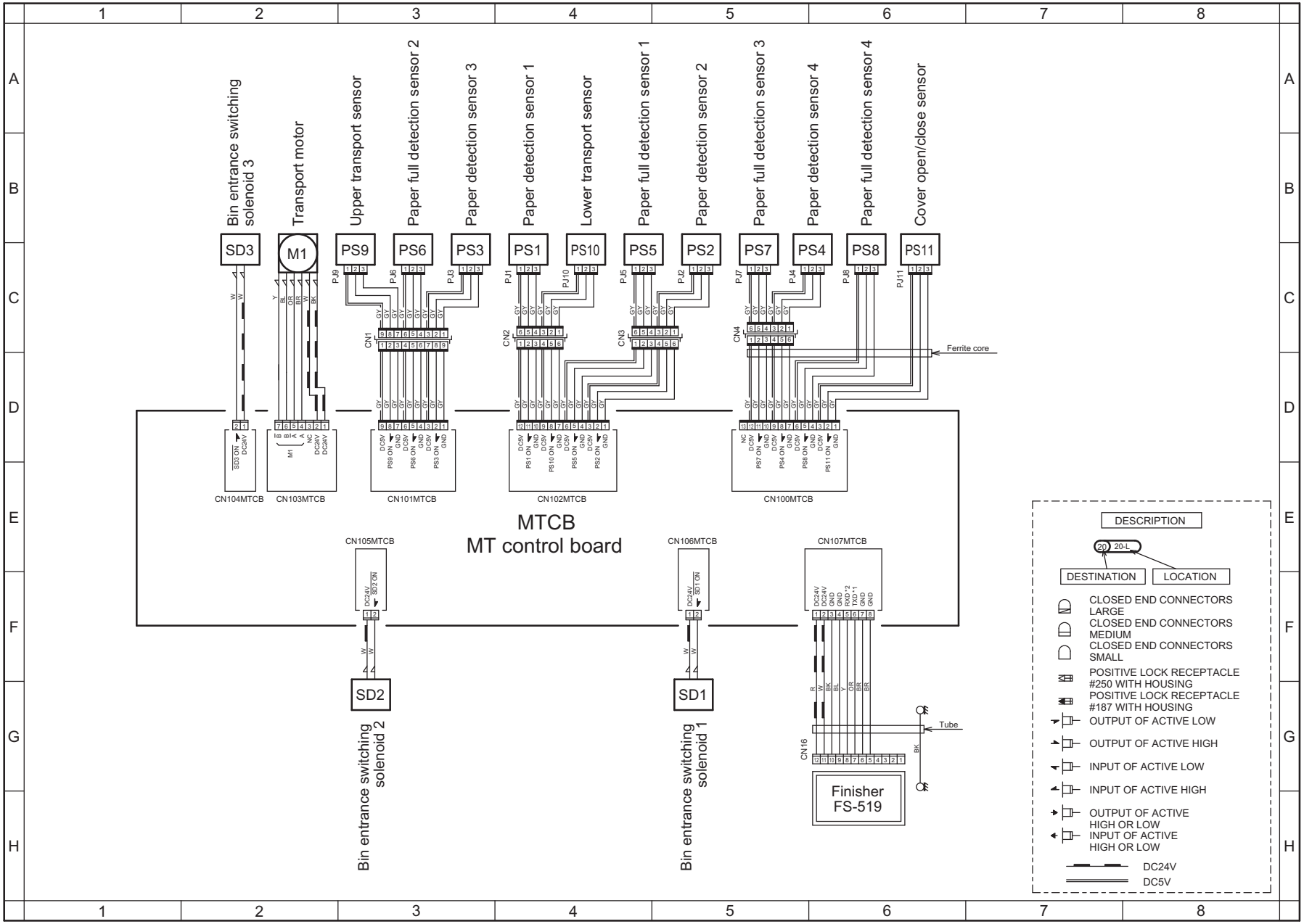
Confidential – for internal use only, do not distribute

FS-519 Overall wiring diagram



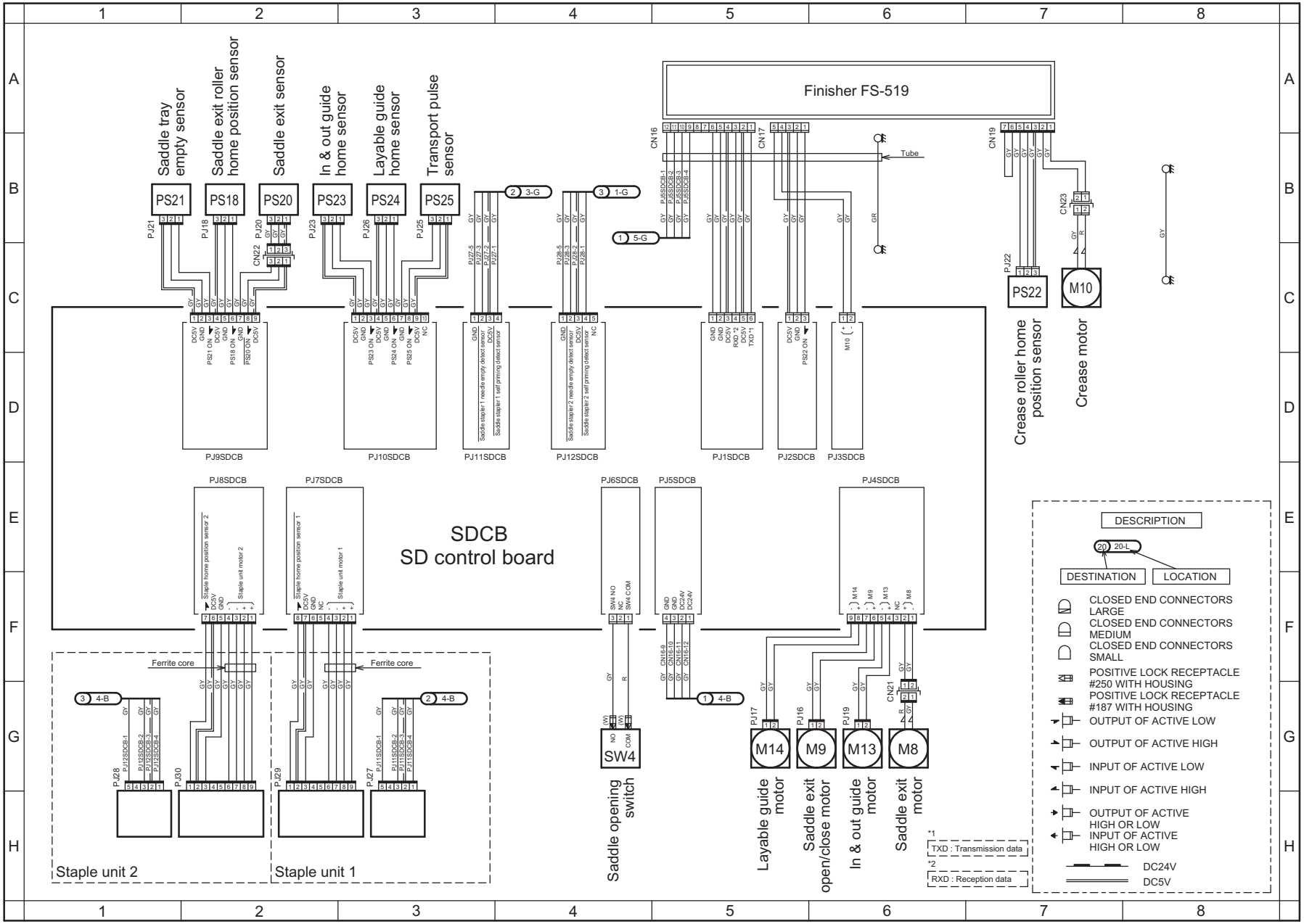
Confidential – for internal use only, do not distribute

MT-502 Overall wiring diagram



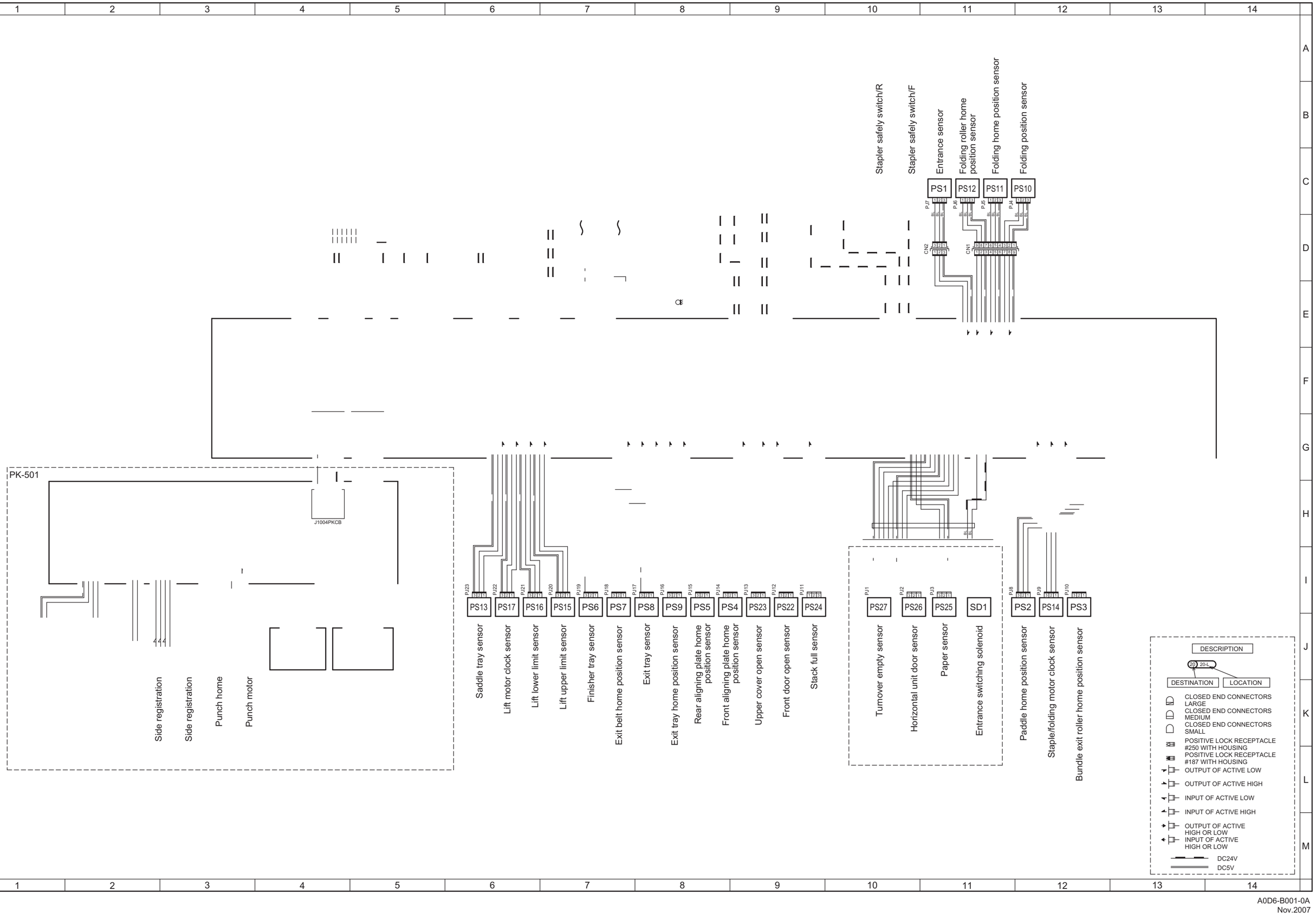
Confidential – for internal use only, do not distribute

SD-505 Overall wiring diagram



Confidential – for internal use only, do not distribute

FS-609/PK-501 Overall wiring diagram



A0D6-B001-0A
Nov.2007



KONICA MINOLTA

© 2007 KONICA MINOLTA BUSINESS TECHNOLOGIES, INC.

Use of this manual should be strictly supervised to avoid disclosure of confidential information.

Printed in Japan
DDA02E-A-FE2