KONICA MINOLTA

SERVICE MANUAL

bizhub 235/215/195

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KONICA MINOLTA, INC.

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Revision history

No.	ID	Title	Ver.	Descriptions of revision	Date
1		Section Q	-	Add to the section Q (PARTS GUIDE MANUAL 1st edition)	2012/02/29
2	D0000734186	I.4.3.1 MARKETING AREA	2	Added the “BRAZIL” to the setting item.	2012/07/03
3	D0000621938	I.4.7.1 PAPER FEED TEST	3	Error correction	2012/07/03
4	D0000762098	I.4.13.3 MEMORY CLEAR	2	Error correction	2012/07/03
5	D0000732491	I.5.2.6 Default soft switch setting for each market area (Market area 5)	2	Change Marketing area: Argentina Soft SW No. #19 Bit No. 1: “0” to “1” Soft SW No. #23 Bit No. 1: “1” to “0”	2012/07/03
6	D0000732496	I.5.2.11 Default soft switch setting for each market area (Market area 10)	2	Change Marketing area: Malaysia Soft SW No.#05 Bit No. 2: “0” to “1”	2012/07/03
7	D0000732498	I.5.2.13 Default soft switch setting for each market area (Market area 12)	2	Added the “Brazil” to the Marketing area.	2012/07/03
8	D0000621800	B.1. NOTATION OF THE CONTENTS	3	Supported OS was changed	2014/04/30
9	D0000621808	C.1.8 Print function	3	Supported OS was changed	2014/04/30
10	D0000621809	C.1.9 Scan function	3	Supported OS was changed	2014/04/30
11	D0000621964	K.2.1.2 Trouble code list	3	Error correction	2014/04/30
12	D0000621967	K.2.3.2 C2351	3	Error correction	2014/04/30
13	D0000727961	K.2.3.8 C5351	4	Error correction	2014/04/30
14	D0000755702	I.4.14.5 PLUG-IN COUNTER	5	The explanation was added.	2015/06/08
15	D0000621970	K.2.3.5 C3451, C3452, C3751, C3752, C3851, C3852	3	Error correction of topic title	2015/06/08

A SAFETY AND IMPORTANT WARNING ITEMS

Read carefully the safety and important warning items described below to understand them before doing service work.

1. 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, INC. (hereafter called KM) strongly recommends that all servicing be performed only by KM-trained service technicians.
- Changes may have been made to this product to improve its performance after this Service Manual was printed. Accordingly, KM 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.

2. DESCRIPTION ITEMS FOR DANGER, WARNING AND CAUTION

2.1 Description items in this Service Manual

In this Service Manual, each of three expressions "⚠DANGER", "⚠WARNING", and "⚠ CAUTION" are defined as follows.
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 and property damage

2.2 Description items for safety and important warning items

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

: Precaution when servicing the product.	 General precaution	 Electric hazard	 High temperature
: Prohibition when servicing the product.	 General prohibition	 Do not touch with wet hand	 Do not disassemble
: Direction when servicing the product.	 General instruction	 Unplug	 Ground/Earth

Illustrations representing the power plug and wall outlet used in the following descriptions are only typical. Their shapes differ depending on the country or region.

3. SAFETY WARNINGS

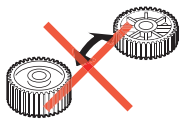
3.1 MODIFICATIONS NOT AUTHORIZED BY KONICA MINOLTA, INC.

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.

3.1.1 Actions requiring special attention

⚠WARNING

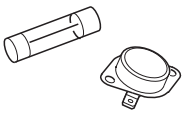
- Do not make any modifications to the product unless otherwise instructed by KM.
- Do not use any part not specified by KM.



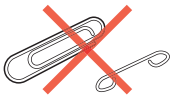
- Do not use any power cord or power plug not specified by KM.



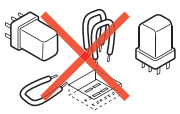
- Use only the protective fuses specified by KM.
  Use of any type of fuse or related part not specified by KM makes safety devices inoperative which may result in a fire from high heat.



- Do not disable fuse functions or use a wire, metal clip, solder, or other conductor in place of the fuse.
  Fire may result from high heat.

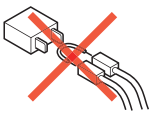


- Do not disable relay functions (for example, inserting a piece of paper between relay contacts to hamper circuit action.)
  Fire may result from high heat.



⚠WARNING

- Do not disable safety functions (for example, interlocks and safety circuits).
  Safety devices become inoperative, resulting in fire from high heat, electric shock, or injury.



3.2 POWER PLUG SELECTION

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

3.2.1 Power Cord Set or Power Plug

⚠WARNING

- Use a 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.



⚠WARNING

- 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.

- The wires in the power supply cord shall be connected to the terminals of the plug in accordance with the following:

Color of the wire		Terminal of the plug
Brown	Black	Marked with "L", "A" or "W" or colored RED
Light Blue	White	Marked with "N" or colored BLACK
Green-and-Yellow		Marked with "E", "PE" or " ⏚ " or colored GREEN or GREEN-AND-YELLOW

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

3.3 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.

3.3.1 Power Supply

(1) Connection to Power Supply

WARNING

- The power outlet should have a capacity of at least the maximum power consumption and be dedicated only to the product.
  The current that can be passed through the outlet is limited and any current exceeding the limit could result in fire.

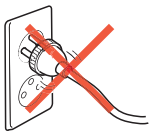


- If the wall outlet has two or more receptacles and the product and another electrical appliance are plugged into this wall outlet, make sure that the total load does not exceed the rating of the wall outlet. The current that can be passed through the outlet is limited and any current exceeding the limit could result in a fire.

- Do not use any conversion plug adapter even if the power plug shape does not match your wall outlet.
  The shapes of the power plug and the wall outlet are set according to the voltage and allowable current. Use of a conversion plug adapter could result in an abnormal voltage or insufficient current capacity, leading to a fire. It may also result in an electric shock due to a grounding failure.
  If the plug shape does not match the wall outlet, request the user to perform power source installation work.

⚠WARNING

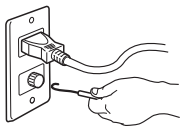
- Make sure the power cord is plugged into the wall outlet securely.
  If the power plug is left loose in the wall outlet, contact failure may occur, leading to abnormal heating of the power plug and a risk of fire.



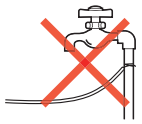
(2) Ground Connection

⚠WARNING

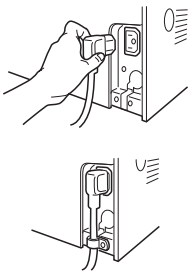
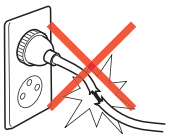
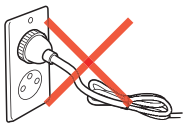
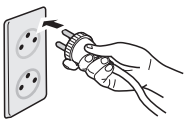
- Check whether the product is grounded properly.
  If current leakage occurs in an ungrounded product, you may suffer electric shock while operating the product.
  Connect power plug to grounded wall outlet.



- Make sure of correct ground connection.
  If the grounding wire is connected to an inappropriate part, there is a risk of explosion or electric shock. Do not connect the grounding wire to any of the following parts:
  a. Gas pipe: Gas explosion or fire may result.
  b. Lightning rod: Risk of electric shock or fire during lightning.
  c. Grounding wire for telephone line: Risk of electric shock or fire during lightning.
  d. Water pipe and faucet: These parts do not serve as a ground connection because of a plastic part that is very often installed midway within the water pipe.

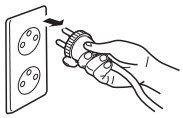


(3) Power Plug and Cord

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 a 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.	
• Do not allow the power cord to be stepped on or pinched. 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 KM. 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.	

⚠WARNING

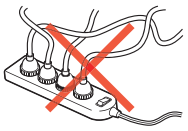
- When unplugging the power cord, grasp the plug, not the cable.
  The cable may be broken, leading to a risk of fire and electric shock.



(4) 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 one that meets the rated current, rated voltage, and the relevant safety standards of the country.
  Current that can be passed through the extension cable is limited and fire may result from the use of an inappropriate type of an extension cable.
  Do not use an extension cable reel with the cable taken up. Fire may result.



3.3.2 Installation Requirements

(1) Prohibited Installation Places

⚠WARNING

- Do not place the product near flammable materials or volatile materials that may catch fire.
  A risk of fire exists.

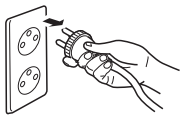


- Do not place the product in a place exposed to water such as rain.
  A risk of fire and electric shock exists.

(2) When not Using the Product for a long time

⚠WARNING

- When the product is not to be used for an extended period of time (for holidays, for example), instruct the user to turn OFF the power switch and unplug the power cord from the power outlet.
  Dust collected around the power plug and outlet may cause fire.



(3) Ventilation

⚠CAUTION

- The product generates ozone gas during operation.
  If the 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 making a lot of copies
  c. When using multiple products at the same time



(4) Stability

⚠ CAUTION

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

3.3.3 After Service

(1) Inspection before Servicing

WARNING

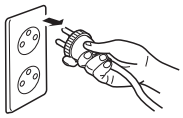


- Before conducting an inspection, read all relevant documentation (service manual, technical notices, etc.) and proceed with the inspection following the prescribed procedure using the recommended personal safety equipment and using only the prescribed tools.
  Do not make any adjustment not described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





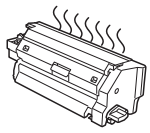
- Before conducting an inspection, be sure to disconnect the power plugs from the Main Body and Accessories (Options).
  When the power plug is inserted into the wall outlet, some units are still powered even if the POWER switch is turned OFF.
  A risk of electric shock exists.



CAUTION



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



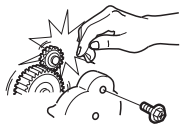
CAUTION

- Do not leave the machine unattended during transportation, installation, and/or inspection.
  If the machine is left unattended, face protrusions toward the wall or take other necessary precautions to prevent a user or other person in the area from stumbling over a protrusion of the machine or being caught by a cable, possibly causing a fall to the floor or other personal injury.

(2) 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.

- If it is absolutely necessary to service the machine with the door open or external covers removed, always be attentive to the motion of the internal parts.
  A normally protected part may cause unexpected hazards.

⚠CAUTION

- Do not keep gazing at a lamp light during the service procedure with the product powered ON.
  Eyestrain may result.

(3) Safety Checkpoints

⚠WARNING

- When a product fault is reported from a user, check parts and repair the fault appropriately with safety in mind.
  A damaged product, personal injury, or fire may result.

- Whenever mounting an option on the machine, be attentive to the motion of the other workers performing the task.
  Another worker may be injured by a pinch point between the machine and the option.

- When mounting an option on the machine, be careful about the clearance between the machine and the option.
  You may be injured with your finger or hand pinched between the machine and the option.

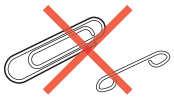
- When removing a part that secures a motor, gear, or other moving part, disassembling a unit, or reinstalling any of such parts and units, be careful about moving parts and use care not to drop any part or unit. During the service procedure, give sufficient support for any heavy unit.
  You may be injured by a falling part or unit.

WARNING

- Check the external covers and frame for possible sharp edges, burrs, and damage.
  They can be a cause of injury during use or servicing.

- When accessing a hard-to-view or narrow spot, be careful about sharp edges and burrs on the frame and parts.
  They may injure your hands or fingers.

- 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 spark bursting into flame.



- Check wiring for pinched and any other damage.
  Current can leak, leading to a risk of electric shock or fire.

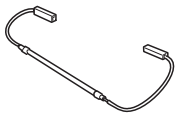
- Check high-voltage cables and sheaths for any damage.
  Damage may lead to product failure and/or the risk of fire.



- Do not disassemble or adjust the write unit (PH unit) incorporating a laser.
  The laser light can enter your eye, leading to a risk of loss of eyesight.

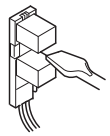
- Do not supply power with the write unit (PH unit) shifted from the specified mounting position.
  The laser light can enter your eye, leading to a risk of loss of eyesight.

- 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.



WARNING

- 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.
  Damage may lead to the risk of electric shock or fire.



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



- Never use any flammable or combustible spray, fluid, gas, or similar substance in and around the product.
  Do not use any flammable or combustible dust spray, in particular, to clean the interior of the product.
  Fire or explosion may result.



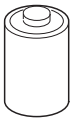
CAUTION

- Carefully remove all toner remnants and dust from electrical parts and electrode units such as a charging corona unit.
  Toner remnants and dust may lead to product failure and/or the risk of fire.

⚠CAUTION

- Check electrode units such as a charging corona unit for deterioration and signs of leakage.
  Damage may lead to product failure and/or the risk of fire.

- When replacing a battery, replace it with a new one as specified.
  Dispose of the used battery as instructed on its packaging or by local ordinance.
  There is a risk of explosion if the battery is replaced with an incorrect type.



(4) Handling of Consumables

⚠WARNING

- For handling of consumables (toner, developer, photoconductor, etc.) and their storage precautions, see MSDS.

(5) Handling of Service Materials

⚠ CAUTION

- Handle with care according to MSDS.
  Use of solvent may involve explosion, fire, or personal injury.



3.4 FUSE

CAUTION Double pole / neutral fusing
ATTENTION Double pôle / fusible sur le neutre.

3.5 Used Batteries Precautions

3.5.1 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.

3.5.2 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.

3.5.3 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.

3.5.4 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.

3.5.5 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.

3.5.6 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.

3.6 Laser Safety

3.6.1 Laser Safety

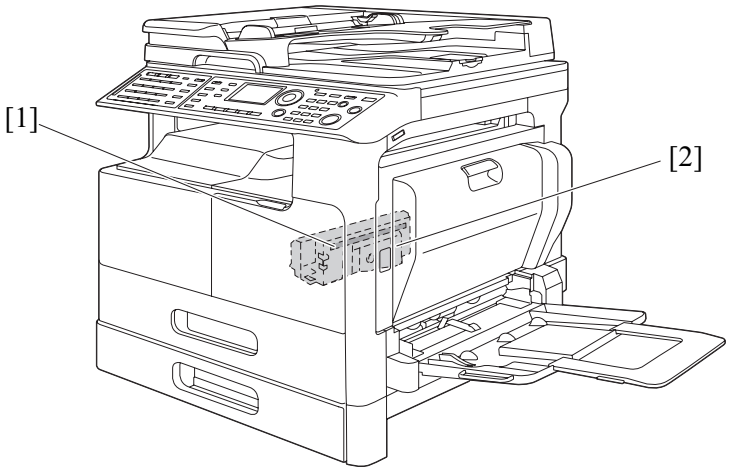
This is a digital machine certified as a Class 1 laser product. There is no possibility of danger from a laser, provided the machine is serviced according to the instruction in this manual.

3.6.2 Internal Laser Radiation

- 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.

semiconductor laser		
Maximum power of the laser diode		7 mW
Maximum average radiation power (*)	bizhub 235/215/195	6.9 µW
Wavelength		770 to 800 nm

*at laser aperture of the Print Head Unit



[1] Laser Aperture of the Print Head Unit	[2] Print Head Unit

(1) 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 “A.3.6.3 Laser Safety Label” 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	7 mW
Wavelength	770 to 800 nm

(2) 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	7 mW
Wavelength	770 to 800 nm

(3) 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	7 mW
bølgelængden	770 to 800 nm

(4) 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	7 mW
aallonpituus	770 to 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	7 mW
våglängden	770 to 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.

(5) Norway

⚠ ADVERSEL

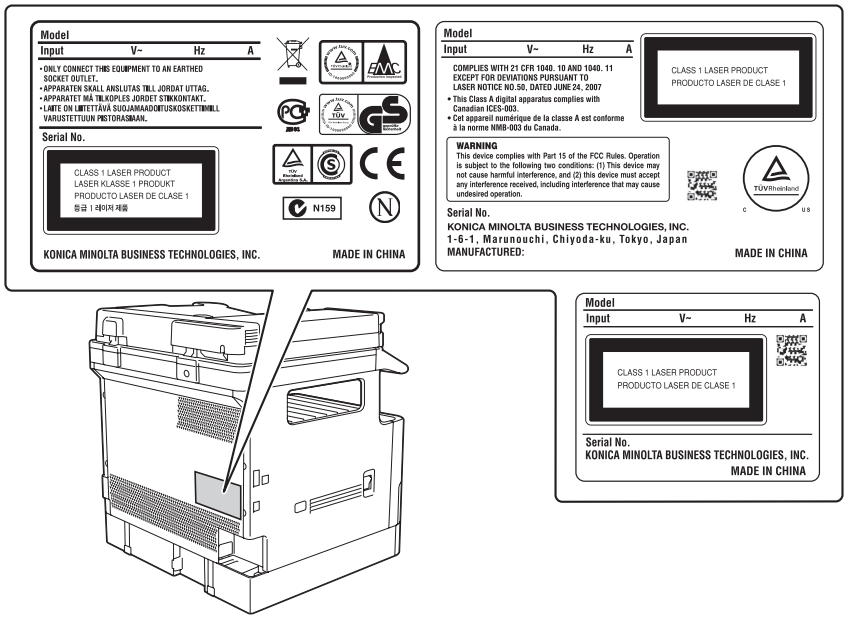
Dersom apparatet brukes på annen måte enn spesifisert i denne bruksanvisning, kan brukeren utsettes for unsynlig laserstrålning, som overskrider grensen for laser klass 1.

halvleder laser	
Maksimal effekt till laserdiode	7 mW

halvleder laser	
bølgelengde	770 to 800 nm

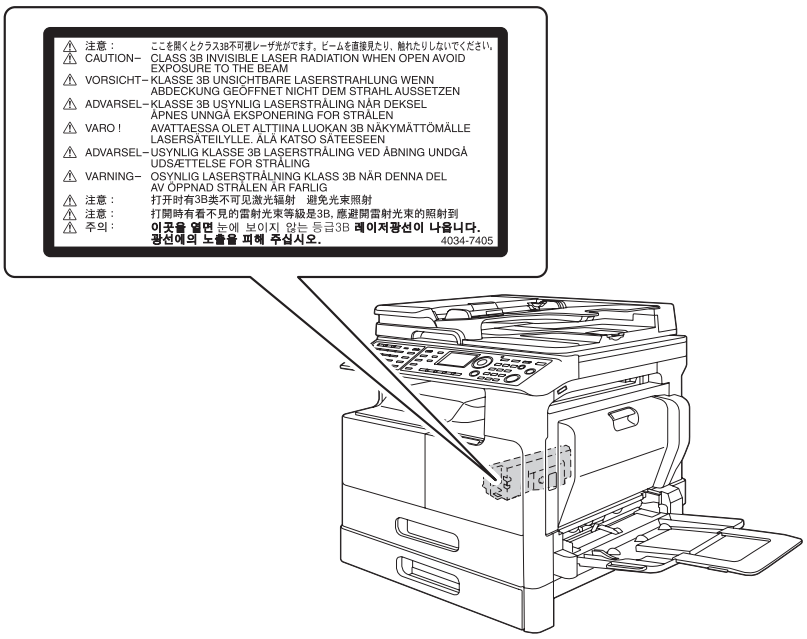
3.6.3 Laser Safety Label

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



3.6.4 Laser Caution Label

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



3.6.5 PRECAUTIONS FOR HANDLING THE LASER EQUIPMENT

- Be sure to unplug the power cord whenever performing a service job in the laser beam path (around the PH unit).
- If it is absolutely unavoidable to perform a service job with the power cord plugged in, strictly observe the following precautions:
  1. Before starting the service job, take off your watch, ring, and other reflective articles and be sure to wear laser protective goggles.
  2. Keep other personnel away from the work site.

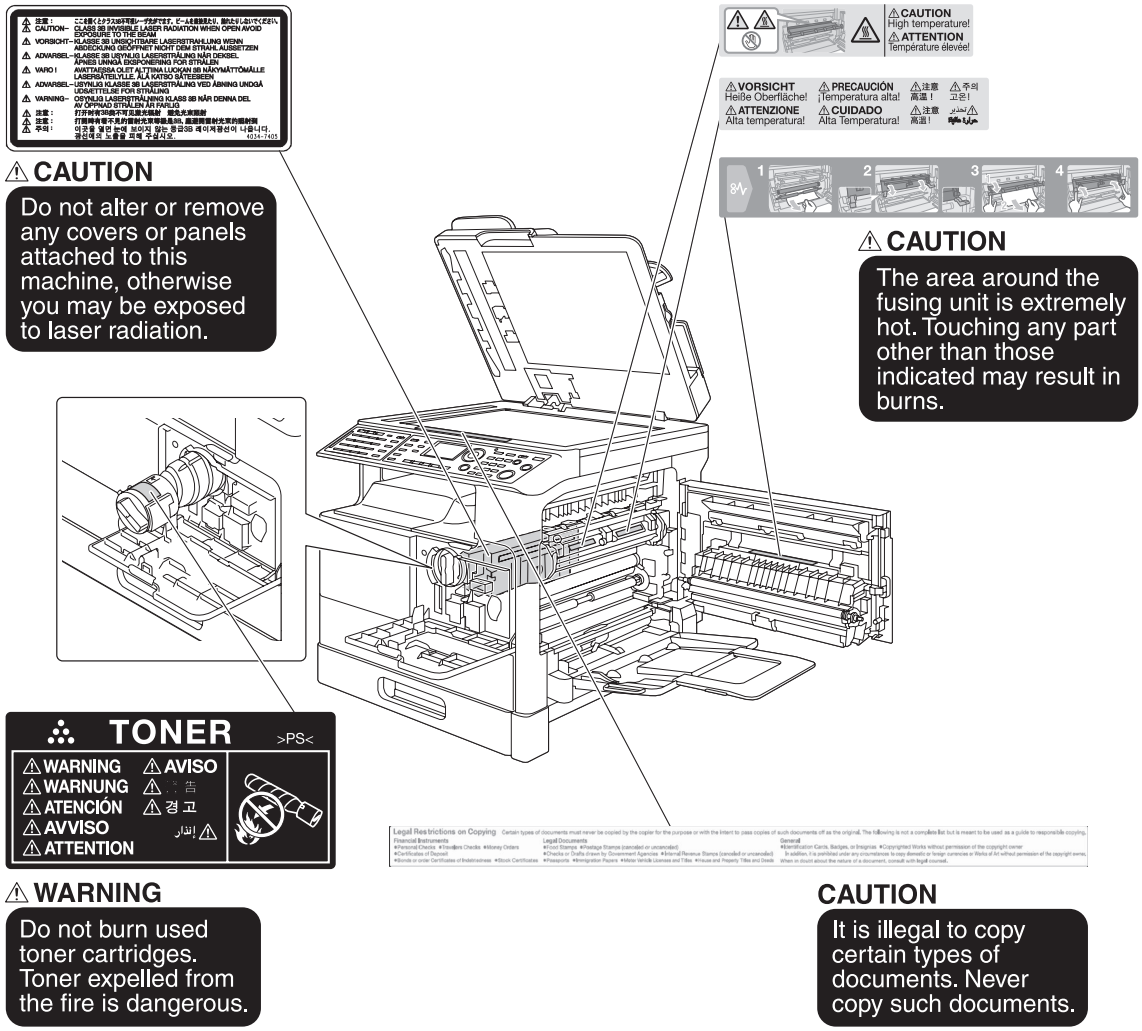
3. Do not bring any highly reflective tool into the laser beam path during the service procedure.

4. WARNING INDICATIONS ON THE MACHINE

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

4.1 Warning indications inside the machine

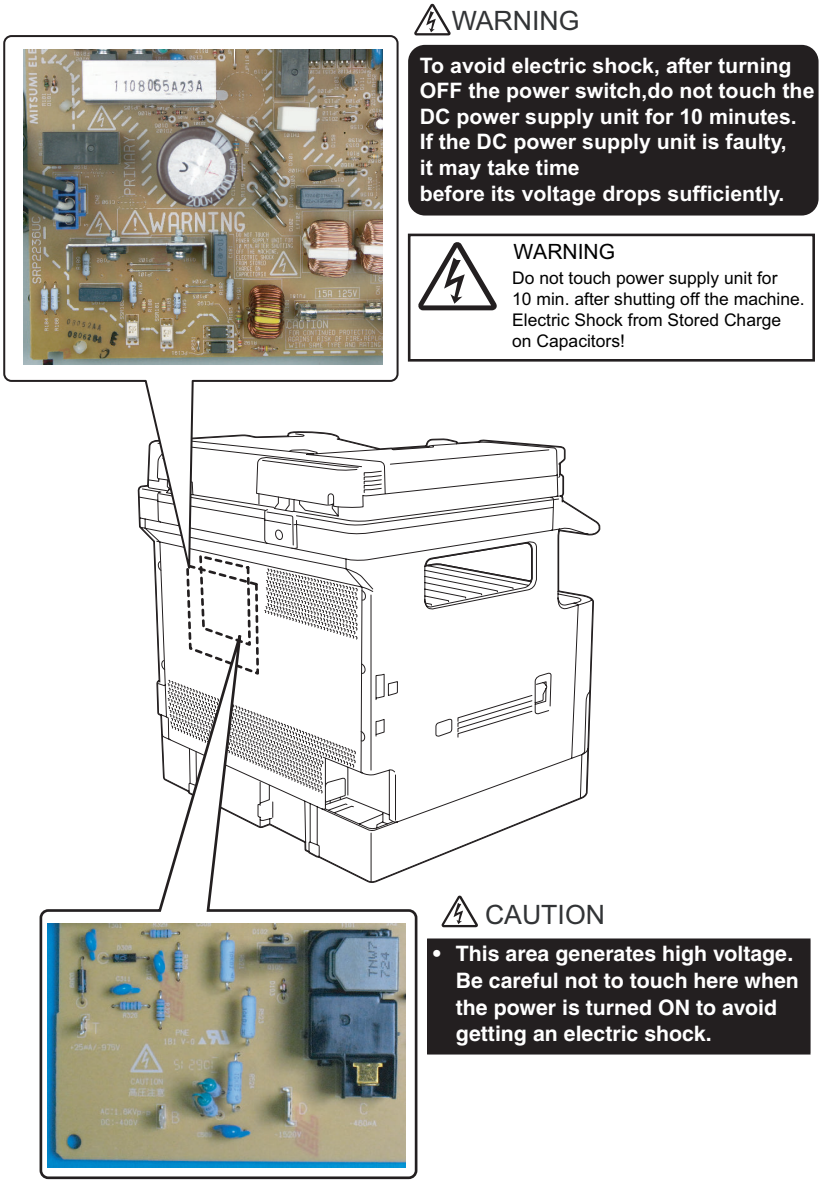
⚠CAUTION
You may be burned or injured if you touch any area that you are advised not to touch by any caution label. Do not remove caution labels. If any caution label has come off or soiled and therefore the caution cannot be read, contact our service office.



4.2 Warning indications on the boards

⚠WARNING

- To avoid electric shock, after turning OFF the power switch, do not touch the DC power supply unit for 10 minutes.
  If the DC power supply unit is faulty, it may take time before its voltage drops sufficiently.



5. 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 KM 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 KM.
4. For reports and measures concerning serious accidents, follow the regulations specified by every distributor.

B NOTATION OF THE CONTENTS

1. NOTATION OF THE CONTENTS

1.1 Product name

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

(1)	bizhub 235/215/195	Main body
(2)	Microsoft Windows Vista:	Windows Vista
	Microsoft Windows 7:	Windows 7
	Microsoft Windows 8:	Windows 8
	Microsoft Windows 8.1:	Windows 8.1
	Microsoft Windows Server 2003	Windows Server 2003
	Microsoft Windows Server 2008	Windows Server 2008
	Microsoft Windows Server 2012	Windows Server 2012

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

Windows Vista/7/8/8.1

Windows Server 2008/Server 2003

1.2 Brand name

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

1.3 Paper feed 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.

<Example>

Paper size	Feed direction	Notation
A4	Transverse feed	A4
	Longitudinal feed	A4S
A3	Longitudinal feed	A3

C PRODUCT SPECIFICATIONS

1. bizhub 235/215/195

1.1 Type

Type	Scanner/printer integrated desktop type
Scanning resolution	600 x 600 dpi
Platen	Stationary
Original scanning	CIS module optical scanning system
Scanning light source	LED
Printing process	Laser electrostatic printing system
PC drum type	OPC drum: 9ST
Paper feeding system	Tray 1: Separator pad system Multi bypass tray: Small roller separation system with torque limiter
Exposure system	LD exposing system/polygon mirror scan system
Exposure resolution	600 x 600 dpi
Developing system	Dry 2 components developing method, HMT developing system
Charging system	DC comb electrode scorotron system
Neutralizing system	Non-erase
Image transfer system	Roller image transfer system
Paper separating system	Neutralization needle bias superimposed voltage, separating claws and combination of curvature system
Fusing system	Roller fusing system
Heating system	Halogen lamp

1.2 Functions

Types of original	Sheets, books, and three-dimensional objects		
Max. original size	A3 or 11 x 17		
Max. original weight	2 kg		
Multiple copies	1 to 999		
Warm-up time	15 sec. or less (110 V/120 - 127 V/220 - 240 V) (when the power switch is turned ON from a stabilized state at ambient temperature of 23°C / 73.4°F and rated source voltage)		
Image loss	Leading edge: 4 mm (3/16 inch), trailing edge: 4 mm (3/16 inch), Rear edge: 4 mm (3/16 inch), front edge: 4 mm (3/16 inch)		
First copy time (A4, 8 $^1/_2$ x 11)	6.5 sec. or less (Values in conditions of paper fed from tray 1 at a room temperature of 23°C and with a rated power source)		
Processing speed	100 mm/s		
Copying/printing speed for multi-copy cycle (A4, 8 $^1/_2$ x 11)	bizhub 235		23 sheets/min. (Plain paper) 7 sheets/min. (Card1/2)
	bizhub 215		21 sheets/min. (Plain paper) 7 sheets/min. (Card1/2)
	bizhub 195		19 sheets/min. (Plain paper) 7 sheets/min. (Card1/2)
Fixed zoom ratios	Europe, China		Full size: x 1.00 Reduction: x 0.25, x 0.50, x 0.70, x 0.81 Enlargement: x 1.15, x 1.41, x 2.00, x 4.00
	Latin America areas for inch		Full size: x 1.00 Reduction: x 0.25, x 0.50, x 0.64, x 0.78 Enlargement: x 1.21, x 1.29, x 2.00, x 4.00
	Latin America area for metric		Full size: x 1.00 Reduction: x 0.25, x 0.50, x 0.70, x 0.78 Enlargement: x 1.15, x 1.41, x 2.00, x 4.00
	Taiwan		Full size: x 1.00 Reduction: x0.25, x 0.50, x 0.70, x 0.78 Enlargement: x 1.15, x 1.41, x 2.00, x 4.00
Variable zoom ratios	x 0.25 to x 4.00 (in 0.01 increments)		
Paper size used	Tray 1	Metric: A3, B4, A4S, B5S, A4, A5S, B5, B6S, A5, A6S, 16K, 16KS, 8K Inch: 11 x 17, 8 1/2 x 14, 8 1/2 x 11S, 7 1/4 x 10 1/2S, 8 1/2 x 11, 5 1/2 x 8 1/2S, 7 1/4 x 10 1/2, 5 1/2 x 8 1/2 Foolscap: 8 1/2 x 13 1/2, 8 1/2 x 13, 8 1/4 x 13, 8 1/8 x 13 1/4, 8 x 13, 8 13/20 x 13	
	Multi bypass tray		
Copy exit tray capacity	250 sheets		

1.3 Paper

		Tray 1	Multi bypass tray (MB-505)	Tray 2 to 5 (PF-507)
Type	Plain paper (64 to 90 g/m^2 / 17 to 24 lb)	250 sheets	100 sheets	250 sheets
	Card 1 (91 to 120 g/m^2 / 24.25 to 31.75 lb)	20 sheets	20 sheets	-
	Card 2 (121 to 157 g/m^2 / 32.25 to 41.75 lb)	20 sheets	20 sheets	-
	OHP film	10 sheets	10 sheets	-
	Envelopes	10 sheets	10 sheets	
	Postcards	-	-	-
	Labels	-	-	-
Size	Width	Metric: 90 to 297 mm Inch: 3 $^9/_{16}$ to 11 $^{11}/_{16}$ inch		Metric: 182 to 297 mm Inch: 7 $^1/_6$ to 11 $^{11}/_{16}$ inch
	Length	Metric: 139.7 to 431.8 mm Inch: 5 $^1/_2$ to 17 inch		Metric: 182 to 431.8 mm Inch: 7 $^1/_6$ to 17 inch

1.4 Materials

Parts name	Number of prints	Type name
Toner bottle	5,400 prints *1	TN119
	12,000 prints *1	TN118/TN119H *2
Developer	55,000 prints *1	DV116
Drum	55,000 prints *1	DR114

*1: Specification value
*2: TN119H is only for China.

1.5 Print volume

1.5.1 bizhub 215

Area	Average	Maximum
China	3,500 sheets/month	15,000 sheets/month
Europe	3,000 sheets/month	15,000 sheets/month
Asia/Pacific	2,500 sheets/month	15,000 sheets/month
Mexico	3,000 sheets/month	15,000 sheets/month

1.5.2 bizhub 195

Area	Average	Maximum
China	2,500 sheets/month	12,000 sheets/month
Asia/Pacific	1,500 sheets/month	12,000 sheets/month
Mexico	2,000 sheets/month	12,000 sheets/month

1.6 Machine specifications

Power requirements	Voltage	AC110 V, AC120-127V, AC220-240V	
	Current	110 V	12.0A
		120 V	11.0A
		127 V	11.0A
		230 V	6.0A
	Frequency	50/60 Hz	
Max power consumption	110V: 1,300W		
	120V: 1,300W		
	127V: 1,300W		
	230V: 1,300W		
Dimensions	Main body only	570 mm (W) x 570 mm (D) x 458mm (H) *1 22.4 inch (W) x 22.4 inch (D) x 18 inch (H) *1	
	Main body + PF-507	570 mm (W) x 570 mm (D) x 542mm (H) *1 22.4 inch (W) x 22.4 inch (D) x 20.6 inch (H) *1	
	Main body + MB-505	607 mm (W) x 570 mm (D) x 458mm (H) *1 23.9 inch (W) x 22.4 inch (D) x 18 inch (H) *1	

	Main body + MB-505+DF-625	607 mm (W) x 579 mm (D) x 538mm (H) *2 23.9 inch (W) x 22.8 inch (D) x 21.2inch (H) *2
Space requirements	1,109 mm (W) x 1,038 mm (D) x 1323 mm (H) or 43.7 inch (W) x 40.9 inch (D) x 52.1 inch (H) *3	
Weight	Approx. 26.5 kg /58.4 lb (Main body only: without toner bottle, developer, Original cover and Multi bypass unit)	

*1: Height up to the original glass.
*2: When the multi bypass tray MB-505 is mounted.
*3: Space requirements is the necessary area when DF-625, PF-507, MB-505 and AD-509 are mounted and bypass tray is fully opened.

1.7 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)

1.8 Print function

Type	Built-in printer controller
RAM	128 MB (shared with the copier)
Interface	USB2.0, Ethernet 10Base-T/100Base-TX (option)
Printer language	GDI, PCL(Option)
Print resolution	GDI: 600 x 600 dpi, PCL: 600 dpi x 600 dpi (1200dpi x 600dpi)
Supported OS for printer driver	Windows Vista Business * Windows Vista Enterprise * Windows Vista Home Basic * Windows Vista Home Premium * Windows Vista Ultimate * Windows 7 Home Premium/Professional/Ultimate * Windows 8 * Windows 8 Pro* Windows 8.1 * Windows 8.1 Pro* Windows Server 2003, Standard Edition (SP1 or later) Windows Server 2003, Enterprise Edition (SP1 or later) Windows Server 2003 R2, Standard Edition Windows Server 2003 R2, Enterprise Edition Windows Server 2003, Standard x64 Edition Windows Server 2003, Enterprise x64 Edition Windows Server 2003 R2, Standard x64 Edition Windows Server 2003 R2, Enterprise x64 Edition Windows Server 2008 Standard * Windows Server 2008 Enterprise * Windows Server 2008 R2 Standard Windows Server 2008 R2 Enterprise Windows Server 2012 Standard Windows Server 2012 Datacenter Windows Server 2012 Essentials Windows Server 2012 R2 Standard Windows Server 2012 R2 Datacenter Windows Server 2012 R2 Essentials * 32 bits (x86)/64 bits (x64) environment are supported

1.9 Scan function

Scanner	Scannable range	297 mm x 431.8 mm
	Scanning mode	Binary/Grayscale/Color
	Scanning resolution	150/300/600 dpi
TWAIN/WIA	Driver	TWAIN/WIA Driver

	Supported OS	Windows Vista Business * Windows Vista Enterprise * Windows Vista Home Basic * Windows Vista Home Premium * Windows Vista Ultimate * Windows 7 Home Premium/Professional/Ultimate * Windows 8 * Windows 8 Pro* Windows 8.1 * Windows 8.1 Pro* Windows Server 2003, Standard Edition (SP1 or later) Windows Server 2003, Enterprise Edition (SP1 or later) Windows Server 2003 R2, Standard Edition Windows Server 2003 R2, Enterprise Edition Windows Server 2003, Standard x64 Edition Windows Server 2003, Enterprise x64 Edition Windows Server 2003 R2, Standard x64 Edition Windows Server 2003 R2, Enterprise x64 Edition Windows Server 2008 Standard * Windows Server 2008 Enterprise * Windows Server 2008 R2 Standard Windows Server 2008 R2 Enterprise Windows Server 2012 Standard Windows Server 2012 Datacenter Windows Server 2012 Essentials Windows Server 2012 R2 Standard Windows Server 2012 R2 Datacenter Windows Server 2012 R2 Essentials * 32 bits (x86)/64 bits (x64) environment are supported

2. AD-509

2.1 Type

Name	Automatic Duplex Unit (AD-509)
Type	Switchback and Circulating Duplex Unit
Installation	Mounted on the right side door of main unit
Document Alignment	Center

2.2 Paper type

Paper Type	Plain paper (64 to 90 g/m^2 / 17 to 24 lb)	
Paper Size	Width	Metric: 139.7 to 297 mm Inch: 5 $^1/_2$ to 11 $^{11}/_{16}$ inch
	Length	Metric: 139.7 to 431.8 mm Inch: 5 $^1/_2$ to 17 inch

2.3 Machine specifications

Power Requirements	DC 24 V (supplied from the main body)
	DC 3.3 V (supplied from the main body)
Dimensions *1	Metric: 386 mm (W) x 107 mm (D) x 225 mm (H) Inch: 15 $^3/_{16}$ inch (W) x 4 $^3/_{16}$ inch (D) x 8 $^7/_8$ inch (H)
Weight *1	1.5 kg (3 $^5/_{16}$ lb)

- *1: Values given only for reference when the Duplex Unit is demounted from the machine, since it is standard on the machine.

2.4 Operating environment

- Conforms to the operating environment of the main body.

NOTE

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

3. DF-625

3.1 Type

Name	Reverse Automatic Document Feeder	
Type	Feeding order	Forward
	Feed section	Paper feed from top of stack
	Turnover	Switch back system
	Paper Exit	Straight exit system
Installation	Screw cramp to the main unit	
Document Alignment	Center	
Document Loading	Left image side up	

3.2 Functions

Original feed mode	1-sided original, 2-sided original, mixed original, FAX mode
Scanning speed (A4 or Letter)	Binary: 46 pages/min. (150 x 150 dpi, 300 x300 dpi), 23 pages/min. (600 x 600 dpi) Grayscale: 38 pages/min. (150 x 150 dpi), 16 pages (600 x 600 dpi) Color: 20 pages/min. (150 x 150 dpi), 8 pages/min. (600 x 600 dpi)

3.3 Paper type

Original type	Standard Mode (Plain Paper)	1-Sided Mode: 35 to 128 g/m2 (9.25 to 34 lb)
		2-Sided Mode: 50 to 128 g/m2 (13.25 to 34 lb)
	Mixed Original Detection Mode (Plain Paper)	1-Sided Mode: 50 to 128 g/m2 (13.25 to 34 lb)
	FAX Mode (Plain Paper)	1-Sided Mode: 35 to 128 g/m2 (9.25 to 34 lb)
		2-Sided Mode: 50 to 128 g/m2 (13.25 to 34 lb)
Original Size	Standard Mode (Plain Paper)	• Metric: A5 to A3 • Inch: 5 $^{1}/_{2}$ × 8 $^{1}/_{2}$S to 11 × 17
	Mixed Original Detection Mode (Plain Paper)	Refer to the C.3.6 Mixed original feed chart.
	FAX Mode (Plain Paper)	• Metric: A5 to A3 • Inch: 5 $^{1}/_{2}$ × 8 $^{1}/_{2}$S to 11 × 17 • Width: 139.7 mm to 297 mm • Length (1-Sided Mode): 139.7 mm to 1,000 mm • Length (2-Sided Mode): 139.7 mm to 431.8 mm
Original loading capacity	Max. 70 sheets (80 g/m^2 / 21 $^{1}/_{4}$ lb)	

3.4 Paper feed prohibited originals

- If fed, trouble occurrence will be highly possible.

Type of Original	Possible Trouble
Original that is stapled or clipped.	Feed failure, damage to the original, or drive failure due to clip clogging
Book original	Feed failure, damage to the original, or drive failure
Original weighing less than 35 g/m2 or 129 g/m2 or more	Feed failure
Torn original	Feed failure, damaged sheet
Highly curled original (15 mm or more)	Original misfeed due to dog-ear or skew
OHP transparencies	Feed failure
Label Sheet	Feed failure
Offset master	Feed failure
Photographic paper or Glossy original such as gloss-coated paper	Feed failure
Sheets clipped or notched	Damaged sheet
Sheets patched	Patched part folded or torn sheet, Sheets misfed

3.5 Paper feed not guaranteed originals

- If fed, paper feed will be possible to some extent but trouble occurrence will be possible.

Type of Original	Possible Trouble
Sheets lightly curled (Curled amount: 10 - 15 mm)	Dog-eared, exit failure
Heat Sensitive Paper	Edge folded, exit failure, transport failure
Coated Paper (Ink Jet Paper)	Take-up failure, transport failure
Translucent paper	Take-up failure, transport failure
Paper immediately after paper exit from the main unit	Take-up failure, transport failure

Type of Original	Possible Trouble
Paper with many punched holes (e.g., loose leaf) limited to vertical feeding	Multi-page feed due to flashes from holes
Sheets with 2 to 4 holes	Transport failure
Sheets two-folded or Z-folded	Transport failure, image deformation
Sheets with rough surface (e.g., letterhead)	Take-up failure
Sheets folded	Image deformation, multi-page feed, take-up failure

- *: Before using loose leaf or folded original, straighten the perforations or fold first. The permissible lift amount is 15 mm or less.

3.6 Mixed original feed chart

For Metric

		Max. Original Size							
		297 mm		257 mm		210 mm		182 mm	148 mm
Mixed Original Size		A3	A4	B4	B5	A4S	A5	B5S	A5S
297 mm	A3	OK	OK	-	-	-	-	-	-
	A4	OK	OK	-	-	-	-	-	-
257 mm	B4	NG	NG	OK	OK	-	-	-	-
	B5	NG	NG	OK	OK	-	-	-	-
210 mm	A4S	NG	NG	NG	NG	OK	OK	-	-
	A5	NG	NG	NG	NG	OK	OK	-	-
182 mm	B5S	NG	NG	NG	NG	NG	NG	OK	-
148 mm	A5S	NG	NG	NG	NG	NG	NG	NG	OK

For Inch

		Max. Original Size					
		11		8 1/2			5 1/2
Mixed Original Size		11 x 17	8 1/2 x 11	8 1/2 x 14	8 1/2 x 11S	5 1/2 x 8 1/2	8 1/2 x 5 1/2S
11	11 x 17	OK	OK	-	-	-	-
	8 1/2 x 11	OK	OK	-	-	-	-
8 1/2	8 1/2 x 14	NG	NG	OK	OK	OK	-
	8 1/2 x 11S	NG	NG	OK	OK	OK	-
	8 1/2 x 5 1/2	NG	NG	OK	OK	OK	-
5 1/2	8 1/2 x 5 1/2S	NG	NG	NG	NG	NG	OK

OK	Mixed Original Feed available (Tilted with in 1.5 % or less)
NG	NO. Mixed Original Feed
-	Can not Set Original

3.7 Machine specifications

Power Requirements	DC 24 V (supplied from the main unit)
	DC 3.3 V (supplied from the main unit)
Max. power consumption	14.4 W or less
Size	546 mm (W) x 486 mm (D) x 80 mm (H) 21.5 inch (W) x 19.1 inch (D) x 3.1 inch (H)
Weight	5.3 kg (11 11/16 lb)

3.8 Operating

- Conforms to the operating environment of the main unit.

NOTE

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

4. MB-505

4.1 Paper

Paper Type	Plain paper, Recycled paper (64 g/m^2 to 90 g/m^2) Special paper : CARD1 (91 g/m^2 to 120 g/m^2), CARD2 (121 g/m^2 to 157 g/m^2), OHP film, Envelopes
Paper Size	Metric: A3, B4, A4S, B5S, A4, A5S, B5, B6S, A5, A6S, 16K, 16KS, 8K Inch: 11 x 17, 8 1/2 x 14, 8 1/2 x 11S, 7 1/4 x 10 1/2S, 8 1/2 x 11, 5 1/2 x 8 1/2S, 7 1/4 x 10 1/2, 5 1/2 x 8 1/2 Foolscap : 8 1/2 x 13 1/2, 8 1/2 x 13, 8 1/4 x 13, 8 1/8 x 13 1/4, 8 x 13, 8 13/20 x 13 Width: 90 mm to 297 mm, Length:139.7 mm to 431.8 mm
Number of loadable sheets	Plain paper, Recycled paper: 100 sheets Special paper: CARD1 and 2(10 sheets), OHP film(10 sheets), Envelopes(10 sheets),

4.2 Machine specifications

Power requirements	DC 24 V (supplied from the main body)
	DC 3.3 V (supplied from the main body)
Max. power consumption	8W or less
Dimensions*1	446 mm (W) x 469 mm (D) x 82 mm (H)
Weight*1	1.7kg

- *1: Values given only for reference when the Duplex Unit is demounted from the machine, since it is standard on the machine.

4.3 Operating environment

- Conforms to the operating environment of the main body.

NOTE

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

5. PF-507

5.1 Type

Name	1 way Paper Take-Up Cabinet
Type	Front loading type 1 way paper take-up device
Installation	Desk type
Document Alignment	Center

5.2 Paper type

Paper type	Plain paper, Recycled paper (15-15/16 lb to 23-15/16 lb (64 g/m2 to 90 g/m2))
Paper size	Metric: A3 to B5S (Refer to the PB.2.3 Paper size detecting mechanism for details.) Inch: 11 x 17, 8 $^{1}/_{2}$ x 14, 8 $^{1}/_{2}$ x 11, 8 $^{1}/_{2}$ x 11S
Number of loadable sheets	250 sheets

5.3 Machine specifications

Power Requirements	DC 24 V (supplied from the main body)
	DC 3.3 V (supplied from the main body)
Max. Power Consumption	9W or less
Dimensions	570 mm (W) × 530 mm (D) × 108 mm (H) 22-7/16 inches (W) x 20-7/8 inches (D) x 4-1/4 inches (H)
Weight	5.4kg or 11-7/8 lb

5.4 Operating environment

- Conforms to the operating environment of the main body.

NOTE

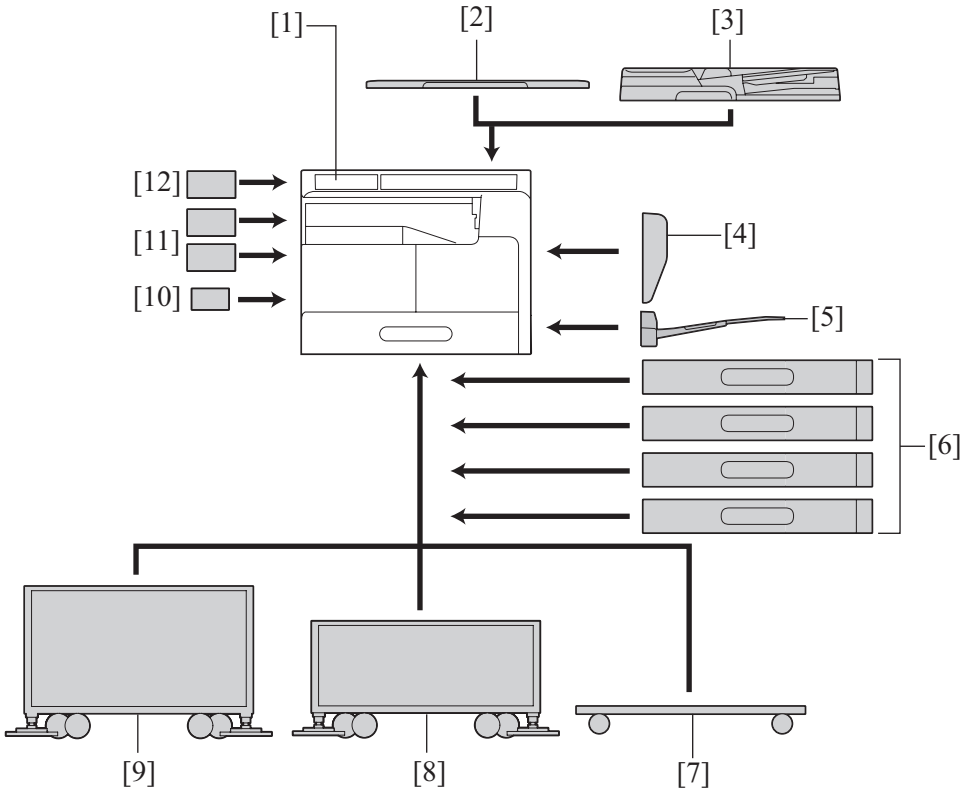
- **These specifications are subject to change without notice.**

6. FK-510

Applicable lines	PSTN (Public Switched Telephone Network), PBX (Private Branch Exchange)	
Resolution	Standard	203 dpi x 98 dpi (8 dot/mm x 3.85 line/mm)
	Fine	203 dpi x 196 dpi (8 dot/mm x 7.7 line/mm)
	Super fine	203 dpi x 392 dpi (8 dot/mm x 15.4 line/mm)
	Super fine (Only for the ADF transmission)	406 dpi x 392 dpi (16 dot/mm x 15.4 line/mm)
Compatibility	ECM/Super G3	
Modem speed	2.4 to 33.6 kbps	
Transmit speed	3 second/page (A4, V.34, 33.6 kbps, JBIG)	
Coding method	MH, MR, MMR, JBIG	
Memory for receiving	16 MB (1024 pages can be stored)	
Recording paper size	Maximum size: A3 Maximum length: 1000 mm (When receiving the data of an original that is longer than the paper sizes set in the trays, the data is printed according to the setting of [REDUCTION RX].)	
Original sizes	Flatbed	Maximum: A3
	ADF	Maximum: 297 mm (Width) x 1000 mm (Length)
	ADF (Super fine only)	Maximum: 297 mm (Width) x 900 mm (Length)
Functions	One-touch dial	32 key
	Speed dial	250 stations can be registered
	Group dial	32 groups (50 stations can be registered as one group.)
	Program dial	4 key (No.29 to 32)
	Other supported functions	On hook dial, Automatic redial, Manual redial, Chain dial

D OVERALL COMPOSITION

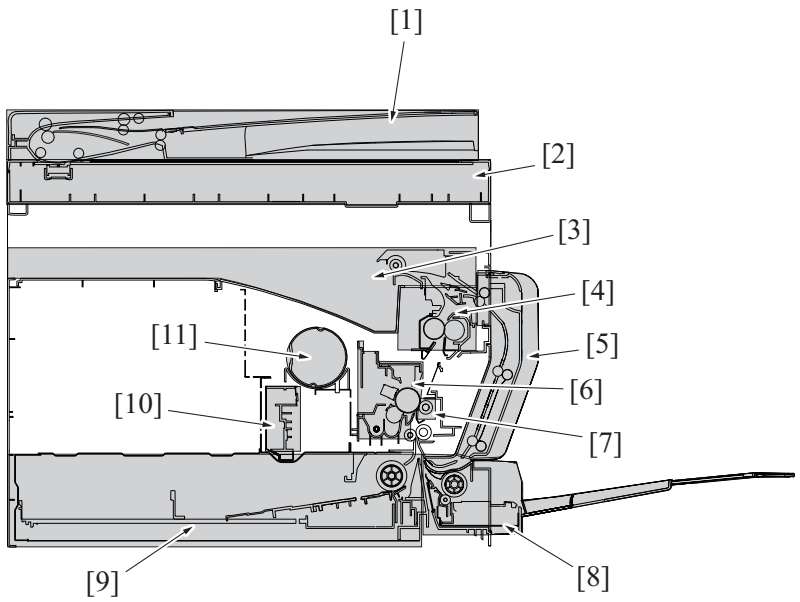
1. SYSTEM CONFIGURATION



[1]	bizhub 235/215/195	[2]	Original Cover (OC-512)*1
[3]	Reverse Automatic Document Feeder (DF-625)	[4]	Automatic Duplex Unit (AD-509)
[5]	Multi bypass tray (MB-505) *2	[6]	Paper Feeder Unit (PF-507)*3
[7]	Desk (DK-708)	[8]	Desk (DK-707)
[9]	Desk (DK-706)	[10]	Mechanical Counter (MC-504)*4
[11]	Image Controller (IC-209) or Network Card (NC-504)	[12]	FAX kit (FK-510)

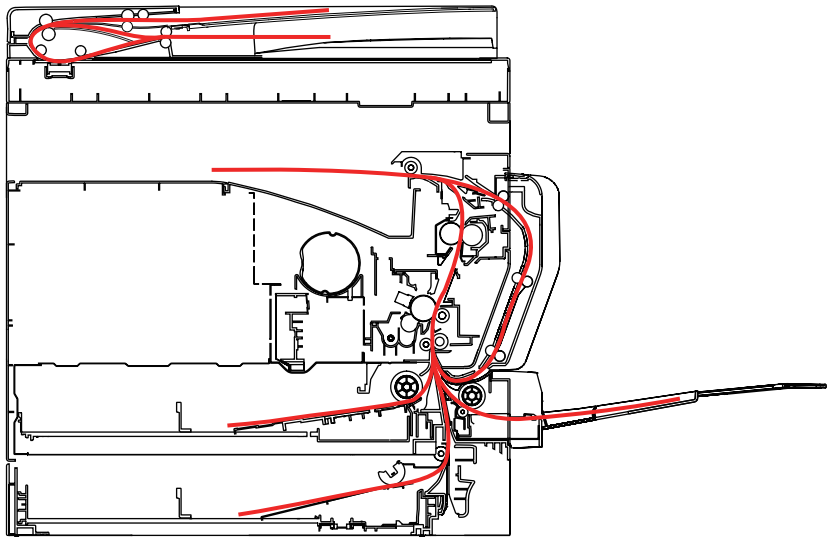
*1: Standard on the bizhub 195/235. Standard on the product shipped to China of the bizhub 215.
*2: Standard on the bizhub 195/235. Standard on the product shipped to except North America and Europe of the bizhub 215.
*3: Standard on the bizhub 235. (1 unit)
*4: Standard on the product shipped to North America of the bizhub 215

2. CROSS SECTIONAL VIEW



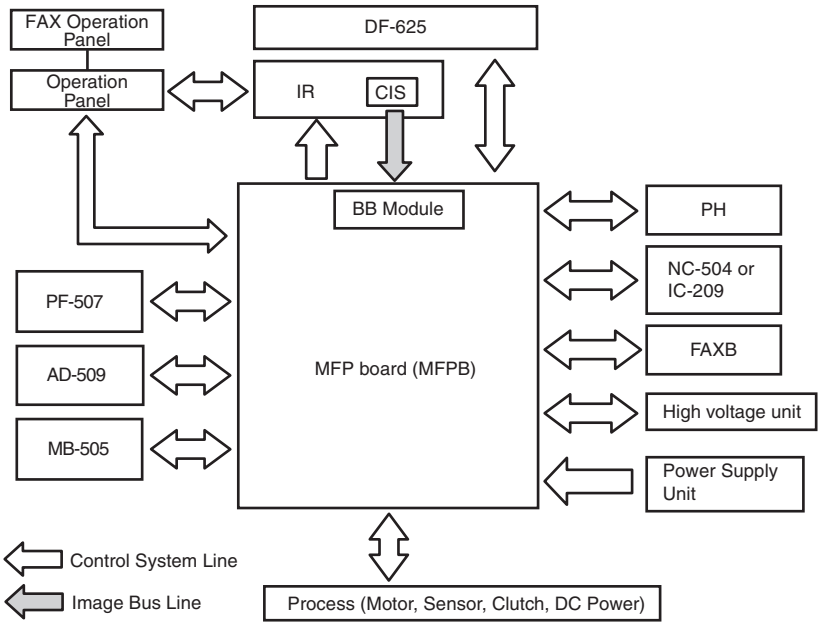
[1]	Reverse Automatic Document Feeder (DF-625)	[2]	Scanner
[3]	Exit section	[4]	Fusing unit
[5]	Automatic Duplex Unit (AD-509)	[6]	Imaging unit
[7]	Transfer section	[8]	Multiple bypass tray
[9]	Tray1	[10]	Write section
[11]	Toner supply section	-	-

3. PAPER PATH

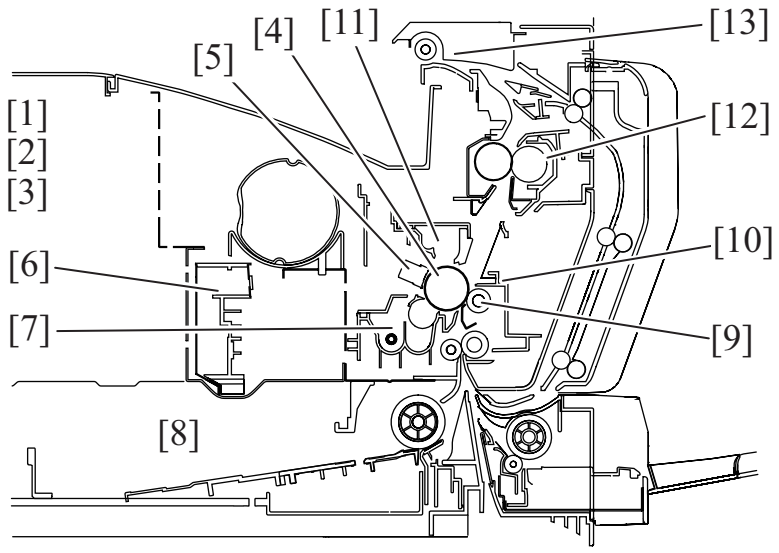


4. OVERALL CONFIGRATION

4.1 Control Block Diagram



4.2 Image creation process

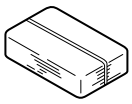


[1]	Photoelectric conversion	• A CIS sensor is used to convert the image data represented by light reflected off the original to a corresponding electric signal which, in turn, is output to the IR image processing section.
[2]	IR Image processing	• The analog electric signal is converted to an 8-bit digital image signal (A/D conversion) which, in turn, goes through appropriate corrections before being output to the PH image processing section.
[3]	PH Image processing	• After going through corrections, the digital image signal is converted to a corresponding electric signal (D/A conversion), with which the laser is turned ON or OFF as necessary.
[4]	Drum	• Made up of an aluminum pipe coated with a photoconductive layer, on which an electrostatic latent image is formed.
[5]	Drum charging	• A uniform negative DC charge is deposited across the entire surface of the drum.
[6]	Laser exposure	• The laser beam strikes the surface of the drum, forming an electrostatic latent image.
[7]	Developing	• Toner negatively charged in the developer mixing chamber is attracted onto the electrostatic latent image changing it to a visible, developed image. • A developing bias (Vb) is applied to the developing roller to prevent toner from being attracted onto those areas of the drum which correspond to the background areas of the original.
[8]	Paper feed	• Paper is supplied from the paper feed tray.
[9]	Image transfer	• A DC positive charge is applied to the image transfer roller to transfer the visible image on the surface of the drum onto the paper.
[10]	Paper separation	• The drum paper separator fingers remove paper from the surface of the drum. • The charge neutralizing plate neutralizes any charge left on the paper.
[11]	Cleaning	• Residual toner on the surface of the drum is scraped off.

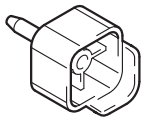
		• The toner is then recycled back to the developing unit.
[12]	Fusing	• The developed image is permanently fused to the paper by the combination of heat and pressure applied by the fusing roller.
[13]	Paper exit	• The paper is fed out onto the exit tray.

E SERVICE TOOL

1. Service material list

Name	Shape	Material No.	Remarks
Cleaning pad		000V-18-1	10pcs/1pack
Isopropyl alcohol			

2. CE tool list

Tool name	Shape	Quantity	Parts No.	Remarks
PC positioning jig		1	4021 4362 ##	

F MAINTENANCE

1. Concept of periodical maintenance

1.1 Concept of periodical maintenance

- The cleaning or replacement cycle of the parts of the machine and options that need periodical maintenance depends on the total counter value or each counter value provided by [SERVICE MODE] -> [COUNTER] -> [PM COUNTER].

1.2 bizhub 235/215/195

1.2.1 Periodical maintenance 1 (Total counter; every 55,000 counts)

Section	Description/part name	Qt.	Clean	Check	Lubrication	Replace	Descriptions
Overall	Paper feed and image conditions	—		●			
	Appearance	—	●	●			
Conveyance section	Registration roller	—	●				
	Pre-image transfer guide plate	—	●				
Processing section	Ds collars	—	●				
	Developer scattering prevention plate	—	●				
	Drum separator fingers	—	●				
	Developer	1				●	
	Drum	1				●	
	Cleaning blade	1				●	
	Drum charge corona assy	1				●	

1.2.2 Periodical maintenance 2 (PM counter; every 165,000 counts)

Section	Description/part name	Qt.	Clean	Check	Lubrication	Replace	Descriptions
Fusing section	Fusing unit	1				●	
Paper feed section	Feed roller	1				●	
	Separation pad	1				●	
Conveyance section	Transfer roller unit	1				●	

1.2.3 Periodical maintenance 3 (SUPPLIES counter; every 165,000 counts)

Section	Description/part name	Qt.	Clean	Check	Lubrication	Replace	Descriptions
Processing section	Imaging unit	1				●	

1.3 Option

1.3.1 Reverse automatic document feeder (DF-625)

(1) Periodical maintenance 1 (PM counter; every 55,000 counts)

Section	Description/part name	Qt.	Clean	Check	Lubrication	Replace	Descriptions
Overall	Paper feed and image conditions	—		●			
	Appearance	—	●	●			
Paper feed section	Pick-up roller	—	●				
	Feed roller	—	●				
	Separation roller	—	●				
	Document transport sensor	—	●				
Conveyance section	Roller and rolls	—	●				
Scanning section	Scanning guide	—	●				

(2) Periodical maintenance 2 (PM counter; every 110,000 counts)

Section	Description/part name	Qt.	Clean	Check	Lubrication	Replace	Descriptions
Paper feed section	Separation roller	1				●	

1.3.2 Paper feeder unit (PF-507)

(1) Periodical maintenance 1 (PM counter; every 165,000 counts)

Section	Description/part name	Qt.	Clean	Check	Lubrication	Replace	Descriptions
Paper feed section	Feed roller	1				●	

1.3.3 Multi bypass tray (MB-505)

(1) Periodical maintenance 1 (PM counter; every 165,000 counts)

Section	Description/part name	Qt.	Clean	Check	Lubrication	Replace	Descriptions
Paper feed section	Feed roller	1				●	
	Separation roller	1				●	

2. PERIODICAL MAINTENANCE ITEMS

2.1 Periodical replacement parts list

2.1.1 Periodical replacement parts list

- To ensure that the machine produces good copies and to extend its service life, it is recommended that the maintenance jobs described in this schedule be carried out as instructed.
- Replace with reference to the numeric values displayed on the total counter, the each PM counter or the messages displayed on the control panel.
- Maintenance conditions are based on the case of A4 or 8 $^{1}/_{2}$ x 11, standard mode* and low power mode OFF.

		B/W
* Standard mode	bizhub 235	2 pages per job
	bizhub 215	2 pages per job
	bizhub 195	2 pages per job

2.1.2 bizhub 235/215/195

Classification	Parts name		Parts No.	Qt.	Replacing cycle	Descriptions	Ref. page
Processing section	Developer		—	1	55,000		F.3.1.1 Replacing the developer
	Drum		—	1	55,000		F.3.1.2 Replacing the drum
	Cleaning blade		A0XX 3618 ##	1	55,000		F.3.1.4 Replacing the cleaning blade
	Drum charge corona assy		A1XU R701 ##	1	55,000		F.3.1.3 Replacing the drum charge corona assy
	Toner bottle (TN119) *1		—	1	5,400		F.3.1.6 Replacing the toner bottle
	Toner bottle (TN118)		—	1	12,000		
	Toner bottle (TN119H) *1		—	1			
	Imaging unit		—	1	165,000		F.3.1.10 Replacing the imaging unit
Fusing section	Fusing unit	220V - 240V	A3PE PP3V ##	1	165,000	*2	F.3.3.1 Replacing the fusing unit
		110V	A3PE PP3X ##	1			
		120V - 127V	A3PE PP3W ##	1			
Paper feed section	Feed roller		A0XX 5602 ##	1	165,000	*3	F.3.4.1 Replacing the tray 1 feed roller
	Separation pad		A0XX PP6E ##	1	165,000		F.3.4.2 Replacing the tray 1 separation pad
Conveyance section	Transfer roller unit		A0XX PP6H ##	1	165,000		F.3.5.1 Replacing the transfer roller unit

*1: Only for China
*2: Actual durable cycle (PM counter value)
*3: Replace those parts at the same time.

2.1.3 Option

Classification	Parts name	Parts No.	Qt.	Replacing cycle	Descriptions	Ref. page
DF-625	Separation roller	A3JH PP3B ##	1	110,000		F.4.1.1 Replacing the separation roller (DF-625)
PF-507	Feed roller	A3PF PP1H ##	1	165,000		F.5.1.1 Replacing the feed roller (PF-507)
MB-505	Feed roller	A0XX 5947 ##	1	165,000	*1	F.6.1.1 Replacing the feed roller (MB-505)
	Separation roller	4034 0151 ##	1	165,000		F.6.1.2 Replacing the separation roller assy (MB-505)

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

2.2 Periodical cleaning parts list

2.2.1 bizhub 235/215/195

- Clean with reference to the numeric values displayed on the total counter.

Classification	Parts name	Cleaning cycle	Descriptions	Ref.Page
Processing section	Ds collars	55,000		F.3.1.7 Cleaning of the Ds collars
	Developer scattering prevention plate	55,000		F.3.1.9 Cleaning of the developer scattering prevention plate
	Drum separator fingers	55,000		F.3.1.8 Cleaning of the drum separator fingers

Classification	Parts name	Cleaning cycle	Descriptions	Ref.Page
Conveyance section	Registration roller	55,000		F.3.2.1 Cleaning of the registration roller
	Pre-image transfer guide plate	55,000		F.3.2.2 Cleaning of the pre-image transfer guide plate

2.2.2 Option

- Clean with reference to the numeric values displayed on the PM counter.

Classification	Parts name	Cleaning cycle	Descriptions	Ref.Page
DF-625	Feed roller	55,000		F.4.1.2 Cleaning of the pick-up roller/feed roller/separation roller (DF-625)
	Pick-up roller	55,000		F.4.1.2 Cleaning of the pick-up roller/feed roller/separation roller (DF-625)
	Separation roller	55,000		F.4.1.2 Cleaning of the pick-up roller/feed roller/separation roller (DF-625)
	Roller and rolls	55,000		F.4.2.1 Cleaning of the roller and rolls (DF-625)
	Scanning guide	55,000		F.4.3.1 Cleaning of the scanning guide (DF-625)
	Document transport sensor	55,000		F.4.1.3 Cleaning of the document transport sensor (DF-625)

2.3 Concept of parts life

2.3.1 Life value of consumables and parts

Life specification value means an actual life terminated when prints are made under the conditions as defined in the next section, "F.2.3.2 Conditions for life specifications values"

	Description	Life value	Max. life value
Developer	The distance travelled by the drum is converted to a corresponding number of printed pages of A4 paper at 2P/J.	55,000 *1	69,000 *1, *3
Drum			
Cleaning blade			
PC drum charge corona			
Fusing unit	The number of sheets of paper fed out of the copier is counted.	165,000 counts *2	—

*1: To check the life count, select [Service Mode] -> [COUNTER] -> [SUPPLIES COUNTER] -> [I/U Life].
*2: To check the life count, select [Service Mode] -> [COUNTER] -> [PM COUNTER] -> [FUSING].
*3: When the count reaches the maximum life value, printing is not allowed.

2.3.2 Conditions for life specifications values

Item			Description
Copying type			2P/J
Paper size			A4 or 8 $^{1}/_{2}$ x 11
PV/M	bizhub 235	Average	3,500 (China) / 3,000 (US, EU) / 2,500 (other marketing areas)
		Maximum	15,000
	bizhub 215	Average	3,500 (China) / 3,000 (US, EU) / 2,500 (other marketing areas)
		Maximum	15,000
	bizhub 195	Average	2,500 (China) / 1,500 (Others except for China)
		Maximum	12,000
Original density			B/W 6%

3. PERIODICAL MAINTENANCE PROCEDURE bizhub 235/215/195

NOTE

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

3.1 Processing section

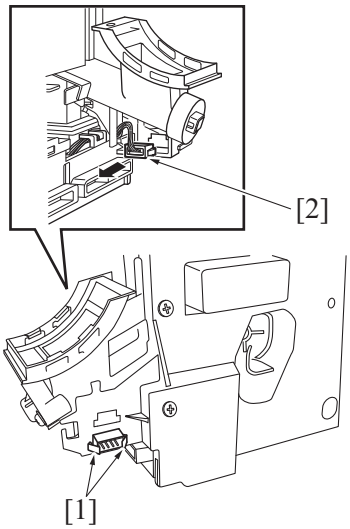
3.1.1 Replacing the developer

(1) Periodically replacing parts/cycle

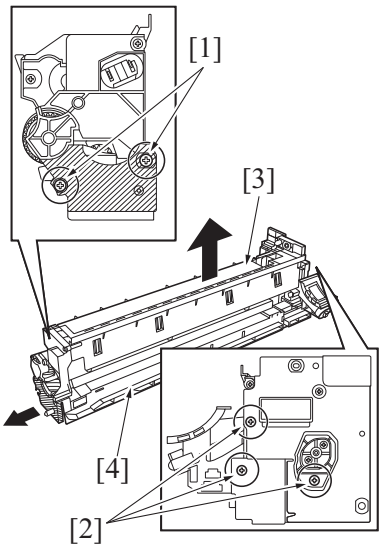
Developer: Every 55,000 counts

(2) Procedure

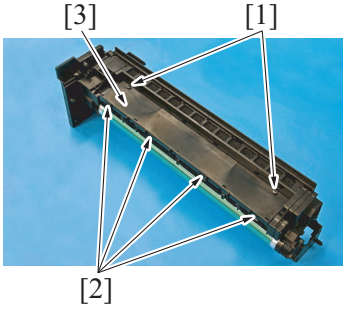
1. Remove the toner bottle.
   F.3.1.6 Replacing the toner bottle
2. Remove the imaging unit.
   F.3.1.10 Replacing the imaging unit



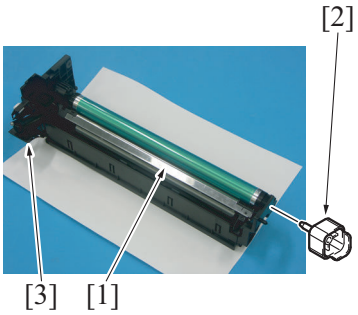
3. Release the tabs [1] and disconnect the connector [2] from the imaging unit.



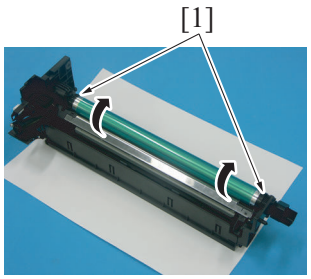
4. Remove two screws [1] in the rear of the imaging unit.
5. Remove three screws [2] at the front of the imaging unit.
6. While slightly pulling the area below the drum (diagonally shaded area) in the direction of arrow, separate the drum unit [3] from the developing unit [4].



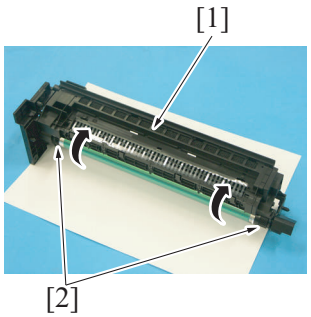
7. Remove two screws [1], release four tabs [2], and remove the plate [3].



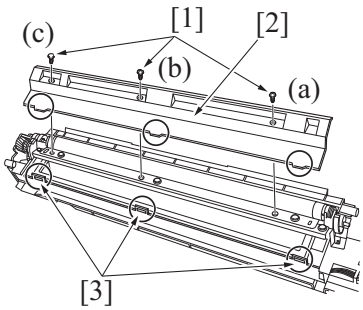
8. Place the drum unit [1] as shown on the illustration.
9. Attach the PC positioning jig [2].
NOTE
- **Be sure to place the drum unit on a sheet of paper or similar item.**
- **To avoid the developer from leaking at the point [3] on the illustration, place the drum unit on a sheet of paper or similar item so that the working place will not have developer.**



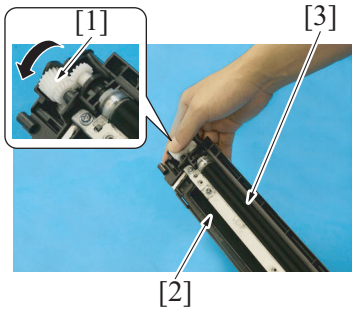
10. While turning the gear [1] in the direction of the arrow, dump the remaining toner from the drum unit.
NOTE
- **Lightly shake the drum unit before dumping the toner so that caked part will also be removed.**
- **Turn the drum about three complete turns.**



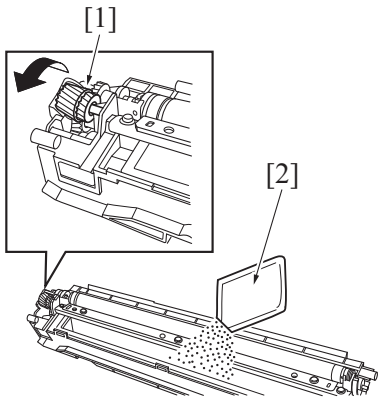
11. Place the drum unit [1] as shown on the illustration.
12. While turning the gear [2] in the direction of the arrow, dump the remaining developer from the screw.
NOTE
- **Turn the drum about three complete turns.**



13. Remove three screws [1] of the developing unit, and remove the developer scattering prevention plate [2].
NOTE
- **When securing the developer scattering prevention plate, tighten screws in the order of one on one edge (a), one at the center (b), and one on the other edge (c).**
- **When attaching the developer scattering prevention plate, make sure that the tabs of the developer scattering prevention plate are inserted into the slots [3].**



14. Tilt the developing unit as shown in the illustration. While turning the gear [1] in the direction of the arrow, dump the developer [2].
NOTE
- **Make sure that the magnet roller [3] is placed on the upper side of the developing unit when dumping the developer [2]. Old developer adhering to the gears and rolls can cause their breakage.**
- **Turning the gear backward at this time could damage the sheet for cleaning the TCR sensor.**
- **Dump developer until almost no developer sticks to the magnet roller.**



15. While turning the gear [1] in the direction of the arrow, pour a packet of developer [2].
NOTE
- **Shake the packet of developer well before pouring.**

16. Remove the PC positioning jig.
17. To reinstall, reverse the order of removal.
NOTE
- **Do not install the toner bottle at this stage.**

18. Turn ON the power switch.
19. Perform [SERVICE MODE] - [FUNCTION] - [TCR AUTO ADJUST].
NOTE
- **To obtain the correct adjustment value, make this adjustment while the toner bottle is removed.**

20. Install the toner bottle.

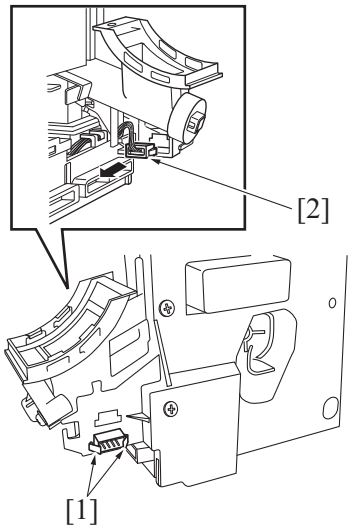
3.1.2 Replacing the drum

(1) Periodically replacing parts/cycle

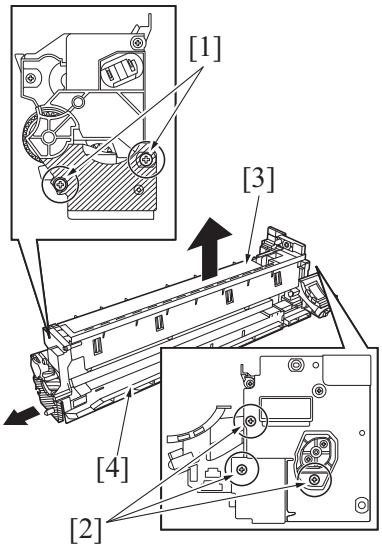
Drum: Every 55,000 counts

(2) Procedure

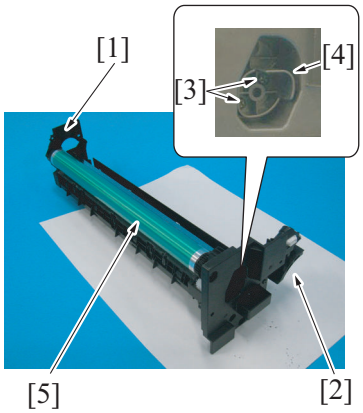
1. Remove the toner bottle.
F.3.1.6 Replacing the toner bottle
2. Remove the imaging unit.
F.3.1.10 Replacing the imaging unit



3. Release the tabs [1] and disconnect the connector [2] from the imaging unit.



4. Remove two screws [1] in the rear of the imaging unit.
5. Remove three screws [2] at the front of the imaging unit.
6. While slightly pulling the area below the drum (diagonally shaded area) in the direction of arrow, separate the drum unit [3] from the developing unit [4].



7. Place the drum unit [1] as shown in the illustration.
NOTE
- **Developer can spill from the portion [2] shown in the illustration. Place the drum unit on a sheet of paper to prevent developer from making the site dirty.**

8. Remove two screws [3] and remove the bracket [4] that holds the drum in place.
9. Remove the drum [5].
NOTE
- **Protect the drum that has been removed with a protective cloth.**
- **If the drum has been replaced with a new one, apply a coat of toner to the surface of the new drum.**
F.3.1.5 Application of toner

10. To reinstall, reverse the order of removal.
11. Turn ON the power switch.
12. Select [SERVICE MODE] -> [CLEAR DATA] -> [SUPPLIES COUNTER] -> [I/U Life] and clear the counter value.

3.1.3 Replacing the drum charge corona assy

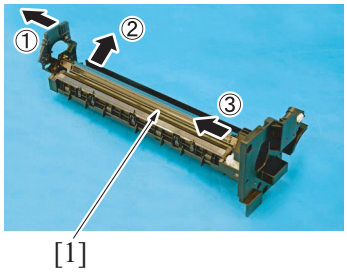
(1) Periodically replacing parts/cycle

Drum charge corona assy: Every 55,000 counts

(2) Procedure

1. Remove the toner bottle.
F.3.1.6 Replacing the toner bottle
2. Remove the imaging unit.
F.3.1.10 Replacing the imaging unit
3. Remove the drum.
F.3.1.2 Replacing the drum

4. Remove the drum charge corona [1] as shown in the illustration.



5. To reinstall, reverse the order of removal.

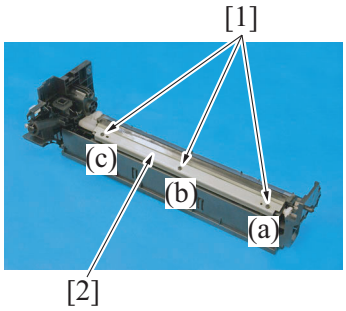
3.1.4 Replacing the cleaning blade

(1) Periodically replacing parts/cycle

Cleaning blade: Every 55,000 counts

(2) Procedure

1. Remove the toner bottle.
   F.3.1.6 Replacing the toner bottle
2. Remove the imaging unit.
   F.3.1.10 Replacing the imaging unit
3. Remove the drum.
   F.3.1.2 Replacing the drum
4. Remove the drum charge corona assy.
   F.3.1.3 Replacing the drum charge corona assy



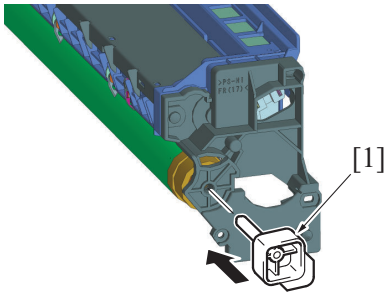
5. Remove three screws [1], and remove the cleaning blade [2].
   NOTE
   - **When securing the cleaning blade, tighten screws in the order of one on one edge (a), one at the center (b), and one on the other edge (c).**
   - **When the cleaning blade has been replaced, apply a coat of toner to the surface of the drum.**
     F.3.1.5 Application of toner

6. To reinstall, reverse the order of removal.

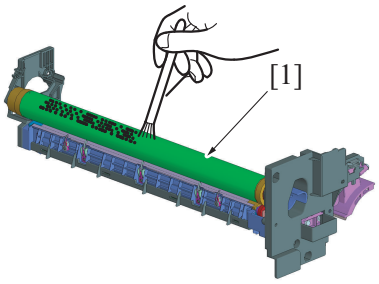
3.1.5 Application of toner

NOTE

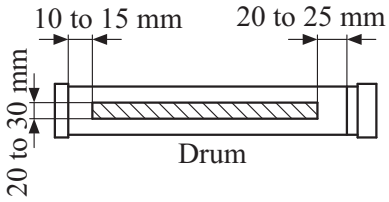
- **Perform these steps when the drum and/or cleaning blade have been replaced.**

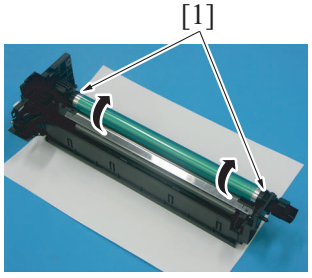


1. With the imaging unit divided into the drum assy and developing assy, install the PC positioning jig [1] in the rear of the drum assy.

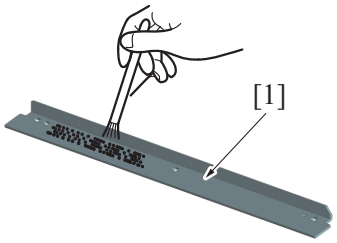


2. Using a brush, apply a light coat of toner to the surface of the drum [1].
   <<Area to which toner is to be applied.>>





3. Hold both ends [1] of the drum with your both hands and turn the drum a half turn in the direction of the arrow.



4. Using a brush, apply a light coat of toner to the surface of the cleaning blade [1].

3.1.6 Replacing the toner bottle

(1) Periodically replacing parts/cycle

- Toner bottle (TN119): Every 5,400 prints
- Toner bottle (TN118/TN119H): Every 12,000 prints

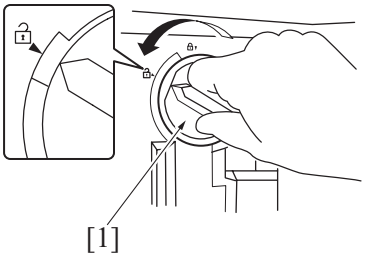
(2) Procedure

NOTE

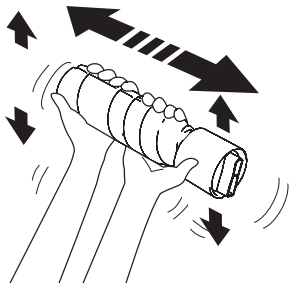
- **Do not install the toner bottle while the imaging unit is not installed. Doing so can cause a toner spill.**

1. Open the front door.

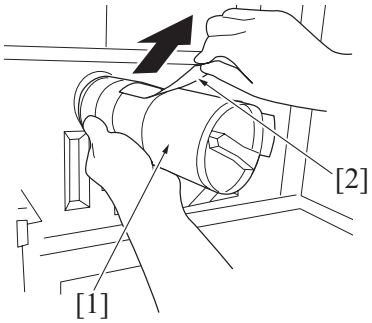
2. Rotate the empty toner bottle [1] counterclockwise to unlock it.
3. Pull out the toner bottle [1].

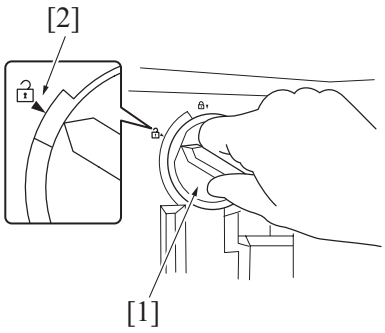


4. Remove the new toner bottle from its packaging, and shake it side to side 5 to 10 times.

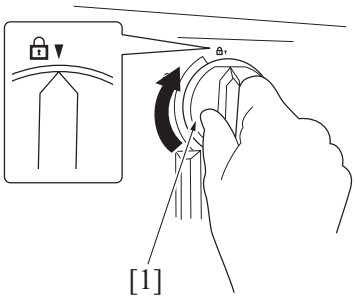


5. Insert the toner bottle [1] into the machine a little.
6. While holding the toner bottle, slowly peel off the seal [2].





7. Insert the toner bottle [1] into the machine.
   NOTE
   - **Align the tip of the knob of the toner bottle with the mark of ▼ [2] indicated on the machine as shown in the illustration.**



8. Rotate the toner bottle [1] clockwise to lock it.
9. Close the front cover.

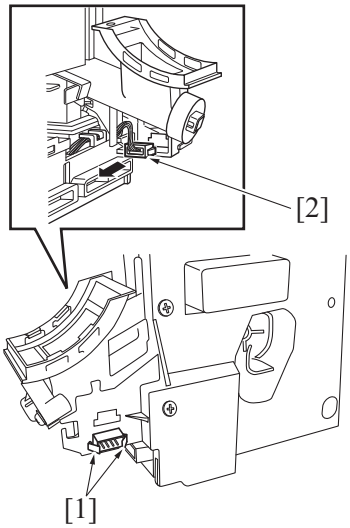
3.1.7 Cleaning of the Ds collars

(1) Periodically cleaning parts/cycle

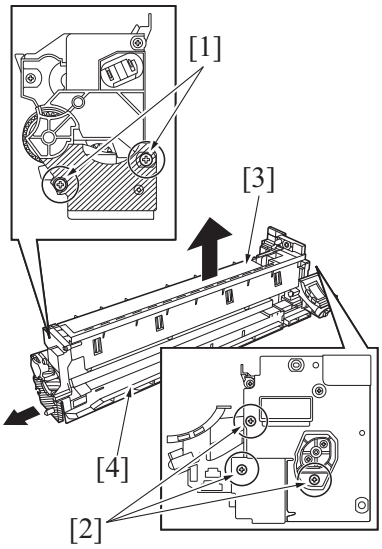
Ds collars: Every 55,000 counts

(2) Procedure

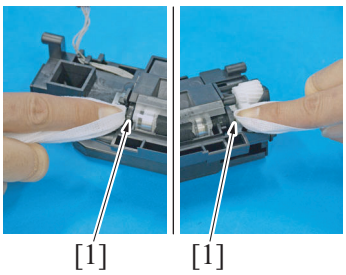
1. Remove the toner bottle.
   F.3.1.6 Replacing the toner bottle
2. Remove the imaging unit.
   F.3.1.10 Replacing the imaging unit



3. Release the tabs [1] and disconnect the connector [2] from the imaging unit.



4. Remove two screws [1] in the rear of the imaging unit.
5. Remove three screws [2] at the front of the imaging unit.
6. While slightly pulling the area below the drum (diagonally shaded area) in the direction of arrow, separate the drum unit [3] from the developing unit [4].



7. Using a cleaning pad with alcohol, wipe the two Ds collars [1] clean of dirt.

8. To reinstall, reverse the order of removal.

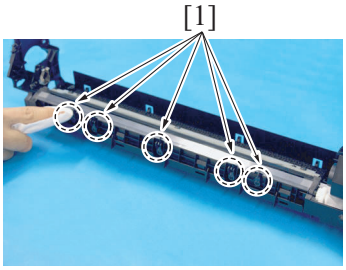
3.1.8 Cleaning of the drum separator fingers

(1) Periodically cleaning parts/cycle

Drum paper separator fingers: Every 55,000 counts

(2) Procedure

1. Remove the toner bottle.
   F.3.1.6 Replacing the toner bottle
2. Remove the imaging unit.
   F.3.1.10 Replacing the imaging unit
3. Remove the drum.
   F.3.1.2 Replacing the drum



4. Using a cleaning pad with alcohol, wipe the five separator fingers [1] clean of dirt.

3.1.9 Cleaning of the developer scattering prevention plate

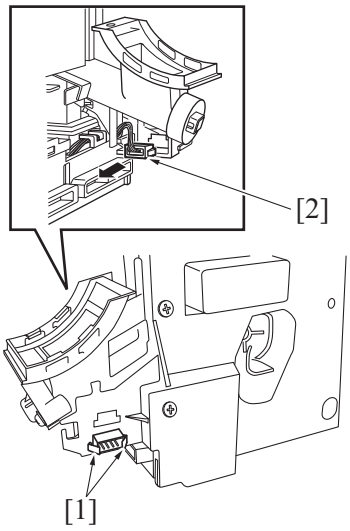
(1) Periodically cleaning parts/cycle

Developer scattering prevention plate: Every 55,000 counts

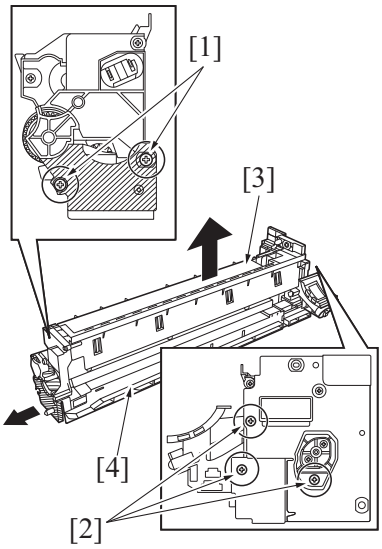
(2) Procedure

1. Remove the toner bottle.
   F.3.1.6 Replacing the toner bottle
2. Remove the imaging unit.
   F.3.1.10 Replacing the imaging unit

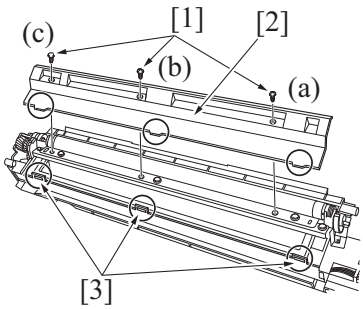
3. Release the tabs [1] and disconnect the connector [2] from the imaging unit.



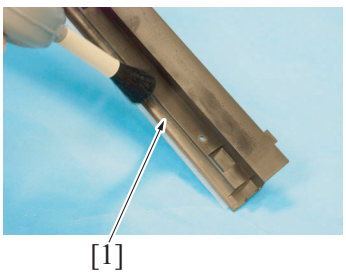
4. Remove two screws [1] in the rear of the imaging unit.
5. Remove three screws [2] at the front of the imaging unit.
6. While slightly pulling the area below the drum (diagonally shaded area) in the direction of arrow, separate the drum unit [3] from the developing unit [4].



7. Remove three screws [1], and remove the developer scattering prevention plate [2].
NOTE
- **When securing the developer scattering prevention plate, tighten screws in the order of one on one edge (a), one at the center (b), and one on the other edge (c).**
- **When attaching the developer scattering prevention plate, make sure that the tabs of the developer scattering prevention plate are inserted into the slots [3].**



8. Using a brush, whisk dust and dirt off the surface of the developer scattering prevention plate [1].



9. To reinstall, reverse the order of removal.

3.1.10 Replacing the imaging unit

(1) Periodically replacing parts/cycle

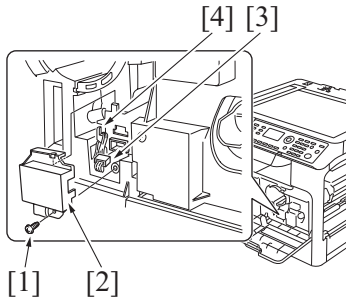
Imaging unit: Every 165,000 prints

(2) Procedure

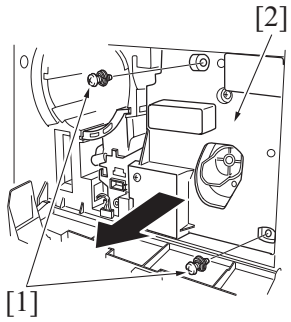
1. Open the right door.
2. Open the front door.
3. Remove the toner bottle.
   F.3.1.6 Replacing the toner bottle

NOTE

- **Do not install the toner bottle while the imaging unit is not installed. Doing so can cause a toner spill.**



4. Remove the screw [1], and remove the cover [2].
5. Disconnect the connector [3].
6. Remove the harness from guide [4].



7. Remove two screws [1], and remove the imaging unit [2].

NOTE

- **Do not install the toner bottle while the imaging unit is not installed.**
- **When installing the imaging unit, use care not to damage the drum.**
- **Before attempting to install the imaging unit, be sure to fully open the right door. Take care that, if the imaging unit is installed with the right door locked halfway, it may interfere with the transfer roller.**
- **When inserting the imaging unit, do that slowly and, when you are sure that the drum gear contacts the mating part, push the imaging unit all the way into position. If this step is done all at once, the drum gear could be damaged.**
- **If the right door is closed with the imaging unit removed, pressing the unlock button does not open the right door automatically. For opening the right door in this status, move the door manually while pressing the unlock button.**

8. To reinstall, reverse the order of removal.

3.2 Conveyance section

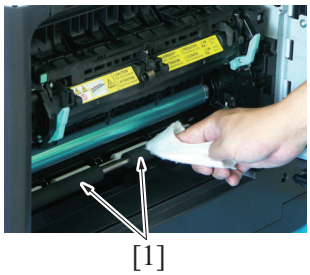
3.2.1 Cleaning of the registration roller

(1) Periodically cleaning parts/cycle

Registration roller: Every 55,000 counts

(2) Procedure

1. Open the right door.



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

NOTE

- **Do not touch or scratch the photo conductor.**

3.2.2 Cleaning of the pre-image transfer guide plate

(1) Periodically cleaning parts/cycle

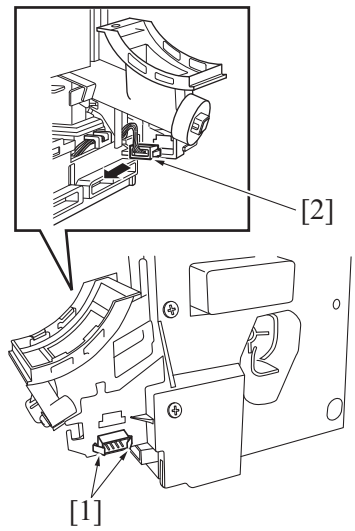
Pre-image transfer guide plate: Every 55,000 counts

(2) Procedure

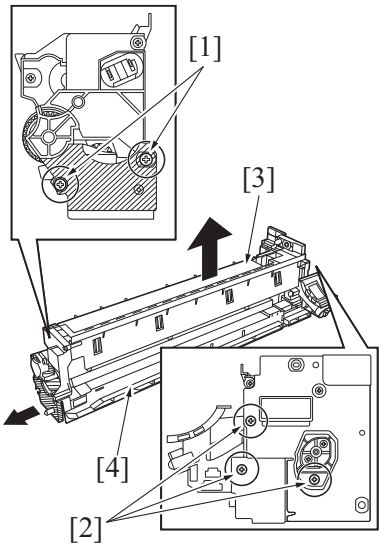
1. Remove the toner bottle.

F.3.1.6 Replacing the toner bottle

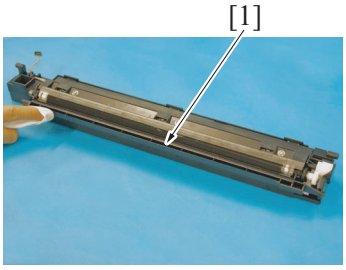
2. Remove the imaging unit.
F.3.1.10 Replacing the imaging unit



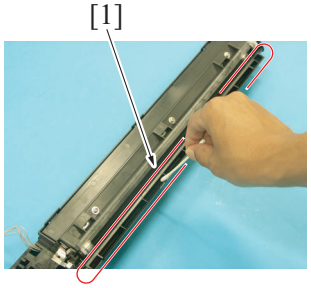
3. Release the tabs [1] and disconnect the connector [2] from the imaging unit.



4. Remove two screws [1] in the rear of the imaging unit.
5. Remove three screws [2] at the front of the imaging unit.
6. While slightly pulling the area below the drum (diagonally shaded area) in the direction of arrow, separate the drum unit [3] from the developing unit [4].



7. Using a cleaning pad with alcohol, wipe the pre-image transfer upper guide plate [1] clean of dirt.



8. Using a cotton bud dampened with alcohol, clean the groove [1] inside the pre-image transfer upper guide plate.

3.3 Fusing section

3.3.1 Replacing the fusing unit

⚠WARNING

- To avoid electric shock, after turning OFF the power switch, do not touch the DC power supply unit for 10 minutes. If the DC power supply unit is faulty, it may take time before its voltage drops sufficiently.

⚠CAUTION

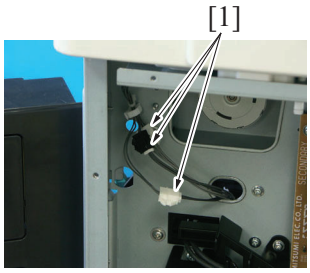
- The area around the fusing unit is hot and you may get burned.
  Turn off the main power switch and wait 20 minutes or more before replacing the fusing unit.

(1) Periodically replacing parts/cycle

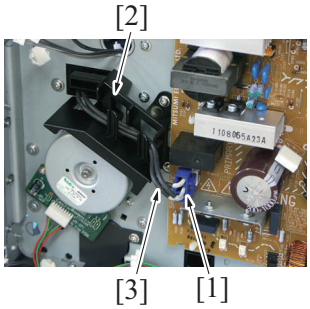
Fusing unit: Every 165,000 counts

(2) Procedure

1. Remove the rear cover.
   G.2.2.6 Rear cover
2. Open the right door.

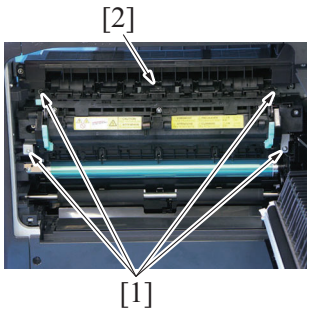


3. Disconnect three connectors [1].
   NOTE
   - **Use care when connecting the connector since there are two connectors with 2 pins.**



4. Disconnect the connector (CN2) [1] on the DC power supply.
5. Remove the harness [3] from the harness guide [2].

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



7. To reinstall, reverse the order of removal.
8. Turn ON the power switch.
9. Select [SERVICE MODE] -> [CLEAR DATA] -> [PM COUNTER] -> [FUSING] and clear the counter value.

3.4 Paper feed section

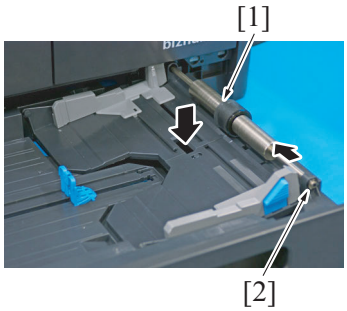
3.4.1 Replacing the tray 1 feed roller

(1) Periodically replacing parts/cycle

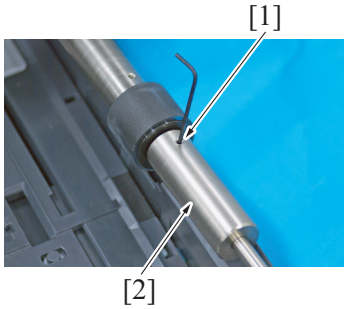
Tray 1 feed roller: Every 165,000 counts

(2) Procedure

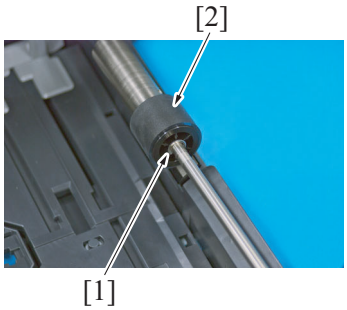
1. Slide out the tray 1.



2. Press down the paper lifting plate.
3. Snap off the E-ring [2] from the feed roller assy [1].
4. Slide the feed roller assy [1] to the rear and pull it off the bushing at the front.



5. Loosen the set screw [1] with the hexagon wrench (2.5 mm), and remove the weight [2].
   NOTE
   - **When reinstall the weight, tighten the set screw with the weight slightly pushed against the feed roller.**



6. Snap off the E-ring [1], and remove the tray1 feed roller [2].

7. To reinstall, reverse the order of removal.
8. Turn ON the power switch.
9. Select [SERVICE MODE] -> [CLEAR DATA] -> [PM COUNTER] -> [TRAY1] and clear the counter value.
   NOTE
   - **Replace the tray 1 feed roller and tray 1 separation pad at the same time.**

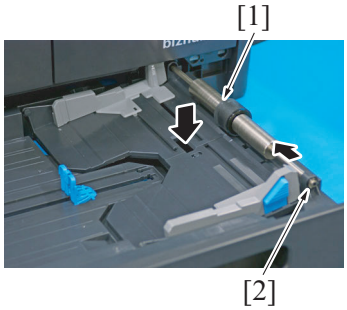
3.4.2 Replacing the tray 1 separation pad

(1) Periodically replacing parts/cycle

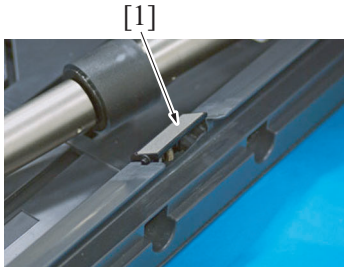
Tray 1 separation pad: Every 165,000 counts

(2) Procedure

1. Slide out the tray 1.



2. Press down the paper lifting plate.
3. Snap off the E-ring [2] from the feed roller assy [1].
4. Slide the feed roller assy [1] to the rear and pull it off the bushing at the front.



5. Remove the tray 1 separation pad [1].
   NOTE
   - **Be careful not to lose spring at this time.**
6. To reinstall, reverse the order of removal.
7. Turn ON the power switch.
8. Select [SERVICE MODE] -> [CLEAR DATA] -> [PM COUNTER] -> [TRAY1] and clear the counter value.
   NOTE
   - **Replace the tray 1 feed roller and tray 1 separation pad at the same time.**

3.5 Conveyance section

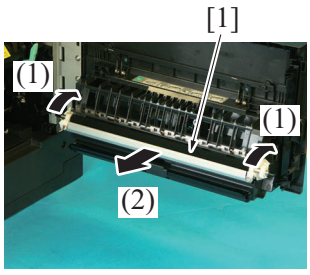
3.5.1 Replacing the transfer roller unit

(1) Periodically replacing parts/cycle

Fusing unit: Every 165,000 counts

(2) Procedure

1. Open the right door.



2. Move the plate upward (1) and pull out the image transfer roller unit [1] in the directions of (2).
   NOTE
   - **Indentations or dirt on the surface of the image transfer roller adversely affect the printed image. Do not therefore touch or dirty with toner the surface of the image transfer roller.**
   - **When handling the image transfer roller, hold onto the shaft or bearings of the roller.**
   - **Do not place a new image transfer roller directly on the floor.**
3. To reinstall, reverse the order of removal.
4. Turn ON the power switch.
5. Select [SERVICE MODE] -> [CLEAR DATA] -> [PM COUNTER] -> [TRANSFER] and clear the counter value.

4. PERIODICAL MAINTENANCE PROCEDURE DF-625

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

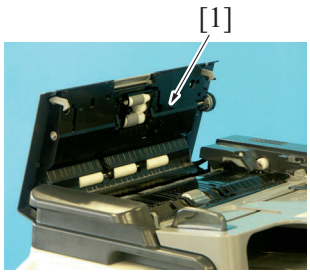
4.1 Paper feed section (DF-625)

4.1.1 Replacing the separation roller (DF-625)

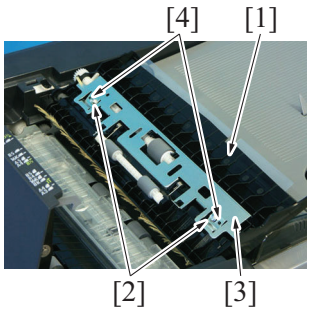
(1) Periodically replacing parts/cycle

Separation roller: Every 110,000 counts

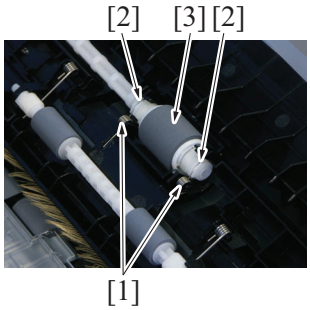
(2) Procedure



1. Open the upper door [1].

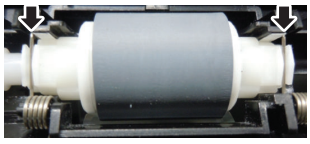


2. Open the cover [1], remove two screws [2].
3. Remove the plate [3].
   NOTE
   - **For mounting the plate [3], align the positioning pins [4] at two positions.**

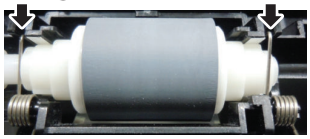


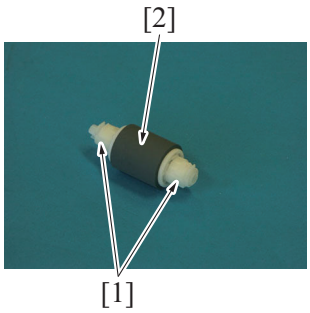
4. Remove two springs [1].
   NOTE
   - **For installing the spring [1], make sure that the spring [1] is set to the groove of the bearing [2].**
   - **If the spring [1] is not set to the groove of the bearing [2], document feed error, shaft breakage, noise and other troubles may occur.**
5. Remove the separation roller assy [3] from the shaft.

< OK >



< NG >





6. Remove two bearings [1] and the separation roller [2].
NOTE
- **When installing the bearing [1], use care so that it is installed in the right direction.**
- **When installing the separation roller [2], connect it to the connecting part of the shaft properly.**

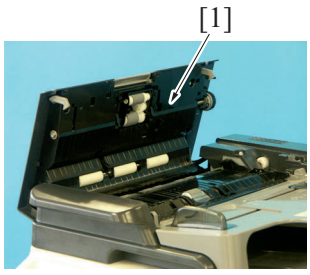
7. To reinstall, reverse the order of removal.
8. Turn ON the power switch.
9. Select [SERVICE MODE] -> [CLEAR DATA] -> [PM COUNTER] -> [ADF FEED] and clear the counter value.

4.1.2 Cleaning of the pick-up roller/feed roller/separation roller (DF-625)

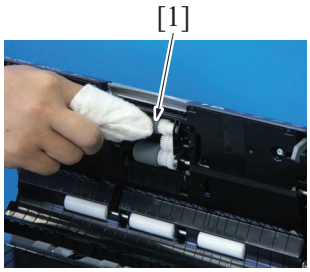
(1) Periodically cleaning parts/cycle

Pick-up roller: Every 55,000 counts
Feed roller: Every 55,000 counts
Separation roller: Every 55,000 counts

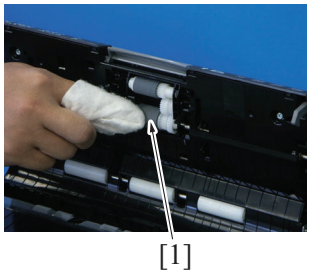
(2) Procedure



1. Open the upper door [1].

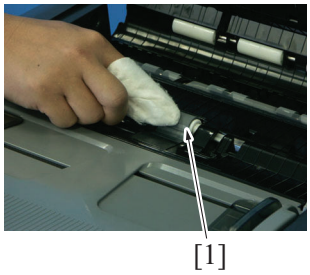


2. Using a cleaning pad with alcohol, wipe the pick-up roller [1] clean of dirt.



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

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



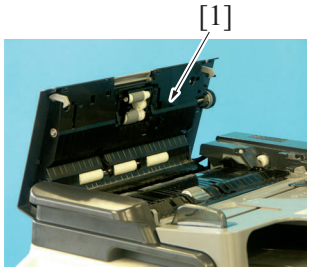
4.1.3 Cleaning of the document transport sensor (DF-625)

(1) Periodically cleaning parts/cycle

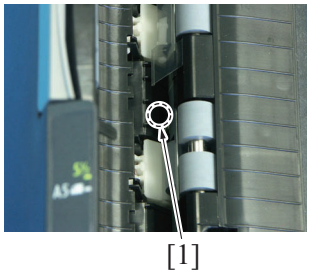
Document transport sensor: Every 55,000 counts

(2) Procedure

1. Open the upper door [1].



2. Clean the document transport sensor [1] with blower brush or similar item.



4.2 Conveyance section (DF-625)

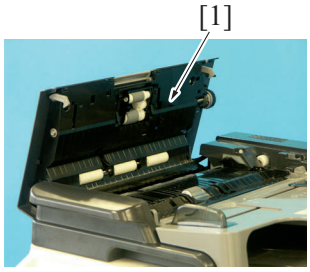
4.2.1 Cleaning of the roller and rolls (DF-625)

(1) Periodically cleaning parts/cycle

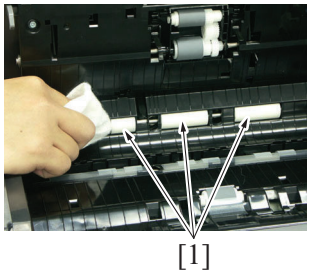
Roller and rolls: Every 55,000 counts

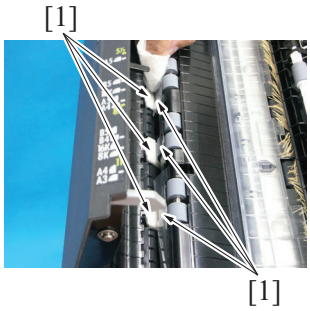
(2) Procedure

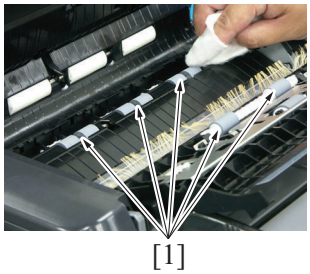
1. Open the upper door [1].



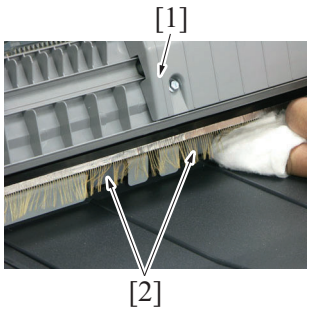
2. Using a cleaning pad with alcohol, wipe the roller [1] clean of dirt.



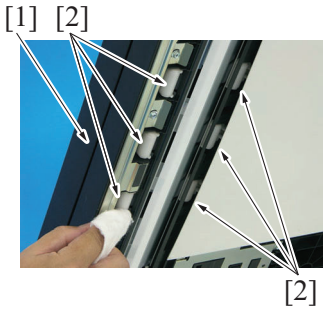




3. Open the ADF document feed tray [1].
4. Using a cleaning pad with alcohol, wipe the roller [2] clean of dirt.



5. Open the reverse automatic document feeder [1].
6. Using a cleaning pad with alcohol, wipe the roller [2] clean of dirt.



4.3 Scanning section (DF-625)

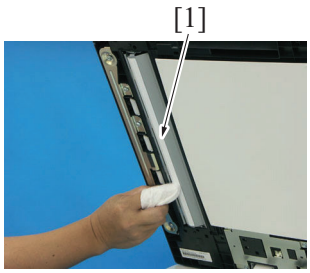
4.3.1 Cleaning of the scanning guide (DF-625)

(1) Periodically cleaning parts/cycle

Scanning guide: Every 55,000 counts

(2) Procedure

1. Open the reverse automatic document feeder.



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

5. PERIODICAL MAINTENANCE PROCEDURE PF-507

5.1 Paper feed section (PF-507)

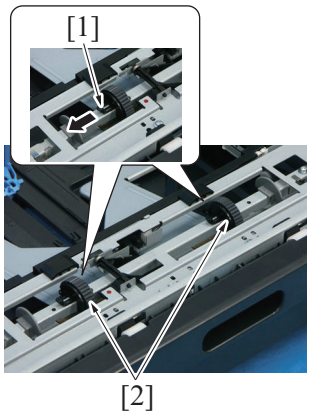
5.1.1 Replacing the feed roller (PF-507)

(1) Periodically replacing parts/cycle

Feed roller: Every 165,000 counts

(2) Procedure

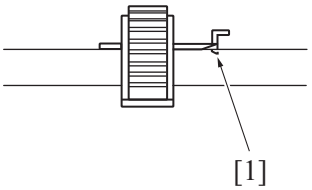
1. Remove the paper feeder unit.
   G.3.3.3 Paper Feeder Unit (PF-507)



2. Remove the feed roller lock [1]. Then, slide and take off two feed rollers [2].

NOTE

- **Make sure that the feed roller lock [1] is in position.**



3. To reinstall, reverse the order of removal.
4. Turn ON the power switch.
5. Select [SERVICE MODE] -> [CLEAR DATA] -> [PM COUNTER], and reset the counter value of the tray which feed roller was replaced. ([TRAY2],[TRAY3],[TRAY4],[TRAY5])

6. PERIODICAL MAINTENANCE PROCEDURE MB-505

6.1 Paper feed section (MB-505)

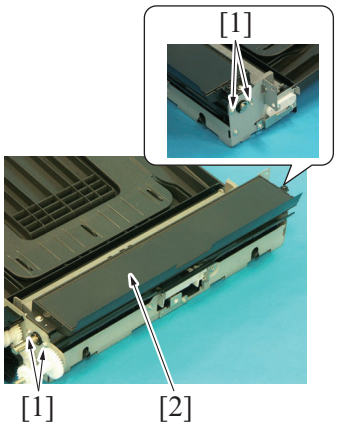
6.1.1 Replacing the feed roller (MB-505)

(1) Periodically replacing parts/cycle

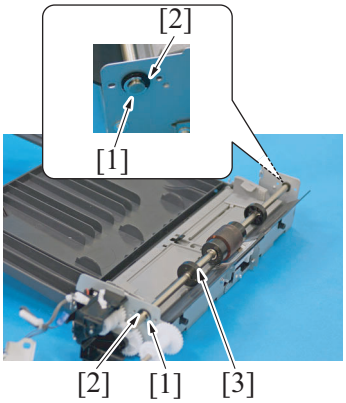
Feed roller: Every 165,000 counts

(2) Procedure

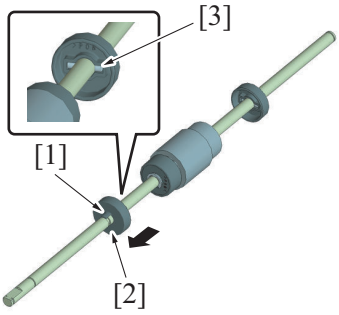
1. Remove the multi bypass tray.
   G.3.4.1 Multi Bypass Tray (MB-505)
2. Remove the bypass paper feed clutch.
   G.3.4.2 Bypass paper feed clutch (CL1) (MB-505)



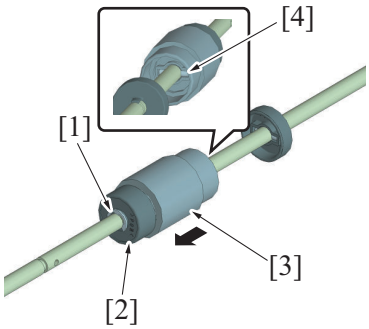
3. Remove four screws [1], and remove the upper cover [2].



4. Remove two E-rings [1] and two bearings [2].
5. Remove the feed roller assy [3].



6. While releasing the tab [1], remove the collar [2].
   NOTE
   - **Be careful not to lose shaft [3] at this time.**



7. Remove the E-ring [1], and remove the collar [2].
8. Remove the feed roller [3].
   NOTE
   - **Be careful not to lose shaft [4] at this time.**

9. To reinstall, reverse the order of removal.
10. Turn ON the power switch.
11. Select [SERVICE MODE] -> [CLEAR DATA] -> [PM COUNTER] -> [BYPASS] and clear the counter value.

NOTE

- **Replace the feed roller and separation roller assy at the same time.**

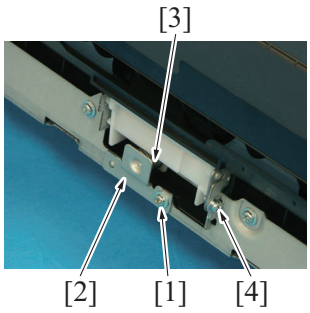
6.1.2 Replacing the separation roller assy (MB-505)

(1) Periodically replacing parts/cycle

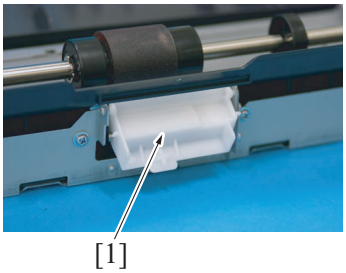
Separation roller assy: Every 165,000 counts

(2) Procedure

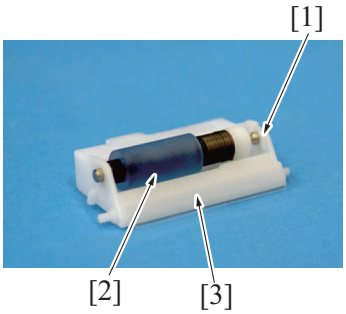
1. Remove the multi bypass tray.
   G.3.4.1 Multi Bypass Tray (MB-505)



2. Remove the screw [1].
3. Remove the fixed sheet metal [2] and the spring [3].
4. Loosen the screw [4].



5. Remove the separation roller assy [1].



6. Remove the C-clip [1], and remove the separation roller assy [2].

NOTE

- **Take care to avoid scratching or creasing the film [3].**

7. To reinstall, reverse the order of removal.
8. Turn ON the power switch.
9. Select [SERVICE MODE] -> [CLEAR DATA] -> [PM COUNTER] -> [BYPASS] and clear the counter value.

NOTE

- **Replace the feed roller and separation roller assy at the same time.**

G DISASSEMBLING/REASSEMBLING

1. Disassembly/adjustment prohibited items

1.1 Disassembly/adjustment prohibited items

1.1.1 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.**

1.1.2 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.**

1.1.3 Variable resistors on board

NOTE

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

1.1.4 Removal of PWBs

WARNING

- To avoid electric shock, after turning OFF the power switch, do not touch the DC power supply unit for 10 minutes.
  If the DC power supply unit is faulty, it may take time before its voltage drops sufficiently.

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.

1.1.5 Warnings for disassembly

⚠WARNING

- When accessing a hard-to-view or narrow spot, be careful about sharp edges and burrs on the frame and parts.
  They may injure your hands or fingers.
- If it is absolutely necessary to service the machine with the door open or external covers removed, always be attentive to the motion of the internal parts.
  A normally protected part may cause unexpected hazards.
- When removing a part that secures a motor, gear, or other moving part, disassembling a unit, or reinstalling any of such parts and units, be careful about moving parts and use care not to drop any part or unit. During the service procedure, give sufficient support for any heavy unit.
  You may be injured by a falling part or unit.

1.1.6 Precautions/warnings during setup or transportation

⚠WARNING

- Whenever mounting an option on the machine, be attentive to the motion of the other workers performing the task.
  Another worker may be injured by a pinch point between the machine and the option.
- When mounting an option on the machine, be careful about the clearance between the machine and the option.
  You may be injured with your finger or hand pinched between the machine and the option.

⚠CAUTION

- Do not leave the machine unattended during transportation, installation, and/or inspection.
  If the machine is left unattended, face protrusions toward the wall or take other necessary precautions to prevent a user or other person in the area from stumbling over a protrusion of the machine or being caught by a cable, possibly causing a fall to the floor or other personal injury.

1.2 Units from which removing is prohibited

1.2.1 PH unit

(1) Reason for prohibition

- The laser runs inside the PH unit. Opening the cover may cause dust to enter and interrupt the laser. Do no remove any screw which may disassemble the PH unit.

1.2.2 Fusing unit

(1) Reason for prohibition

- Inner part of the fusing unit and the position of the fusing belt are adjusted prior to shipping. Do not remove any screw which may disassemble the fusing unit.

2. bizhub 235/215/195

2.1 Disassembly/reassembly parts list

2.1.1 Exterior parts

Part name	Ref. page
Front door	G.2.2.1 Front door
Front cover	G.2.2.2 Front cover
Left cover	G.2.2.3 Left cover
Right rear cover	G.2.2.4 Right rear cover
Right lower cover	G.2.2.5 Right lower cover
Rear cover	G.2.2.6 Rear cover
Scanner right cover	G.2.2.7 Scanner right cover
Paper exit rear cover	G.2.2.8 Paper exit rear cover
Paper exit tray (left) / Paper exit tray (right)	G.2.2.9 Paper exit tray (left) / Paper exit tray (right)
Control panel left cover	G.2.2.10 Control panel left cover
Control panel	G.2.2.11 Control panel
Original glass assy	G.2.2.12 Original glass assy

2.1.2 Units

Part name	Ref. page
Tray 1	G.2.3.1 Tray 1
PH unit	G.2.3.2 PH unit
CIS module (CIS)	G.2.3.3 CIS module (CIS)
Scanner unit	G.2.3.4 Scanner unit
Paper exit unit	G.2.3.5 Paper exit unit

2.1.3 Boards

Part name	Ref. page
MFP board (MFPB)	G.2.4.1 MFP board (MFPB)
High voltage unit (HV1)	G.2.4.2 High voltage unit (HV1)
DC power supply (DCPU)	G.2.4.3 DC power supply (DCPU)
BB Module board (BBMB)	G.2.4.4 BB Module board (BBMB)

2.1.4 Others

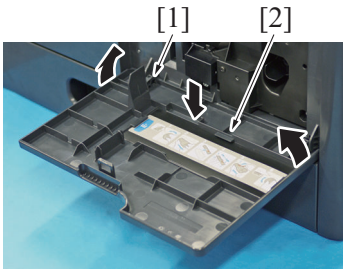
Part name	Ref. page
Ozone filter	G.2.5.1 Ozone filter
Main motor (M1)	G.2.5.2 Main motor (M1)
Toner supply motor (M2)	G.2.5.3 Toner supply motor (M2)
Scanner motor (M3)	G.2.5.4 Scanner motor (M3)
Switchback motor (M4)	G.2.5.5 Switchback motor (M4)
Fusing cooling fan motor (FM1)	G.2.5.6 Fusing cooling fan motor (FM1)
Registration clutch (CL1)	G.2.5.7 Registration clutch (CL1)
Tray1 paper feed clutch (CL2)	G.2.5.8 Tray1 paper feed clutch (CL2)
Temperature/humidity sensor (TEM/HUM)	G.2.5.9 Temperature/humidity sensor (TEM/HUM)
Inch/metric sensor (PS6) assy (Asia Pacific only)	G.2.5.10 Inch/metric sensor (PS6) assy (Asia Pacific only)

2.2 Disassembly/reassembly procedure (Exterior parts)

2.2.1 Front door

(1) Procedure

1. Open the front door.



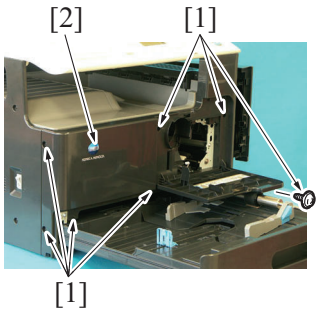
2. Bend the front door [2] slightly, and remove the front door [2] while releasing the tab [1].

3. To reinstall, reverse the order of removal.

2.2.2 Front cover

(1) Procedure

1. Remove the toner bottle.
   F.3.1.6 Replacing the toner bottle
2. Remove the imaging unit.
   F.3.1.10 Replacing the imaging unit
3. Slide out the tray 1.

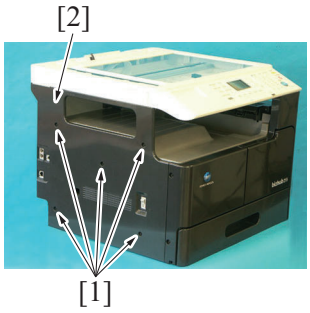


4. Remove seven screws [1], and remove the front cover [2].

5. To reinstall, reverse the order of removal.

2.2.3 Left cover

(1) Procedure

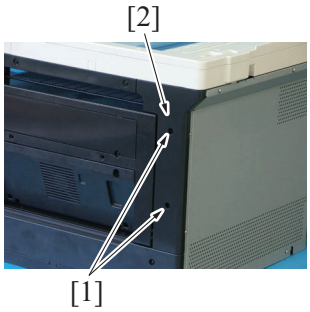


1. Remove five screws [1], and remove the left cover [2].

2. To reinstall, reverse the order of removal.

2.2.4 Right rear cover

(1) Procedure



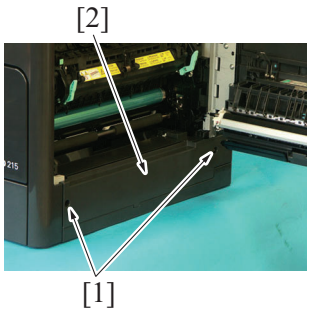
1. Remove two screws [1], and remove the right rear cover [2].

2. To reinstall, reverse the order of removal.

2.2.5 Right lower cover

(1) Procedure

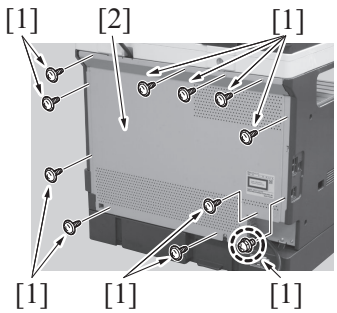
1. Open the right door.



2. Remove two screws [1], and remove the right lower cover [2].
3. To reinstall, reverse the order of removal.

2.2.6 Rear cover

(1) Procedure

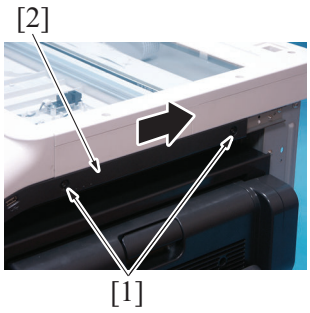


1. Remove eleven screws [1], and remove the rear cover [2].
   NOTE
   - **When reinstalling the rear cover, note that only the circled screw is different from the other screws.**
2. To reinstall, reverse the order of removal.

2.2.7 Scanner right cover

(1) Procedure

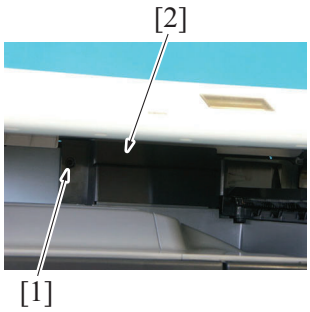
1. Remove the right rear cover.
   G.2.2.4 Right rear cover



2. Remove two screws [1], and remove the scanner right cover [2] by moving it to the right side.
3. To reinstall, reverse the order of removal.

2.2.8 Paper exit rear cover

(1) Procedure

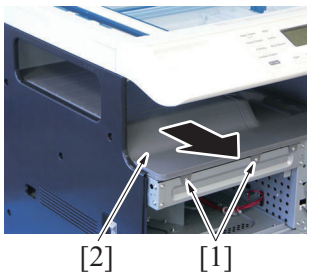


1. Remove the screw [1], and remove the paper exit rear cover [2].
2. To reinstall, reverse the order of removal.

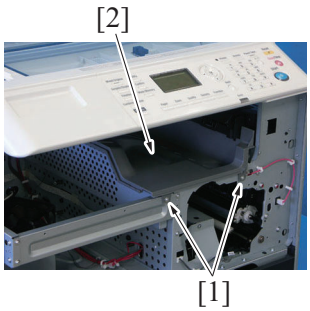
2.2.9 Paper exit tray (left) / Paper exit tray (right)

(1) Procedure

1. Remove the toner bottle.
   F.3.1.6 Replacing the toner bottle
2. Remove the imaging unit.
   F.3.1.10 Replacing the imaging unit
3. Remove the front cover.
   G.2.2.2 Front cover
4. Remove the paper exit rear cover.
   G.2.2.8 Paper exit rear cover
5. Remove two screws [1], and remove the paper exit tray (left) [2].



6. Remove two screws [1], and remove the paper exit tray (right) [2].

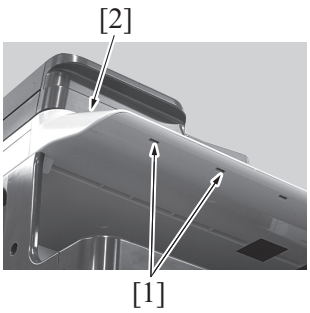


7. To reinstall, reverse the order of removal.

2.2.10 Control panel left cover

(1) Procedure

1. Unhook two tabs [1], and remove the control panel left caver [2].

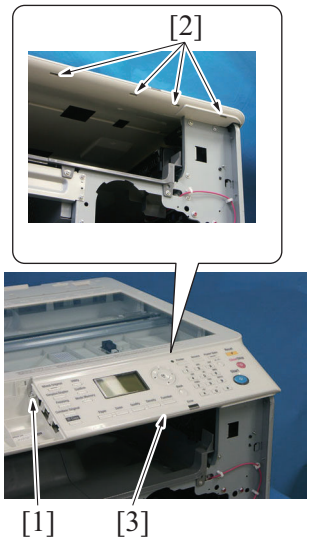


2. To reinstall, reverse the order of removal.

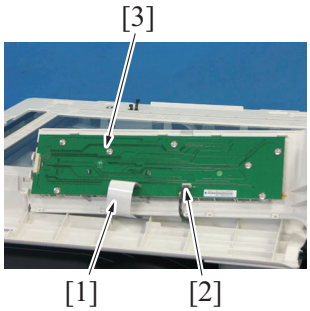
2.2.11 Control panel

(1) Procedure

1. Remove the toner bottle.
   F.3.1.6 Replacing the toner bottle
2. Remove the imaging unit.
   F.3.1.10 Replacing the imaging unit
3. Remove the front cover.
   G.2.2.2 Front cover
4. Remove the right rear cover.
   G.2.2.4 Right rear cover
5. Remove the scanner right cover.
   G.2.2.7 Scanner right cover
6. Remove the control panel left cover.
   G.2.2.10 Control panel left cover



7. Remove the screw [1].
8. Unhook four tabs [2], and remove the operation panel [3].



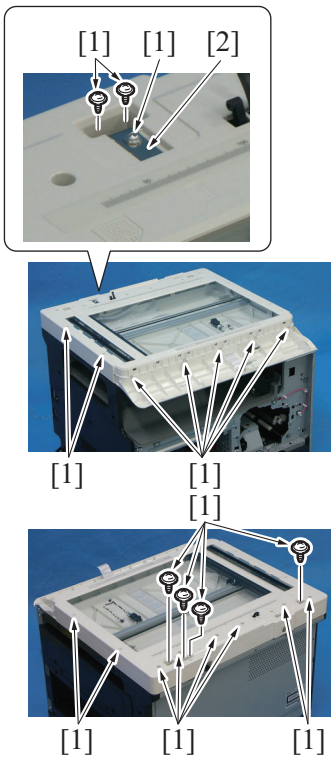
9. Disconnect the flat cable [1] and connector [2], and remove the operation panel [3].

10. To reinstall, reverse the order of removal.

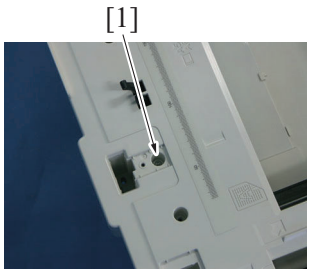
2.2.12 Original glass assy

(1) Procedure

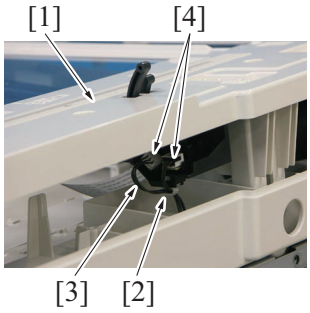
1. Remove the control panel left cover.
   G.2.2.10 Control panel left cover
2. Remove the control panel.
   G.2.2.11 Control panel
3. Remove the rear cover.
   G.2.2.6 Rear cover



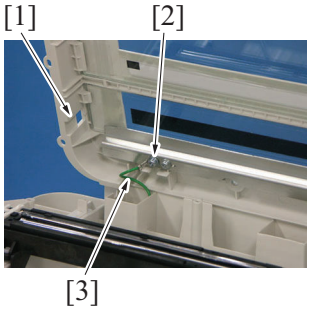
4. Remove twenty-two screws [1].
5. Remove the plate [2].



6. Remove the screw [1].



7. Raise the original glass assy [1], and remove the harness [2] from the wire saddle [3].
8. Disconnect two connectors [4].
   NOTE
   - **When plugging the disconnected connectors back, connect them to their original locations.**



9. Raise the original glass assy [1], and remove two screws [2], and remove the ground earth [3].

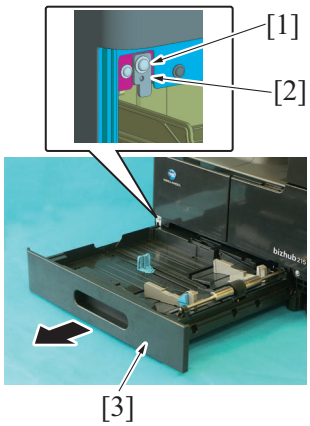
10. To reinstall, reverse the order of removal.

2.3 Disassembly/reassembly procedure (Units)

2.3.1 Tray 1

(1) Procedure

1. Slide out the tray 1.



2. Remove the screw [1], and remove the fixed sheet metal [2].
3. Remove the tray 1 [3].

4. To reinstall, reverse the order of removal.

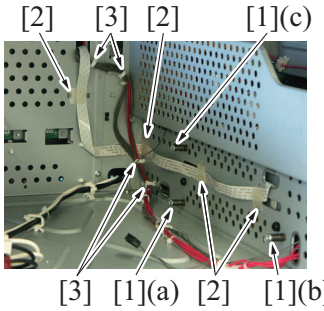
2.3.2 PH unit

⚠ WARNING

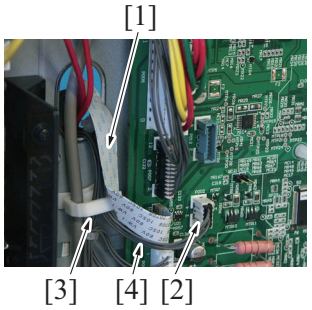
- Do not replace the printer head unit while the power is ON. Laser beam generated during the above mentioned activity may cause blindness.
- Do not disassemble or adjust the printer head unit. Laser beam generated during the above mentioned activity may cause blindness.

(1) Procedure

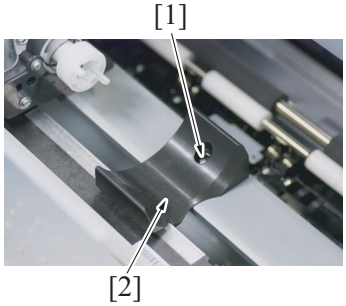
1. Remove the rear cover.
   G.2.2.6 Rear cover
2. Remove the toner bottle.
   F.3.1.6 Replacing the toner bottle
3. Remove the imaging unit.
   F.3.1.10 Replacing the imaging unit
4. Remove the front cover.
   G.2.2.2 Front cover
5. Remove the paper exit tray (left) and paper exit tray (right).
   G.2.2.9 Paper exit tray (left) / Paper exit tray (right)



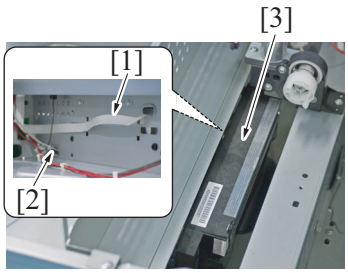
6. Remove three screws [1].
   NOTE
   - **Be careful not to lose spring at this time.**
   - **When reinstalling the screws, tighten them in the following order: (a), (b), (c).**
7. Remove four flat cable clamps [2].
8. Remove the harness from four wire saddles [3].



9. Disconnect the flat cable (P001) [1] and the connector (P002) [2] on the MFP board.
10. Remove the harness [4] from the wire saddle [3].



11. Remove the screw [1] and the bracket [2].



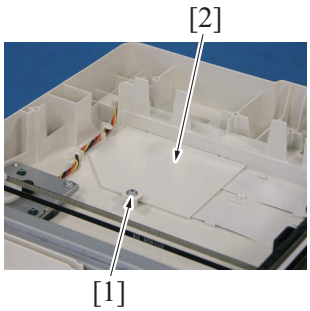
12. Pull out the flat cable [1] and the harness [2], and remove the PH unit [3].

13. To reinstall, reverse the order of removal.
14. Turn ON the power switch.
15. Select [SERVICE MODE] -> [CLEAR DATA] -> [SUPPLIES COUNTER] -> [PH Start] and clear the counter value.
16. Select [SERVICE MODE] -> [CLEAR DATA] -> [SUPPLIES COUNTER] -> [PH Turn] and clear the counter value.

2.3.3 CIS module (CIS)

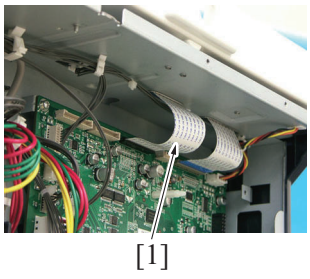
(1) Procedure

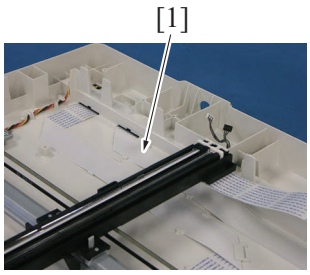
1. Remove the tonner bottle.
   F.3.1.6 Replacing the toner bottle
2. Remove the imaging unit.
   F.3.1.10 Replacing the imaging unit
3. Remove the front cover.
   G.2.2.2 Front cover
4. Remove the control panel left cover.
   G.2.2.10 Control panel left cover
5. Remove the scanner right cover.
   G.2.2.7 Scanner right cover
6. Remove the control panel.
   G.2.2.11 Control panel
7. Remove the rear cover.
   G.2.2.6 Rear cover
8. Remove the original glass assy.
   G.2.2.12 Original glass assy



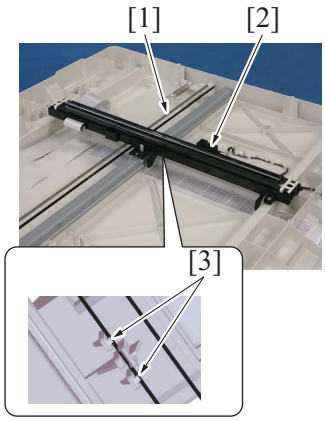
9. Remove the screw [1], and remove the cover [2].

10. Disconnect the connector (P102) [1] on the MFP board.





11. Pull out the flat cable [1].



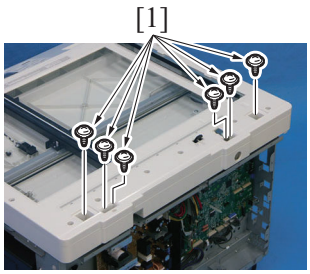
12. Remove the CIS module [2] from the belt [1].
NOTE
- **When mounting the CIS module, make sure that the belt is held by two CIS module tabs [3] as shown on the illustration.**

13. To reinstall, reverse the order of removal.

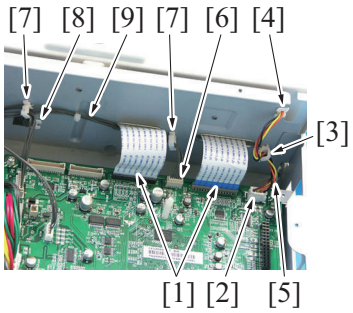
2.3.4 Scanner unit

(1) Procedure

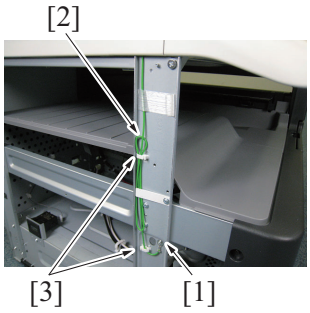
1. Remove the toner bottle.
   F.3.1.6 Replacing the toner bottle
2. Remove the imaging unit.
   F.3.1.10 Replacing the imaging unit
3. Remove the front cover.
   G.2.2.2 Front cover
4. Remove the left cover.
   G.2.2.3 Left cover
5. Remove the right rear cover.
   G.2.2.4 Right rear cover
6. Remove the scanner right cover.
   G.2.2.7 Scanner right cover
7. Remove the rear cover.
   G.2.2.6 Rear cover



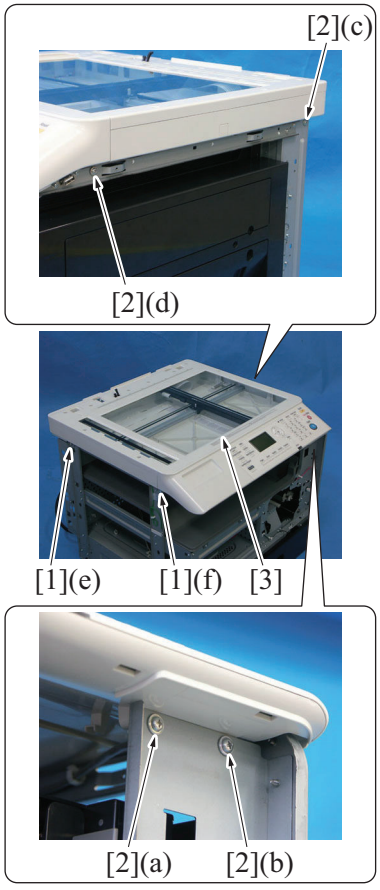
8. Remove six screws [1].



9. Disconnect two flat cables (P102, P103) [1].
10. Disconnect the connector (P101) [2].
11. Remove the harness [5] from the wire saddle [3] and the edge cover [4].
12. Disconnect the connector (P108) [6].
13. Remove the harness [9] from two wire saddles [7] and the edge cover [8].



14. Remove the screw [1].
15. Remove the grand earth [2] from two wire saddles [3].



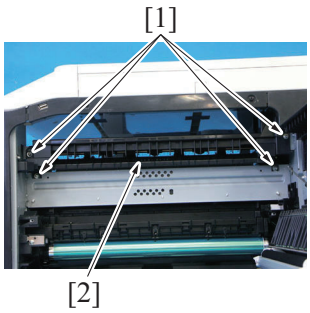
16. Remove two shoulder screws [1] and four screws [2], and remove the scanner unit [3].
NOTE
- **To reinstall the scanner unit, place the machine on the top of a flat table.**
- **To install the screws, make sure to tighten them in the order shown below.**
[2](a), [2](b), [2](c), [2](d), [1](e), [1](f)

17. To reinstall, reverse the order of removal.

2.3.5 Paper exit unit

(1) Procedure

1. Open the right door.
2. Remove the fusing unit.
F.3.3.1 Replacing the fusing unit



3. Remove the four screws [1], and remove the paper exit unit [2].

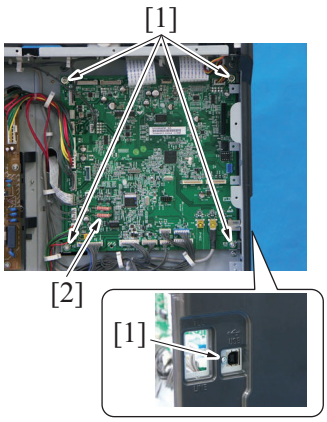
4. To reinstall, reverse the order of removal.

2.4 Disassembly/reassembly procedure (Boards)

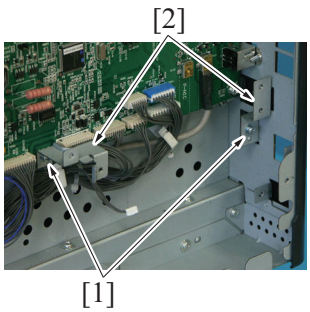
2.4.1 MFP board (MFPB)

(1) Procedure

1. Remove the rear cover.
   G.2.2.6 Rear cover
2. Remove the BB module board.
   G.2.4.4 BB Module board (BBMB)
3. Remove the FAX board.
   G.3.6.1 FAX board (FAXB) (FK-510)
4. Remove the PCL/NIC board or NIC board.
   G.3.7.1 PCL/NIC board (PNICB)/NIC board (NICB) (IC-209/NC-504)



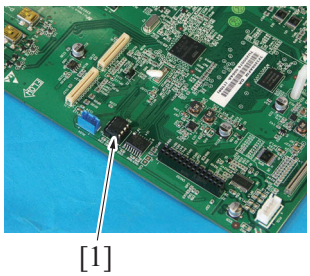
5. Disconnect all connectors from the MFP board.
6. Remove five screws [1], and remove the MFP board [2].

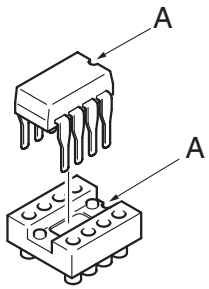


NOTE

- **Remove two screws [1] and two plate [2], when the FAX board , NIC board or PCL/NIC board are mounted.**

7. Remove the parameter chip (U16) [1] from the old MFP board and mount it on the new MFP board.





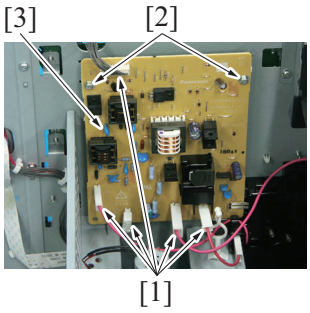
NOTE
- **When mounting the parameter chip (U16), align the notches (indicated by "A" in the illustration)**

8. To reinstall, reverse the order of removal.
   NOTE
   - **After replacing the MFP board, be sure to install the latest firmware.**
     J.1. Rewriting of firmware

2.4.2 High voltage unit (HV1)

(1) Procedure

1. Remove the toner bottle.
   F.3.1.6 Replacing the toner bottle
2. Remove the imaging unit.
   F.3.1.10 Replacing the imaging unit
3. Remove the front cover.
   G.2.2.2 Front cover
4. Remove the paper exit rear cover.
   G.2.2.8 Paper exit rear cover
5. Remove the paper exit tray (left) and paper exit tray (right).
   G.2.2.9 Paper exit tray (left) / Paper exit tray (right)



6. Disconnect five connectors [1] on the high voltage unit.
7. Remove two screws [2], and remove the high voltage unit [3].
8. To reinstall, reverse the order of removal.

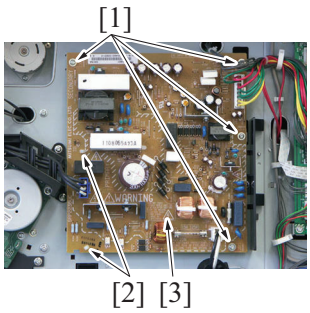
2.4.3 DC power supply (DCPU)

⚠WARNING

- To avoid electric shock, after turning OFF the power switch, do not touch the DC power supply unit for 10 minutes. If the DC power supply unit is faulty, it may take time before its voltage drops sufficiently.

(1) Procedure

1. Remove the rear cover.
   G.2.2.6 Rear cover

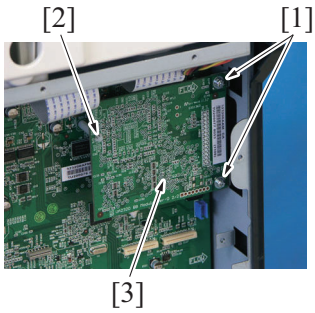


2. Disconnect all connectors from the DC power supply.
3. Remove four screws [1] and two PWB supports [2], and remove the DC power supply [3].
   NOTE
   - **When reinstalling the DC power supply, be sure to note the following points.**
     - **Make sure that no harness is caught on the back of the board.**
     - **Make sure that no harness is caught in the notch on the plate.**
4. To reinstall, reverse the order of removal.

2.4.4 BB Module board (BBMB)

(1) Procedure

1. Remove the rear cover.
   G.2.2.6 Rear cover



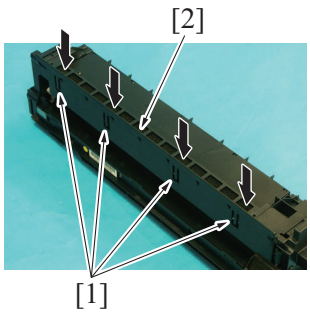
2. Remove two screws [1] and the PWB support [2], and remove the BB module board [3].
3. To reinstall, reverse the order of removal.

2.5 Disassembly/reassembly procedure (Others)

2.5.1 Ozone filter

(1) Procedure

1. Remove the toner bottle.
   F.3.1.6 Replacing the toner bottle
2. Remove the imaging unit.
   F.3.1.10 Replacing the imaging unit

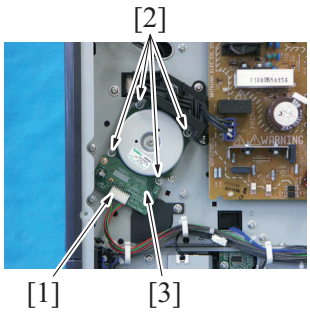


3. While releasing four tabs [1], remove the ozone filter [2] by pressing it through the hole.
4. To reinstall, reverse the order of removal.
5. Turn ON the power switch.
6. Select [SERVICE MODE] -> [CLEAR DATA] -> [PM COUNTER] -> [OZONE] and clear the counter value.

2.5.2 Main motor (M1)

(1) Procedure

1. Remove the rear cover.
   G.2.2.6 Rear cover



2. Disconnect the connector [1].
3. Remove four screws (M 3 mm x 6 mm) [2], and remove the main motor [3].

NOTE

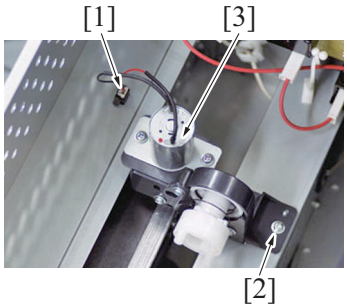
- **When reinstalling the main motor, be sure to use the removed screws [2]. Installing the screws that are not specified may damage the gear connected to the main motor.**

4. To reinstall, reverse the order of removal.

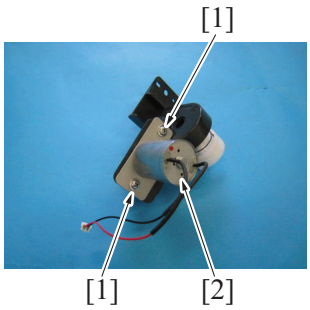
2.5.3 Toner supply motor (M2)

(1) Procedure

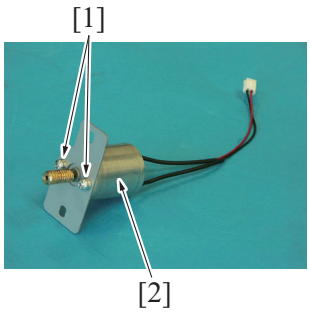
1. Remove the toner bottle.
   F.3.1.6 Replacing the toner bottle
2. Remove the imaging unit.
   F.3.1.10 Replacing the imaging unit
3. Remove the front cover.
   G.2.2.2 Front cover
4. Remove the paper exit tray (left) and paper exit tray (right).
   G.2.2.9 Paper exit tray (left) / Paper exit tray (right)



5. Disconnect the connector [1].
6. Remove the screw [2], and remove the toner bottle drive assy [3].



7. Remove two screws [1], and remove the toner supply motor assy [2].



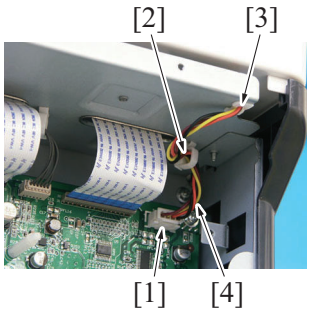
8. Remove two screws [1], and remove the toner supply motor [2].

9. To reinstall, reverse the order of removal.

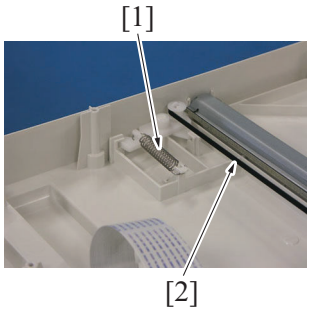
2.5.4 Scanner motor (M3)

(1) Procedure

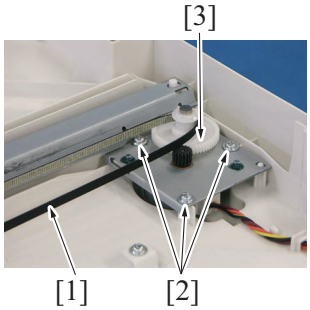
1. Remove the original glass assy.
   G.2.2.12 Original glass assy



2. Disconnect the connector (P101) [1] on the MFP board.
3. Pull out the harness [4] from the wire saddle [2] and the edge cover [3].



4. Remove the spring [1] to reduce the tension of the belt [2].



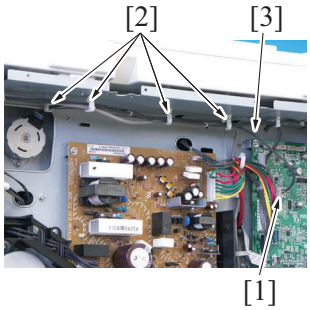
5. Remove the belt [1].
6. Remove three screws [2], and remove the scanner motor assy [3].

7. To reinstall, reverse the order of removal.

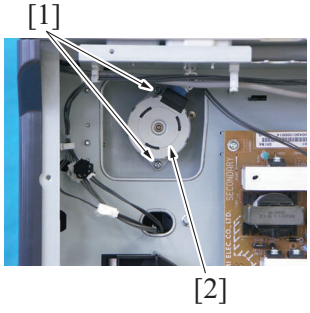
2.5.5 Switchback motor (M4)

(1) Procedure

1. Remove the rear cover.
   G.2.2.6 Rear cover



2. Disconnect the connector (P105) [1] on the MFP board.
3. Remove the harness [3] from four wire saddles [2].



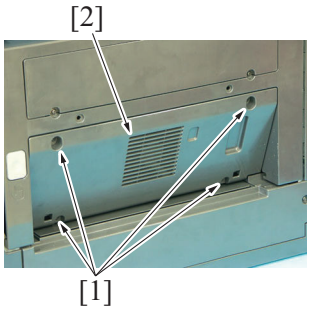
4. Remove two screws [1], and remove the switchback motor [2].

5. To reinstall, reverse the order of removal.

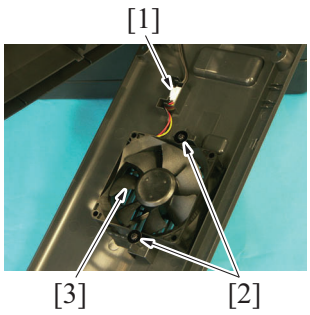
2.5.6 Fusing cooling fan motor (FM1)

(1) Procedure

1. Remove the automatic duplex unit (AD-509).
   G.3.5.2 Automatic Duplex Unit (AD-509)



2. Remove four screws [1], and remove the fan motor cover [2].
3. Open the right door.

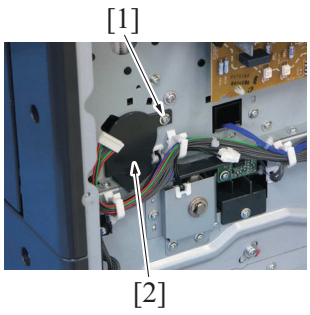


4. Disconnect the connector [1].
5. Remove two screws [2], and remove the fusing cooling fan motor [3].
6. To reinstall, reverse the order of removal.

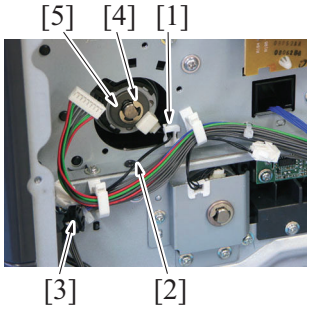
2.5.7 Registration clutch (CL1)

(1) Procedure

1. Remove the rear cover.
   G.2.2.6 Rear cover
2. Remove the main motor.
   G.2.5.2 Main motor (M1)



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

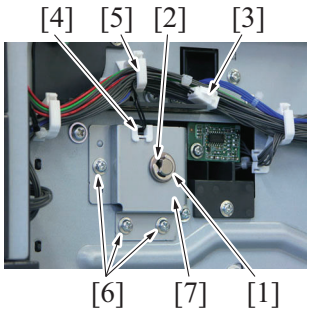


4. Remove the harness [2] from the edge cover [1].
5. Disconnect the connector [3].
6. Remove the E-ring [4], and remove the registration clutch [5].
7. To reinstall, reverse the order of removal.

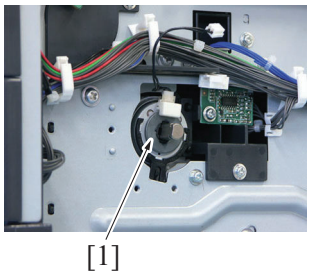
2.5.8 Tray1 paper feed clutch (CL2)

(1) Procedure

1. Remove the rear cover.
   G.2.2.6 Rear cover



2. Remove the E-ring [1] and bearing [2].
3. Disconnect the connector [3].
4. Remove the harness from the edge cover [4] and wire saddle [5].
5. Remove three screws [6], and remove the sheet metal [7].



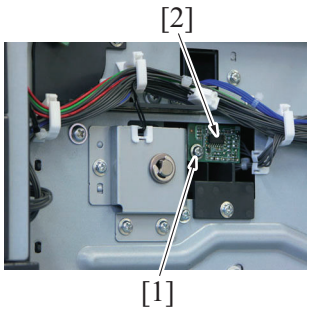
6. Remove the tray1 paper feed clutch [1].

7. To reinstall, reverse the order of removal.

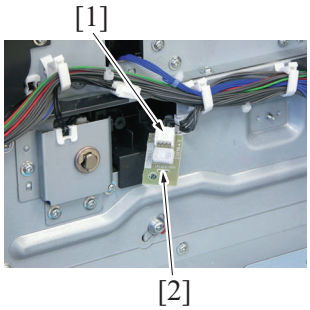
2.5.9 Temperature/humidity sensor (TEM/HUM)

(1) Procedure

1. Remove the rear cover.
   G.2.2.6 Rear cover



2. Remove the screw [1], and slide out temperature/humidity sensor [2].



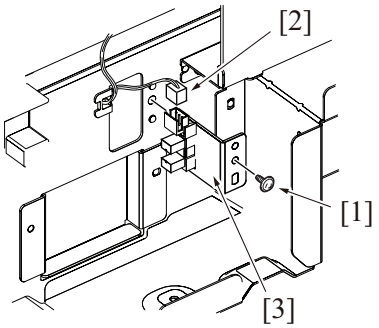
3. Disconnect the connector [1], and remove the temperature/humidity sensor [2].

4. To reinstall, reverse the order of removal.

2.5.10 Inch/metric sensor (PS6) assy (Asia Pacific only)

(1) Procedure

1. Remove the rear cover.
   G.2.2.6 Rear cover
2. Remove the speaker.
   G.3.6.3 Speaker (FK-510)



3. Remove the screw [1], disconnect the connector [2], and remove the inch/metric sensor assy [3].

4. To reinstall, reverse the order of removal.

3. Option

3.1 Disassembly/reassembly parts list

3.1.1 DF-625

Section	Part name	Ref. page
Exterior parts	Upper cover	G.3.2.1 Upper cover (DF-625)
	Front cover	G.3.2.2 Front cover (DF-625)
	Rear cover	G.3.2.3 Rear cover (DF-625)
	Original paper set tray	G.3.2.4 Original paper set tray (DF-625)
Units	Reverse Automatic Document Feeder (DF-625)	G.3.2.5 Reverse Automatic Document Feeder (DF-625)
	Upper door assy	G.3.2.6 Upper door assy (DF-625)
	Document conveyance unit	G.3.2.7 Document conveyance unit (DF-625)
Board	DF control board (DFCB)	G.3.2.8 DF control board (DFCB) (DF-625)
Others	Feed roller	G.3.2.9 Feed roller/Pick-up roller (DF-625)
	Pick-up roller	G.3.2.9 Feed roller/Pick-up roller (DF-625)
	DF motor (M1)	G.3.2.10 DF motor (M1) (DF-625)
	Document feed clutch (CL1)	G.3.2.11 Document feed clutch (CL1) (DF-625)
	Document registration clutch (CL2)	G.3.2.12 Document registration clutch (CL2) (DF-625)
	Switchback clutch (CL3)	G.3.2.13 Switchback clutch (CL3) (DF-625)

3.1.2 PF-507

Section	Part name	Ref. page
Exterior parts	Tray	G.3.3.1 Tray (PF-507)
	Rear cover	G.3.3.2 Rear cover (PF-507)
Unit	Paper Feeder Unit (PF-507)	G.3.3.3 Paper Feeder Unit (PF-507)
Board	PF drive board (PFDB)	G.3.3.4 PF drive board (PFDB) (PF-507)
Others	Paper size detect switch (S1)	G.3.3.5 Paper size detect switch (S1) (PF-507)
	Paper feed solenoid (SD1)	G.3.3.6 Paper feed solenoid (SD1) (PF-507)

3.1.3 MB-505

Section	Part name	Ref. page
Unit	Multi Bypass Tray (MB-505)	G.3.4.1 Multi Bypass Tray (MB-505)
Others	Bypass paper feed clutch (CL1)	G.3.4.2 Bypass paper feed clutch (CL1) (MB-505)
	Bypass pick-up solenoid (SD1)	G.3.4.3 Bypass pick-up solenoid (SD1) (MB-505)

3.1.4 AD-509

Section	Part name	Ref. page
Exterior part	Right cover	G.3.5.1 Right cover (AD-509)
Unit	Automatic Duplex Unit (AD-509)	G.3.5.2 Automatic Duplex Unit (AD-509)
Board	AD drive board (ADDB)	G.3.5.3 AD drive board (ADDB) (AD-509)
Others	AD motor (M1)	G.3.5.4 AD motor (M1) (AD-509)
	Cooling fan motor (FM2)	G.3.5.5 Cooling fan motor (FM2) (AD-509)

3.1.5 FK-510

Section	Part name	Ref. page
Board	FAX board (FAXB)	G.3.6.1 FAX board (FAXB) (FK-510)
Others	FAX control panel	G.3.6.2 FAX control panel (FK-510)
	Speaker	G.3.6.3 Speaker (FK-510)

3.1.6 IC-209/NC-504

Section	Part name	Ref. page
Board	PCL/NIC board (PNICB)/NIC board (NICB)	G.3.7.1 PCL/NIC board (PNICB)/NIC board (NICB) (IC-209/NC-504)

3.1.7 MC-504

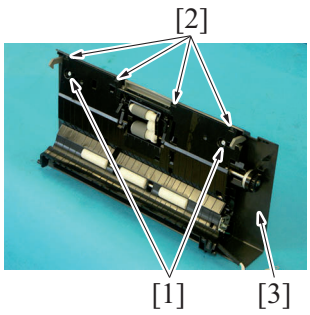
Section	Part name	Ref. page
Other	Mechanical Counter (MC-504)	G.3.8.1 Mechanical Counter (MC-504)

3.2 Disassembly/reassembly procedure(DF-625)

3.2.1 Upper cover (DF-625)

(1) Procedure

1. Remove the front cover.
   G.3.2.2 Front cover (DF-625)
2. Remove the rear cover.
   G.3.2.3 Rear cover (DF-625)
3. Remove the upper door assy.
   G.3.2.6 Upper door assy (DF-625)

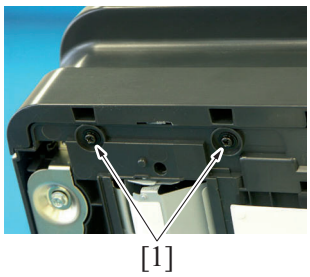


4. Remove two screws [1].
5. Unhook four tabs [2], and remove the upper cover [3].
6. To reinstall, reverse the order of removal.

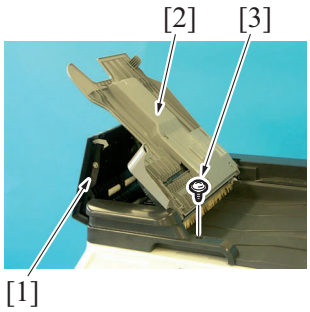
3.2.2 Front cover (DF-625)

(1) Procedure

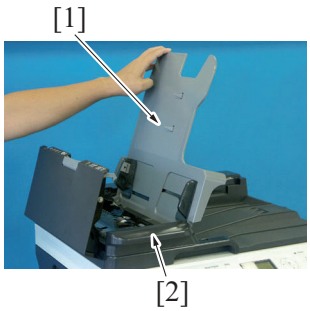
1. Open the reverse automatic document feeder.



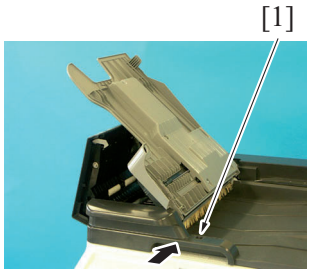
2. Remove two screws [1].
3. Close the reverse automatic document feeder.

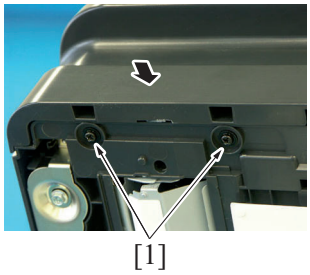


4. Open the upper door [1].
5. Open the original paper set tray [2], and remove the screw [3].



6. Set the original paper set tray [1] in vertical direction to remove the front cover [2].
7. To reinstall, reverse the order of removal.

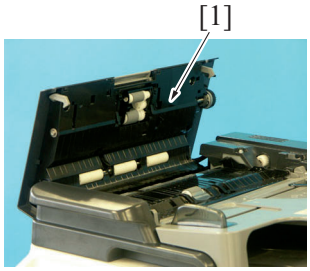




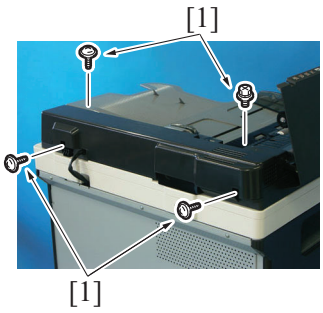
NOTE
- **When installing the front cover, press the cover in the direction of arrow to tighten three mounting screws [1].**

3.2.3 Rear cover (DF-625)

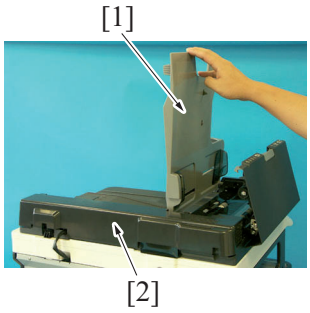
(1) Procedure



1. Remove the upper door [1].



2. Remove four screws [1].



3. Set the original paper set tray [1] in vertical direction to remove the rear cover [2].

4. To reinstall, reverse the order of removal.

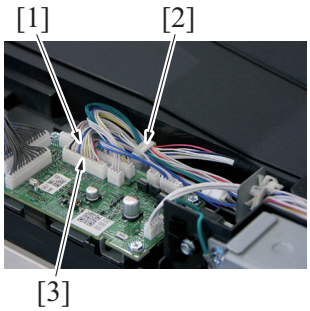
3.2.4 Original paper set tray (DF-625)

(1) Procedure

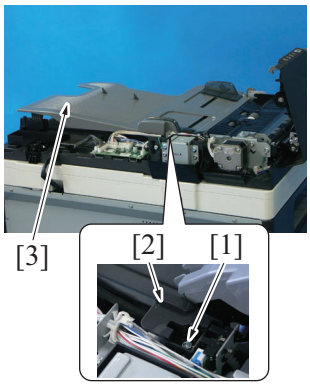
1. Remove the front cover.
   G.3.2.2 Front cover (DF-625)
2. Remove the rear cover.

G.3.2.3 Rear cover (DF-625)

3. Open the upper door.
4. Open the paper feed tray.



5. Remove the harness [1] from the wire saddle [2].
6. Disconnect the connector [3] from the DF control board.



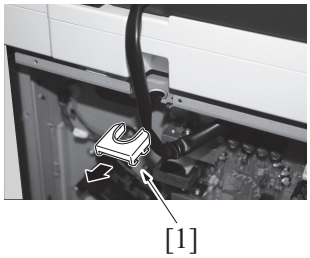
7. Remove the screw [1], and remove the cover [2].
8. Remove the original paper set tray [3].

9. To reinstall, reverse the order of removal.

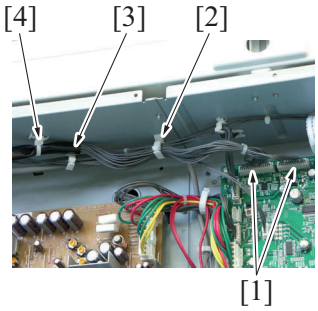
3.2.5 Reverse Automatic Document Feeder (DF-625)

(1) Procedure

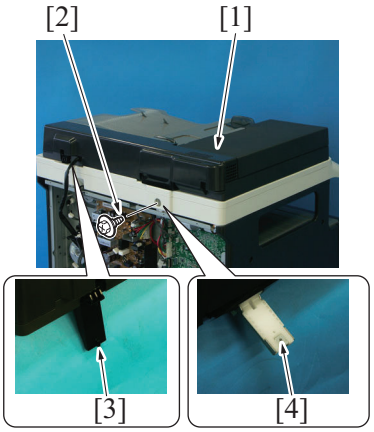
1. Remove the rear cover.
G.3.2.3 Rear cover (DF-625)



2. Remove the cover [1].



3. Disconnect two connector [1].
4. Remove the harness [3] from the wire saddle [2].
5. Remove the wiring harness band [4] from the main body.

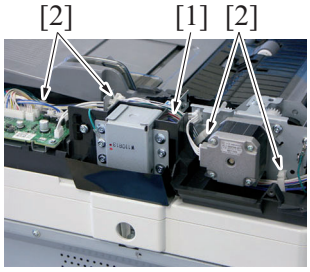


6. Remove the screw [2] while raising the reverse automatic document feeder [1].
7. Remove the reverse automatic document feeder [1].
   NOTE
   - **When removing the reverse automatic document feeder, the projection part [3] may catch the scanner unit to make it difficult to remove it. In that case, jolt the reverse automatic document feeder [1] slightly and lift it up.**
   - **Install the screw [2] to the screw hole [4] for mounting.**
8. To reinstall, reverse the order of removal.

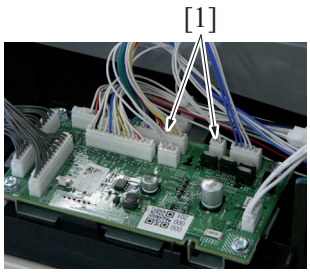
3.2.6 Upper door assy (DF-625)

(1) Procedure

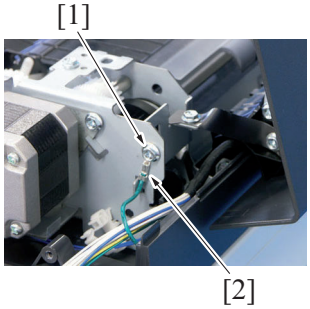
1. Remove the front cover.
   G.3.2.2 Front cover (DF-625)
2. Remove the rear cover.
   G.3.2.3 Rear cover (DF-625)



3. Remove the harness [1] from four wire saddles [2].

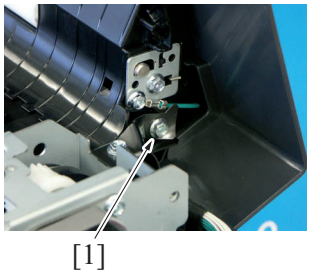


4. Disconnect two connectors [1].

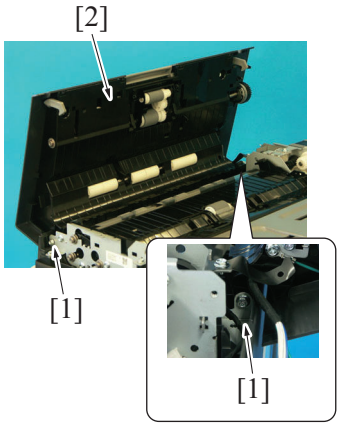


5. Remove the screw [1], and remove the grand earth [2].

6. Remove the screw [1].



7. Remove two screws [1], and remove the upper door assy [2].



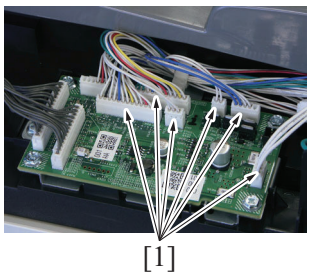
8. To reinstall, reverse the order of removal.

3.2.7 Document conveyance unit (DF-625)

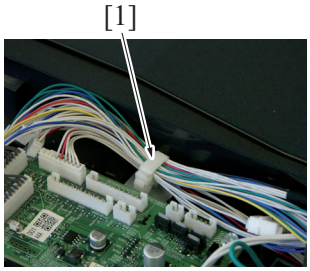
(1) Procedure

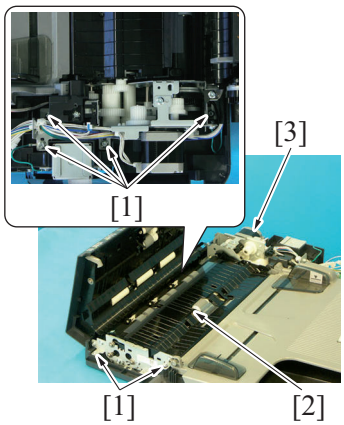
1. Remove the reverse automatic document feeder.
   G.3.2.5 Reverse Automatic Document Feeder (DF-625)
2. Remove the front cover.
   G.3.2.2 Front cover (DF-625)
3. Remove the rear cover.
   G.3.2.3 Rear cover (DF-625)

4. Disconnect six connectors [1].



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





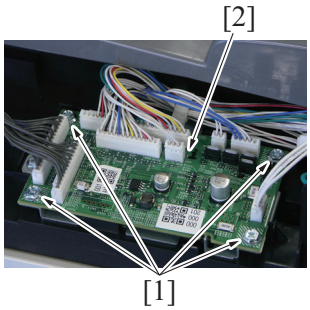
6. Remove six screws [1].
7. Remove the document conveyance unit [2].
   NOTE
   - **Do not hold the DF motor [3] when removing.**

8. To reinstall, reverse the order of removal.

3.2.8 DF control board (DFCB) (DF-625)

(1) Procedure

1. Remove the rear cover.
   G.3.2.3 Rear cover (DF-625)



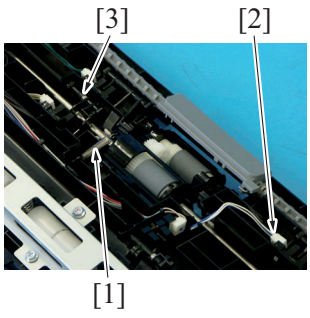
2. Disconnect all connectors from the DF control board.
3. Remove four screws [1], and remove the DF control board [2].

4. To reinstall, reverse the order of removal.

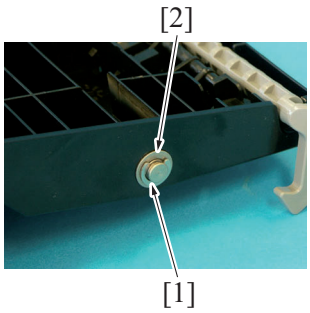
3.2.9 Feed roller/Pick-up roller (DF-625)

(1) Procedure

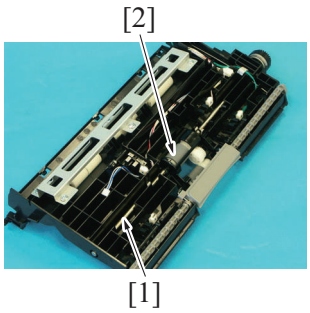
1. Remove the upper door assy.
   G.3.2.6 Upper door assy (DF-625)
2. Remove the upper cover.
   G.3.2.1 Upper cover (DF-625)



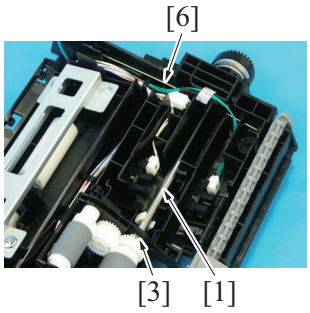
3. Remove the spring [1].
4. Disconnect the connector [2].
5. Remove the actuator [3].
   NOTE
   - **Be careful not to lose the spring mounted on the actuator [3].**



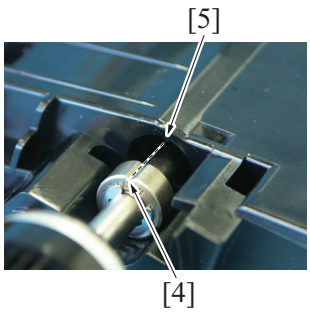
6. Remove the E-ring [1] and bush [2].

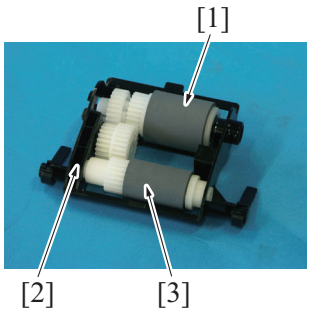


7. Slide the shaft [1], and lift one side of it to remove the roller assy [2].



NOTE
- **Be careful not to lose the pin [3].**
- **When installing the shaft [1], align the groove of the clutch [4] and the projection part of the cover [5] and press it in. Also, lift the shaft retainer [6] slightly since the shaft retainer [6] catches the clutch when pressing it in.**





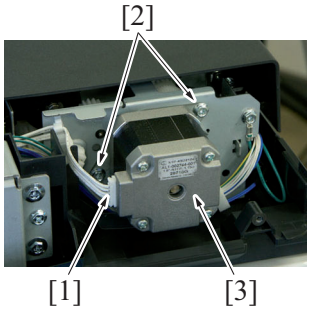
8. Remove the feed roller [1].
9. Open the roller holder [2] to right and left to remove the pickup roller [3].

10. To reinstall, reverse the order of removal.

3.2.10 DF motor (M1) (DF-625)

(1) Procedure

1. Remove the rear cover.
G.3.2.3 Rear cover (DF-625)



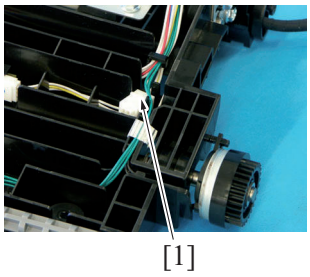
2. Disconnect the connector [1].
3. Remove two screws [2], and remove the DF motor [3].

4. To reinstall, reverse the order of removal.

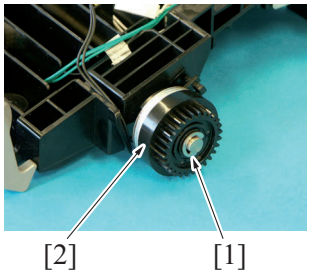
3.2.11 Document feed clutch (CL1) (DF-625)

(1) Procedure

1. Remove the upper door assy.
   G.3.2.6 Upper door assy (DF-625)
2. Remove the upper cover.
   G.3.2.1 Upper cover (DF-625)
3. Disconnect the connector [1].



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

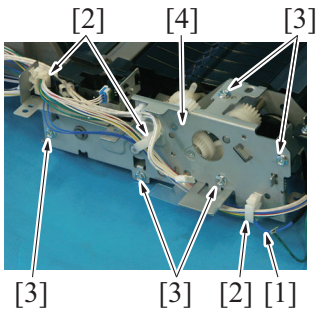


5. To reinstall, reverse the order of removal.

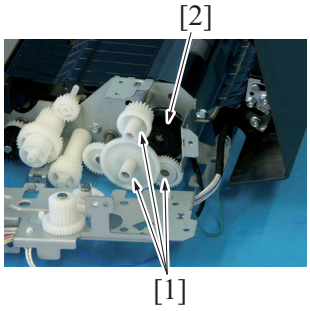
3.2.12 Document registration clutch (CL2) (DF-625)

(1) Procedure

1. Remove the scanner unit.
   G.3.2.7 Document conveyance unit (DF-625)
2. Remove the DF motor.
   G.3.2.10 DF motor (M1) (DF-625)
3. Remove the harness [1] from three wire saddles [2].
4. Remove five screws [3], and remove the plate [4].



5. Remove three gears [1], and remove the document registration clutch [2].



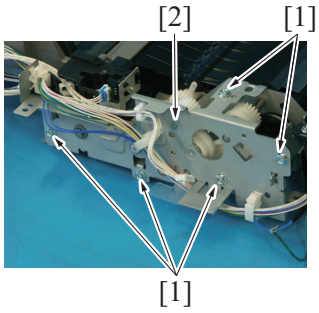
6. To reinstall, reverse the order of removal.

3.2.13 Switchback clutch (CL3) (DF-625)

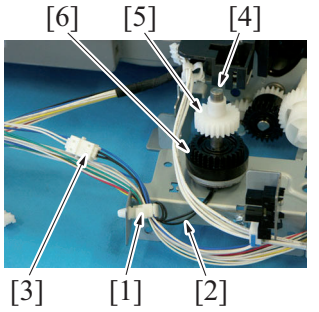
(1) Procedure

1. Remove the scanner unit.
   G.3.2.7 Document conveyance unit (DF-625)

2. Remove the DF motor.
G.3.2.10 DF motor (M1) (DF-625)



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



4. Remove the harness [2] from the wire saddle [1], and disconnect the connector [3].
5. Remove the shaft [4] and the gear [5].
6. Remove the switchback clutch [6].

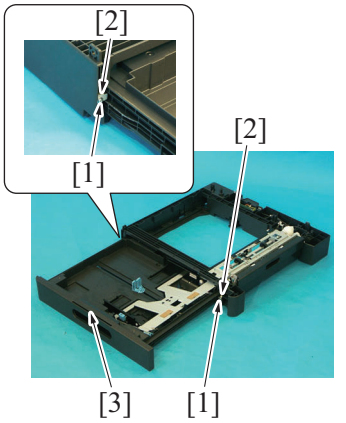
7. To reinstall, reverse the order of removal.

3.3 Disassembly/reassembly procedure (PF-507)

3.3.1 Tray (PF-507)

(1) Procedure

1. Slide out the tray.

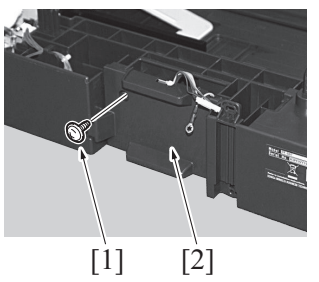


2. Remove two screws [1], and remove two metal plates [2].
3. Remove the tray [3].

4. To reinstall, reverse the order of removal.

3.3.2 Rear cover (PF-507)

(1) Procedure



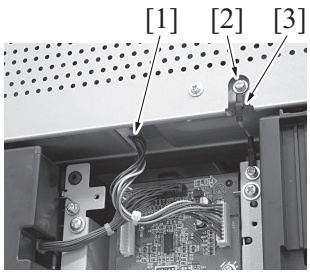
1. Remove the screw [1], and remove the rear cover [2].

2. To reinstall, reverse the order of removal.

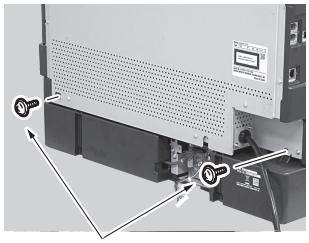
3.3.3 Paper Feeder Unit (PF-507)

(1) Procedure

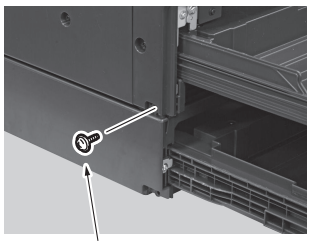
1. Remove the rear cover.
   G.3.3.2 Rear cover (PF-507)
2. Slide out the tray 1.
3. Slide out the tray 2.



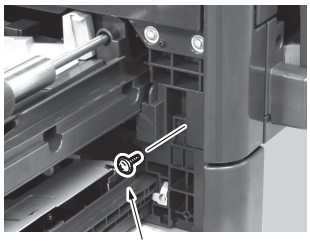
4. Disconnect the connector [1].
5. Remove the screw [2], and remove the grand earth [3].

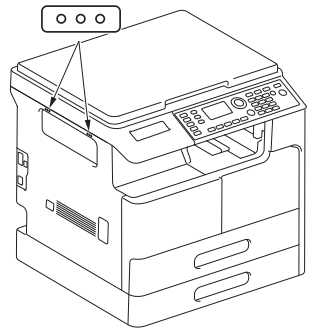


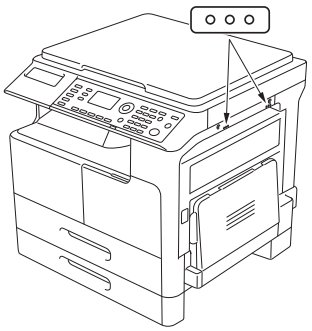
6. Remove two screws [1].



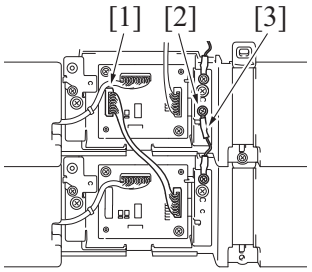
7. Remove two screws [1].



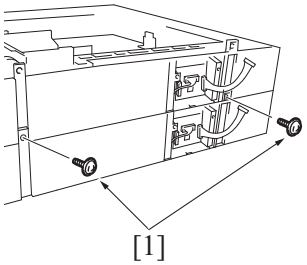




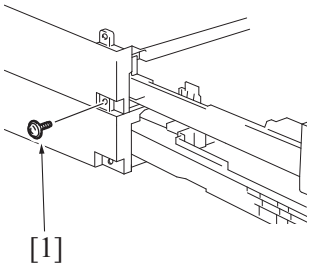
8. Hold the positions of the main unit as illustrated to lift it up, and remove the paper feeder unit.
NOTE
- **When more than one paper feeder units are installed, separate the paper feeder unit in the following procedure.**



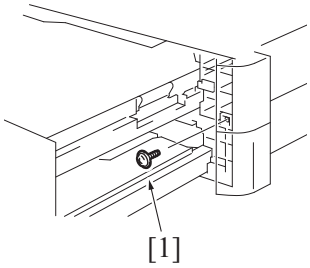
9. Disconnect the connector [1].
10. Remove the screw [2], and remove the grand earth [3].

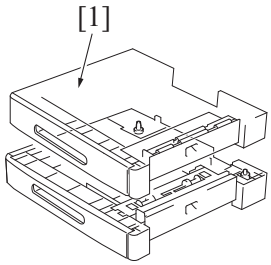


11. Remove two screws [1].



12. Remove two screws [1].





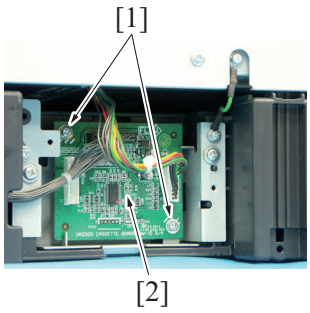
13. Remove the paper feeder unit [1].

14. To reinstall, reverse the order of removal.

3.3.4 PF drive board (PFDB) (PF-507)

(1) Procedure

1. Remove the rear cover.
G.3.3.2 Rear cover (PF-507)



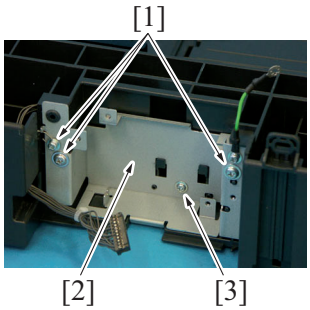
2. Disconnect all connectors from the PF drive board.
3. Remove two screws [1], and remove the PF drive board [2].

4. To reinstall, reverse the order of removal.

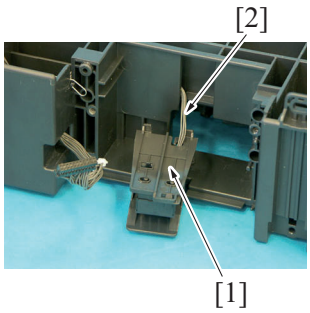
3.3.5 Paper size detect switch (S1) (PF-507)

(1) Procedure

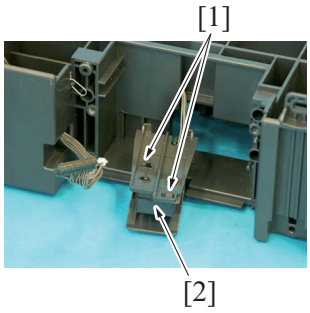
1. Remove the rear cover.
G.3.3.2 Rear cover (PF-507)
2. Remove the PF drive board.
G.3.3.4 PF drive board (PFDB) (PF-507)



3. Remove three screws [1], and slide out the metal plate [2].
4. Remove the screw [3], and remove the metal plate [2].



5. Slide out the paper size detect switch assy [1].
6. Remove harness [2] from the harness guide, disconnect the connector.



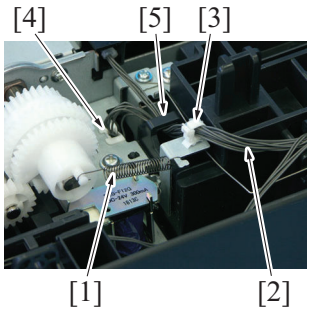
7. Unhook two tabs [1], remove the paper size detect switch [2].

8. To reinstall, reverse the order of removal.

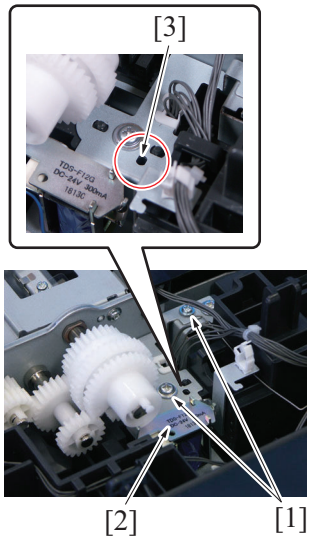
3.3.6 Paper feed solenoid (SD1) (PF-507)

(1) Procedure

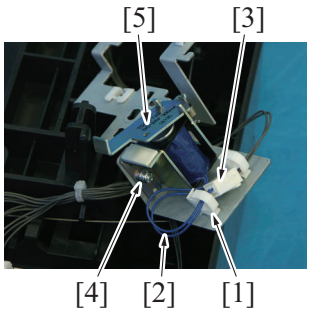
1. Remove the paper feeder unit.
G.3.3.3 Paper Feeder Unit (PF-507)



2. Remove the spring [1].
3. Remove the harness [2] from the wire saddle [3], edge cover [4], harness guide [5].



4. Remove two screws [1], and remove the paper feed solenoid assy [2].
NOTE
- **When reinstalling the paper feed solenoid assy [2], align the hole [3] on the paper feed solenoid assy with the hole on the paper feeder unit.**



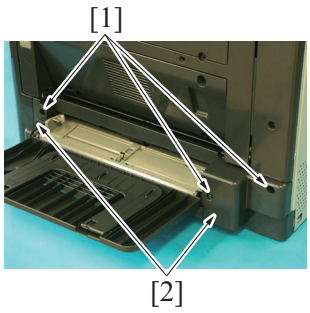
5. Remove the harness [2] from the wire saddle [1].
6. Remove the connector [3].
7. Remove the screw [4], and the paper feed solenoid [5].

8. To reinstall, reverse the order of removal.

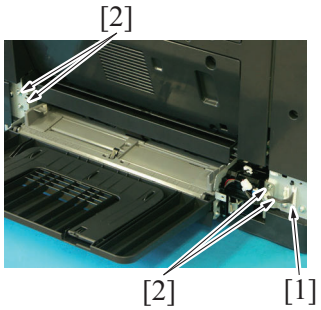
3.4 Disassembly/reassembly procedure (MB-505)

3.4.1 Multi Bypass Tray (MB-505)

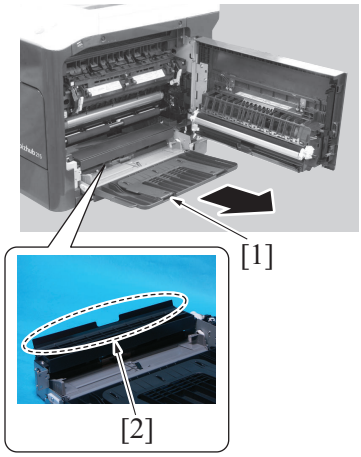
(1) Procedure



1. Remove three screws [1], and remove two covers [2].



2. Disconnect the connector [1].
3. Remove four screws [2].
4. Open the right door.



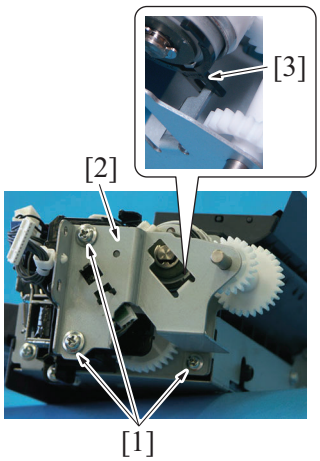
5. Remove the multi bypass tray [1].
NOTE
- **When removing or reinstalling the multi bypass tray, be careful not to damage or deform the guide sheet [2].**

6. To reinstall, reverse the order of removal.

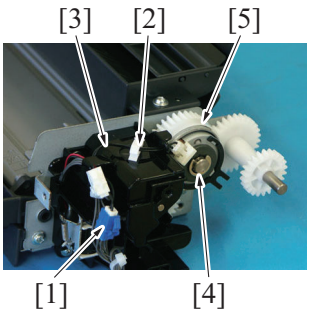
3.4.2 Bypass paper feed clutch (CL1) (MB-505)

(1) Procedure

1. Remove the multi bypass tray.
G.3.4.1 Multi Bypass Tray (MB-505)



2. Remove three screws [1], and remove the fixed sheet metal [2].
NOTE
- **When reinstalling the sheet metal [2], make sure that the projection of the sheet metal [2] is inserted into the opening of the rotation stopper [3] of the bypass paper feed clutch.**



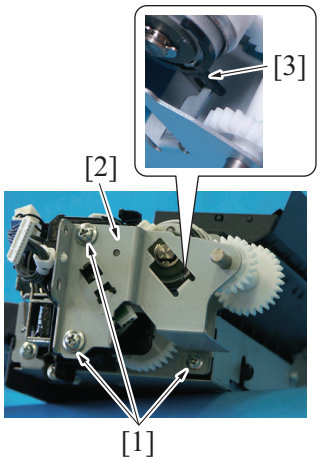
3. Disconnect the connector [1].
4. Remove the harness [3] from the wire saddle [2].
5. Remove the E-ring [4], and remove the bypass paper feed clutch [5].

6. To reinstall, reverse the order of removal.

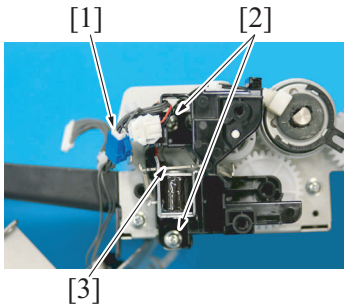
3.4.3 Bypass pick-up solenoid (SD1) (MB-505)

(1) Procedure

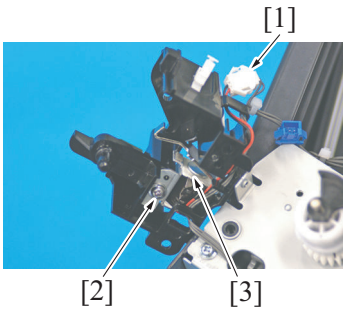
1. Remove the multi bypass tray.
G.3.4.1 Multi Bypass Tray (MB-505)



2. Remove three screws [1], and remove the fixed sheet metal [2].
NOTE
- **When reinstalling the sheet metal [2], make sure that the projection of the sheet metal [2] is inserted into the opening of the rotation stopper [3] of the bypass paper feed clutch.**



3. Disconnect the connector [1].
4. Remove two screws [2], and remove the solenoid assy [3].

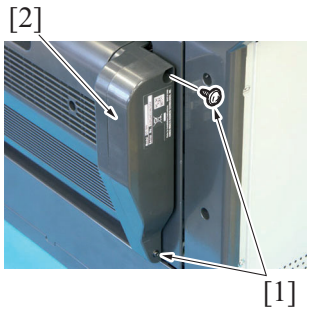


5. Disconnect the connector [1].
6. Remove the screw [2], and remove the bypass pick-up solenoid [3].
7. To reinstall, reverse the order of removal.

3.5 Disassembly/reassembly procedure (AD-509)

3.5.1 Right cover (AD-509)

(1) Procedure

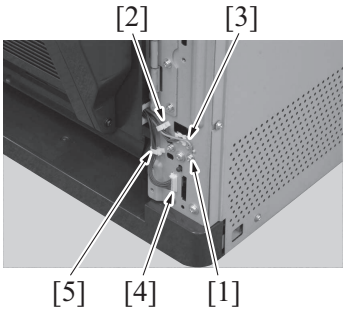


1. Remove two screws [1], and remove the right cover [2].
2. To reinstall, reverse the order of removal.

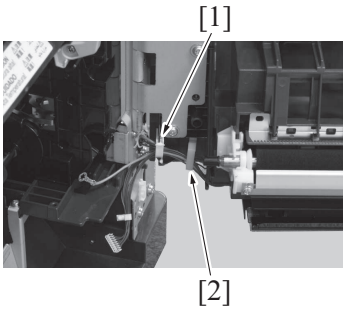
3.5.2 Automatic Duplex Unit (AD-509)

(1) Procedure

1. Remove the right rear cover.
   G.2.2.4 Right rear cover
2. Remove the right lower cover.
   G.2.2.5 Right lower cover

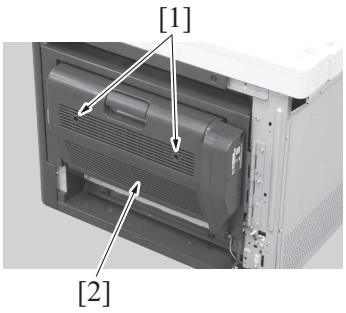


3. Remove the screw [1], and remove the grand earth [3] from the wire saddle [2].
4. Disconnect the connector [4], and remove the harness from the wire saddle [5].
5. Open the right door.



6. Remove the harness from the edge cover [1] and the wire saddle [2].
7. Close the right door.

8. Loosen two screws [1], and remove the automatic duplex unit [2].



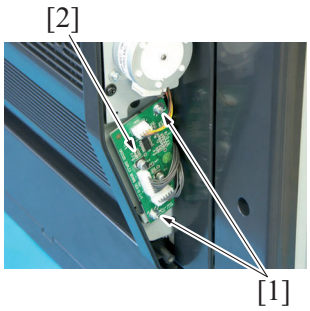
9. To reinstall, reverse the order of removal.

3.5.3 AD drive board (ADDB) (AD-509)

(1) Procedure

1. Remove the right cover.
   G.3.5.1 Right cover (AD-509)

2. Disconnect all connectors from the AD drive board [2].
3. Remove two screws [1], and remove the AD drive board [2].



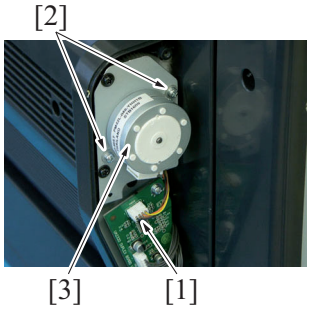
4. To reinstall, reverse the order of removal.

3.5.4 AD motor (M1) (AD-509)

(1) To reinstall, reverse the order of removal.

1. Remove the right cover.
   G.3.5.1 Right cover (AD-509)

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



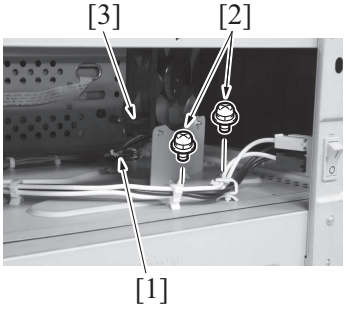
4. To reinstall, reverse the order of removal.

3.5.5 Cooling fan motor (FM2) (AD-509)

(1) Procedure

1. Remove the left cover.
   G.2.2.3 Left cover

2. Disconnect the connector [1].
3. Remove two screws [2], and remove the cooling fan motor [3].



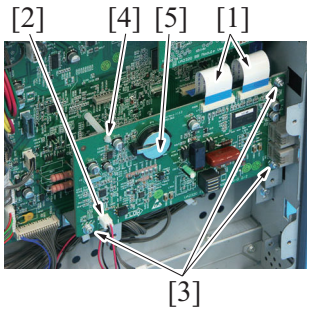
4. To reinstall, reverse the order of removal.

3.6 Disassembly/reassembly procedure (FK-510)

3.6.1 FAX board (FAXB) (FK-510)

(1) Procedure

1. Remove the rear cover.
   G.2.2.6 Rear cover

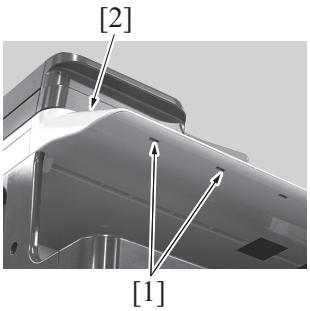


2. Disconnect two flat cables [1] and connector [2].
3. Remove three screws [3] and PWB support [4], and remove the FAX board [5].
4. To reinstall, reverse the order of removal.

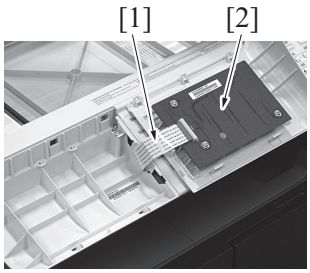
3.6.2 FAX control panel (FK-510)

(1) Procedure

1. Remove the rear cover.
   G.2.2.6 Rear cover



2. Unhook two tabs [1], and remove the FAX control panel [2].

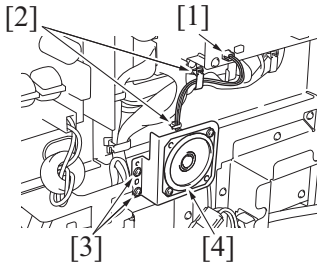


3. Disconnect the flat cable [1], and remove the FAX control panel [2].
4. To reinstall, reverse the order of removal.

3.6.3 Speaker (FK-510)

(1) Procedure

1. Remove the rear cover.
   G.2.2.6 Rear cover



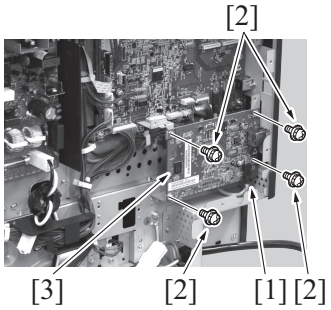
2. Disconnect the connector [1], and remove the harness from two wire saddles [2].
3. Remove two screws [3], and remove the speaker [4].
4. To reinstall, reverse the order of removal.

3.7 Disassembly/reassembly procedure (IC-209/NC-504)

3.7.1 PCL/NIC board (PNICB)/NIC board (NICB) (IC-209/NC-504)

(1) Procedure

1. Remove the rear cover.
   G.2.2.6 Rear cover



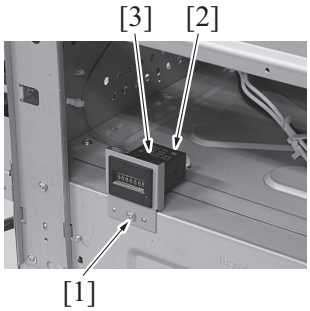
2. Remove the USB cable [1].
3. Remove four screws [2], and remove the PCL/NIC board or the NIC board [3].
4. To reinstall, reverse the order of removal.

3.8 Disassembly/reassembly procedure (MC-504)

3.8.1 Mechanical Counter (MC-504)

(1) Procedure

1. Remove the left cover.
   G.2.2.3 Left cover



2. Remove the screw [1].
3. Disconnect the connector [2], and remove the mechanical counter [3].
4. To reinstall, reverse the order of removal.

H CLEANING/LUBRICATION

1. bizhub235/215/195

1.1 Cleaning parts list

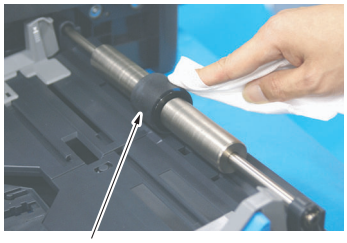
Section	Part name	Ref. Page
Tray 1	Tray 1 feed roller	H.1.2.1 Tray 1 feed roller
	Tray 1 separation pad	H.1.2.2 Tray 1 separation pad
Scanner section	Original glass	H.1.2.3 Original glass

1.2 Cleaning procedure

1.2.1 Tray 1 feed roller

(1) Procedure

1. Slide out the tray 1.

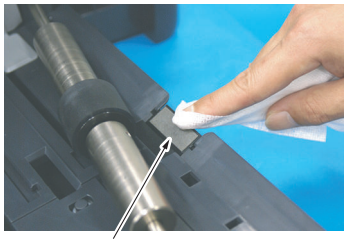


2. Using a cleaning pad dampened with alcohol, wipe the tray 1 feed roller [1] clean of dirt.

1.2.2 Tray 1 separation pad

(1) Procedure

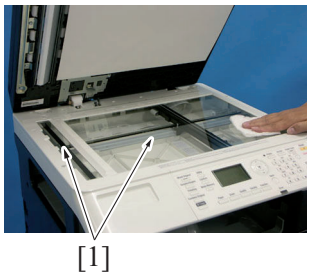
1. Slide out the tray 1.
2. Remove the tray 1 feed roller assy.
   F.3.4.1 Replacing the tray 1 feed roller



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

1.2.3 Original glass

(1) Procedure



1. Using a cleaning pad dampened with alcohol, wipe the original glass [1] clean of dirt.

2. Option

2.1 Cleaning parts list

2.1.1 PF-507

Section	Part name	Ref. Page
Feed section	Feed roller	H.2.2.1 Feed roller
	Vertical transport roller/roll	H.2.2.2 Vertical transport roller/roll

2.1.2 AD-509

Section	Part name	Ref. Page
Transport section	Automatic duplex unit transport roller/roll	H.2.3.1 Automatic duplex unit transport roller/roll
	Switchback section transport roller/roll	H.2.3.2 Switchback section transport roller/roll
	Automatic duplex unit ventilation section	H.2.3.3 Automatic duplex unit ventilation section

2.1.3 MB-505

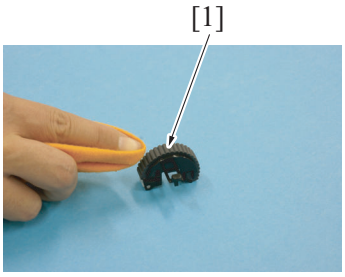
Section	Part name	Ref. Page
Feed section	Separation roller	H.2.4.1 Separation roller
	Feed roller	H.2.4.2 Feed roller

2.2 Cleaning procedure (PF-507)

2.2.1 Feed roller

(1) Procedure

1. Remove the feed rollers.
   F.5.1.1 Replacing the feed roller (PF-507)

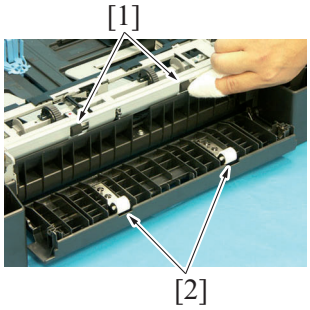


2. Using a cleaning pad dampened with alcohol, wipe the feed roller [1] clean of dirt.

2.2.2 Vertical transport roller/roll

(1) Procedure

1. Open the right door of the paper feeder unit.



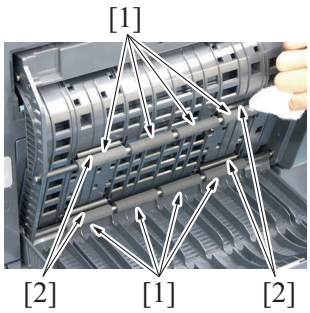
2. Using a cleaning pad dampened with alcohol, wipe the vertical transport rollers [1]/rolls [2] clean of dirt.

2.3 Cleaning procedure (AD-509)

2.3.1 Automatic duplex unit transport roller/roll

(1) Procedure

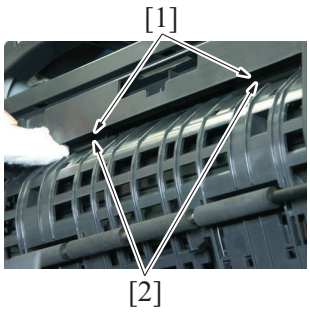
1. Open the front door of the automatic duplex unit.



2. Using a cleaning pad dampened with alcohol, wipe the automatic duplex unit transport rollers [1]/rolls [2] clean of dirt.

2.3.2 Switchback section transport roller/roll

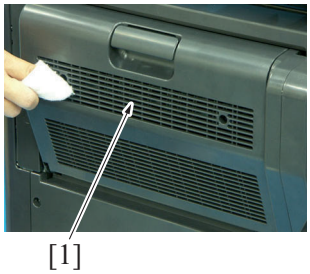
(1) Procedure



1. Using a cleaning pad dampened with alcohol, wipe the switchback section transport rollers [1]/rolls [2] clean of dirt.

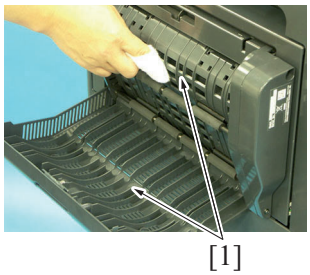
2.3.3 Automatic duplex unit ventilation section

(1) Procedure



1. Using a cleaning pad dampened with alcohol, wipe the outside of the automatic duplex unit ventilation section [1] clean of dirt.

2. Open the front door of the automatic duplex unit.
3. Using a cleaning pad dampened with alcohol, wipe the inside of the automatic duplex unit ventilation section [1] clean of dirt.



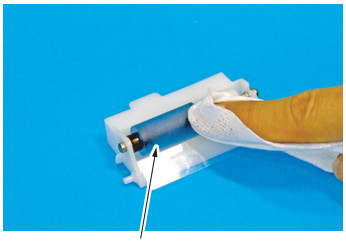
2.4 Cleaning procedure (MB-505)

2.4.1 Separation roller

(1) Procedure

1. Remove the multi bypass tray.
   G.3.4.1 Multi Bypass Tray (MB-505)
2. Remove the separation roller assy.
   F.6.1.2 Replacing the separation roller assy (MB-505)

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

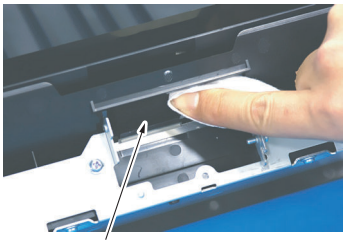


2.4.2 Feed roller

(1) Procedure

1. Remove the multi bypass tray.
   G.3.4.1 Multi Bypass Tray (MB-505)
2. Remove the separation roller assy.
   F.6.1.2 Replacing the separation roller assy (MB-505)

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



I ADJUSTMENT/SETTING

1. HOW TO USE THE ADJUSTMENT/SETTING SECTION

1.1 Outline

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

1.2 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.
  A.3.3.2 Installation Requirements
- 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

- **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.**

2. UTILITY MODE

2.1 List of utility mode

UTILITY mode			Ref. page
MACHINE SETTING	AUTO PANEL RESET		I.2.3.1.(2) Default setting
	SLEEP MODE		I.2.3.2 SLEEP MODE
	AUTO SHUT TIME		I.2.3.3 AUTO SHUT TIME
	DENSITY (ADF)		I.2.3.4 DENSITY (ADF)
	DENSITY (BOOK)		I.2.3.5 DENSITY (BOOK)
	PRINT DENSITY		I.2.3.6 PRINT DENSITY
	LCD CONTRAST		I.2.3.7 LCD CONTRAST
	KEY SPEED SETTING	TIME TO START	I.2.3.8.(1) TIME TO START
		INTERVAL	I.2.3.8.(2) INTERVAL
	LANGUAGE		I.2.3.9 LANGUAGE
	BUZZER VOLUME *1	DISABLE/ENABLE *1	I.2.3.10 BUZZER VOLUME
		CONFIRMATION *1	
		COMPLETE *1	
		PREPARATION *1	
		CAUTION *1	
	INITIAL MODE *1		I.2.3.11 INITIAL MODE
	SCAN THRESHOLD		I.2.3.12 SCAN THRESHOLD
PAPER SOURCE SETUP	TRAY1		I.2.4.1 TRAY1
	TRAY2/TRAY3/TRAY4/TRAY5		I.2.4.2 TRAY2/TRAY3/TRAY4/ TRAY5
CUSTOM SIZE MEMORY	MEMORY1		I.2.5 CUSTOM SIZE MEMORY
	MEMORY2		
DRUM DEHUMIDIFY			I.2.6 DRUM DEHUMIDIFY
ADMIN. MANAGEMENT	ADMINISTRATOR NO.		I.2.7.1 ADMINISTRATOR NO.
	DISPLAY AUTO SHUT		I.2.7.2 DISPLAY AUTO SHUT
	SLEEP SHIFT		I.2.7.3 SLEEP SHIFT
	ACCOUNT TRACK		I.2.7.4 ACCOUNT TRACK
	REMOTE MONITOR *1		I.2.7.5 REMOTE MONITOR
	NETWORK SETTING	IP ADDRESS SETTING	I.2.7.6 NETWORK SETTING - IP ADDRESS SETTING
		IPV6	I.2.7.7 NETWORK SETTING - IPv6
		DNS CONFIG.	I.2.7.8 NETWORK SETTING - DNS CONFIG.
		WEB SETTING	I.2.7.9 NETWORK SETTING - WEB SETTING
		LPD SETTING	I.2.7.10 NETWORK SETTING - LPD SETTING
		SLP SETTING	I.2.7.11 NETWORK SETTING - SLP SETTING
		SNMP SETTING	I.2.7.12 NETWORK SETTING - SNMP SETTING
		AUTO GET TIME	I.2.7.13 NETWORK SETTING - AUTO GET TIME
	E-MAIL SETTING 1	SENDER NAME *3	I.2.7.14.(1) SENDER NAME
		E-MAIL ADDRESS *3	I.2.7.14.(2) E-MAIL ADDRESS
		SMTP SERVER ADDR. *3	I.2.7.14.(3) SMTP SERVER ADDR.
		SMTP PORT NO. *3	I.2.7.14.(4) SMTP PORT No.
		SMTP TIMEOUT *3	I.2.7.14.(5) SMTP TIMEOUT
		TEXT INSERT *3	I.2.7.14.(6) TEXT INSERT
		DEFAULT SUBJECT *3	I.2.7.14.(7) DEFAULT SUBJECT
		POP BEFORE SMTP *3	I.2.7.14.(8) POP BEFORE SMTP
		E-MAIL MODE *2	I.2.7.14.(9) E-MAIL MODE
	E-MAIL SETTING 2	POP3 SERVER ADDR. *3	I.2.7.15.(1) POP3 SERVER ADDR.
		POP3 PORT No. *3	I.2.7.15.(2) POP3 PORT No.
		POP3 TIMEOUT *3	I.2.7.15.(3) POP3 TIMEOUT
		POP3 ACCOUNT *3	I.2.7.15.(4) POP3 ACCOUNT
		POP3 PASSWORD *3	I.2.7.15.(5) POP3 PASSWORD

UTILITY mode			Ref. page
		AUTO RECEPTION *2	I.2.7.15.(6) AUTO RECEPTION
		REPLY ADDRESS *2	I.2.7.15.(7) REPLY ADDRESS
		HEADER PRINT *2	I.2.7.15.(8) HEADER PRINT
	LDAP SETTING	LDAP SERVER ADDR. *3	I.2.7.16.(1) LDAP SERVER ADDR.
		LDAP PORT No. *3	I.2.7.16.(2) LDAP PORT No.
		SSL SETTING *3	I.2.7.16.(3) SSL SETTING
		SEARCH BASE *3	I.2.7.16.(4) SEARCH BASE
		ATTRIBUTE *3	I.2.7.16.(5) ATTRIBUTE
		SEARCH METHOD *3	I.2.7.16.(6) SEARCH METHOD
		LDAP TIMEOUT *3	I.2.7.16.(7) LDAP TIMEOUT
		MAX. SEARCH RESULTS *3	I.2.7.16.(8) MAX. SEARCH RESULTS
		AUTHENTICATION MODE *3	I.2.7.16.(9) AUTHENTICATION
		LDAP ACCOUNT *3	I.2.7.16.(10) LDAP ACCOUNT
		LDAP PASSWORD *3	I.2.7.16.(11) LDAP PASSWORD
		DOMAIN NAME *3	I.2.7.16.(12) DOMAIN NAME
	COMM. SETITNG *1	TONE/PULSE *1	I.2.7.17.(1) TONE/PULSE
		LINE MONITOR *1	I.2.7.17.(2) LINE MONITOR
		PSTN/PBX *1	I.2.7.17.(3) PSTN/PBX
	USER SETTING	TIME ZONE *3	I.2.7.18.(1) TIME ZONE
		DATE&TIME *1	I.2.7.18.(2) DATE&TIME
		DAYLIGHT SAVING *2	I.2.7.18.(3) DAYLIGHT SAVING
		USER FAX NO. *1	I.2.7.18.(4) USER FAX NO.
		USER NAME *1	I.2.7.18.(5) USER NAME
	SCAN TO USB		I.2.7.19 SCAN TO USB
COPY SETTING 1	PAPER PRIORITY		I.2.8.1 PAPER PRIORITY
	QUALITY PRIORITY		I.2.8.2 QUALITY PRIORITY
	DENSITY PRIORITY		I.2.8.3 DENSITY PRIORITY
	DENSITY LEVEL		I.2.8.4 DENSITY LEVEL
	DUPLEX PRIORITY *4		I.2.8.5 DUPLEX PRIORITY
	OUTPUT BIND POS.		I.2.8.6 OUTPUT BIND POS.
	ORIG.BINDING POS.		I.2.8.7 ORIG.BINDING POS.
	BINDING POSITION		I.2.8.8 BINDING POSITION
	MARGIN SETTING		I.2.8.9 MARGIN SETTING
	ERASE SETTING		I.2.8.10 ERASE SETTING
	SMALL ORIGINAL		I.2.8.11 SMALL ORIGINAL
COPY SETTING 2	COPY PRIORITY		I.2.9.1 COPY PRIORITY
	OUTPUT PRIORITY		I.2.9.2 OUTPUT PRIORITY
	CRISSCROSS MODE		I.2.9.3 CRISSCROSS MODE
	4IN1 COPY ORDER		I.2.9.4 4IN1 COPY ORDER
	MIXED ORIGINAL *5		I.2.9.5 MIXED ORIGINAL
	ORIG. DIRECTION		I.2.9.6 ORIG. DIRECTION
	BOOK SEPARATION		I.2.9.7 BOOK SEPARATION
	STAMP		I.2.9.8 STAMP
	PAGE FORMAT		I.2.9.9 PAGE FORMAT
	DATE & TIME FORMAT *3		I.2.9.10 DATE & TIME FORMAT
DIAL REGISTRATION	ONE-TOUCH DIAL *3		I.2.10.1 ONE-TOUCH DIAL
	SPEED DIAL *3		I.2.10.2 SPEED DIAL
	GROUP DIAL *3		I.2.10.3 GROUP DIAL
	PROGRAM DIAL *1		I.2.10.4 PROGRAM DIAL
FAX REGISTRATION *1	MAILBOX *1		I.2.11.1 MAILBOX
	RELAY BOX *1		I.2.11.2 RELAY BOX
FAX TX OPERATION *1	DENSITY LEVEL *1		I.2.12.1 DENSITY LEVEL
	QUALITY PRIORITY *1		I.2.12.2 QUALITY PRIORITY
	DEFAULT TX *1		I.2.12.3 DEFAULT TX
	HEADER *1		I.2.12.4 HEADER
	CONFIRM FAX NO. *1		I.2.12.5 CONFIRM FAX NO.
FAX RX OPERATION *1	MEMORY RX MODE *1		I.2.13.1 MEMORY RX MODE

UTILITY mode		Ref. page
	NO. of RINGS *1	I.2.13.2 NO. of RINGS
	REDUCTION RX *1	I.2.13.3 REDUCTION RX
	RX PRINT *1	I.2.13.4 RX PRINT
	RX MODE *1	I.2.13.5 RX MODE
	FORWARD *1	I.2.13.6 FORWARD
	FOOTER *1	I.2.13.7 FOOTER
	SELECT TRAY *1	I.2.13.8 SELECT TRAY
	CLOSED NETWORK *1	I.2.13.9 CLOSED NETWORK
REPORTING *1	ACTIVITY REPORT *1	I.2.14.1 ACTIVITY REPORT
	RESERVATION REPORT *1	I.2.14.2 RESERVATION REPORT
	TX RESULT REPORT *1	I.2.14.3 TX RESULT REPORT
	RX RESULT REPORT *1	I.2.14.4 RX RESULT REPORT
SCAN SETTING	RESOLUTION	I.2.15.1 RESOLUTION
	IMAGE FORMAT	I.2.15.2 IMAGE FORMAT
	BW CODING METHOD	I.2.15.3 BW CODING METHOD
	COLOR SETTING	I.2.15.4 COLOR SETTING

- *1: It will be displayed only when the optional FAX kit FK-510 is mounted.
- *2: It will be displayed only when the optional FAX kit FK-510 and Image Controller IC-209 or Network Card NC-504 is mounted.
- *3: It will be displayed only when the Image Controller IC-209 or Network Card NC-504 is mounted.
- *4: It will be displayed only when the optional AD-507 is mounted.
- *5: It will be displayed only when the optional DF-625 is mounted.

2.2 Starting/Exiting

2.2.1 Starting procedure

1. Press the Utility key.
2. The UTILITY mode screen will appear.

2.2.2 Exiting procedure

- Press the Reset key.

2.3 MACHINE SETTING

2.3.1 AUTO PANEL RESET

(1) Use

- To set the time it takes the auto panel reset function, which resets the panel settings when the set period of time elapses after a copy cycle has been completed or the last key operated, to be activated.

(2) Default setting

- 1min

(3) Setting item

- OFF
- 30sec
- “1min”
- 2min
- 3min
- 4min
- 5min

2.3.2 SLEEP MODE

(1) Use

- To set the time it takes the machine to enter the sleep mode after a print cycle has been completed or the last key operated.

(2) Default setting

- 15min (except China)
- 1min (China)

(3) Setting range

- 1 to 240 min

2.3.3 AUTO SHUT TIME

(1) Use

- To select whether or not to enable auto power off after completion of a copy operation or after the last key operation.

NOTE
- **This setting is displayed only when "ENABLE" is selected in SERVICE MODE -> [SERVICE'S CHOICE] -> [I.4.3.3 ENABLE AUTO SHUT].**
- **This setting is displayed only when "ENABLE" is selected in UTILITY MODE -> [ADMIN.MANAGEMENT] -> [I.2.7.2 DISPLAY AUTO SHUT].**

(2) Default setting
- OFF

(3) Setting item
- "OFF"
- ON
  - When selecting "ON", set the time before auto power off starts.

2.3.4 DENSITY (ADF)
- It will be displayed only when the optional reverse automatic document feeder DF-625 is mounted.

(1) Use
- To set the reading image density level when the Automatic Document Feeder is used.
  MODE1: To produce a copy having an image density equivalent to that of the original.
  MODE2: To lower the image density to prevent a dirty copy from being produced.

(2) Default setting
- MODE1

(3) Setting item
- "MODE1"
- MODE2

2.3.5 DENSITY (BOOK)
(1) Use
- To set the reading image density level when the original glass scanning.
  MODE1: To produce a copy having an image density equivalent to that of the original.
  MODE2: To lower the image density to prevent a dirty copy from being produced.

(2) Default setting
- MODE1

(3) Setting item
- "MODE1"
- MODE2

2.3.6 PRINT DENSITY
(1) Use
- To set the print density in 7 steps.

(2) Setting range
- LIGHT □□□■□□□ DARK

2.3.7 LCD CONTRAST
(1) Use
- To set the LCD display contrast in 4 scales.

(2) Setting range
- LIGHT □■□□ DARK

2.3.8 KEY SPEED SETTING
(1) TIME TO START
(a) Use
- Specify a length of time until the value begins to change after a key is held down.

(b) Default setting
- 1.0sec

(c) Setting item
- 0.1sec

- 0.3sec
- 0.5sec
- “1.0sec”
- 1.5sec
- 2.0sec
- 2.5sec
- 3.0sec

(2) INTERVAL

(a) Use

- Specify the length of time for the value to change to the next number.

(b) Default setting

- 0.1sec

(c) Setting item

- “0.1sec”
- 0.3sec
- 0.5sec
- 1.0sec
- 1.5sec
- 2.0sec
- 2.5sec
- 3.0sec

2.3.9 LANGUAGE

(1) Use

- To select the language displayed on the control panel.

(2) Default setting

- Language selection and default language depends on the [LANGUAGE GROUP] in the SERVICE MODE.

(3) Setting item

	LANGUAGE GROUP in the Service mode				
	TYPE 1	TYPE 2	TYPE 5	TYPE 6	TYPE 7
English	○(default)	○(default)	○(default)	○	○
German	○	○			
French	○	○			
Italian	○				
Danish	○				
Dutch	○				
Spanish	○				
Norwegian	○				
Swedish	○				
Finnish	○				
Turkish	○				
Portuguese	○				
Czech		○			
Hungarian		○			
Polish		○			
Romanian		○			
Lithuanian		○			
Slovak		○			
Catalan		○			
Russian			○		
Simplified Chinese				○(default)	
Traditional Chinese					○(default)

(4) Step

- Select the desired language and touch [OK] to enable the new language setting.

2.3.10 BUZZER VOLUME

- It will be displayed only when the optional FAX kit FK-510 is mounted.

(1) DISABLE/ENABLE

(a) Use

- To select whether or not to use all the sound settings.
- Setting this function to “ENABLE” allows various types of setting of the buzzer sound volume to be made.

(b) Default setting

- ENABLE

(c) Setting item

- DISABLE
- “ENABLE”

(2) CONFIRMATION - VALID INPUT

- It will be displayed only when the following setting is set to “ENABLE.”
  UTILITY MODE -> [MACHINE SETTING] -> [BUZZER VOLUME] -> [DISABLE/ENABLE]

(a) Use

- To set a sound when a key on the control panel is pressed for an entry.

(b) Default setting

- LOW

(c) Setting item

- OFF
- “LOW”
- MIDDLE
- HIGH

(3) CONFIRMATION - INVALID INPUT

- It will be displayed only when the following setting is set to “ENABLE.”
  UTILITY MODE -> [MACHINE SETTING] -> [BUZZER VOLUME] -> [DISABLE/ENABLE]

(a) Use

- To set a sound for invalid key operation on the control panel.

(b) Default setting

- LOW

(c) Setting item

- OFF
- “LOW”
- MIDDLE
- HIGH

(4) CONFIRMATION - BASE INPUT

- It will be displayed only when the following setting is set to “ENABLE.”
  UTILITY MODE -> [MACHINE SETTING] -> [BUZZER VOLUME] -> [DISABLE/ENABLE]

(a) Use

- To set a sound when the default value item is selected for an option subject to rotational switching.

(b) Default setting

- LOW

(c) Setting item

- OFF
- “LOW”
- MIDDLE
- HIGH

(5) COMPLETE - PRINT

- It will be displayed only when the following setting is set to “ENABLE.”
  UTILITY MODE -> [MACHINE SETTING] -> [BUZZER VOLUME] -> [DISABLE/ENABLE]

(a) Use

- To set a sound when the operation has completed normally.

(b) Default setting

- LOW

(c) Setting item

- OFF
- “LOW”
- MIDDLE
- HIGH

(6) COMPLETE - FAX COMM.

- It will be displayed only when the following setting is set to “ENABLE.”
  UTILITY MODE -> [MACHINE SETTING] -> [BUZZER VOLUME] -> [DISABLE/ENABLE]

(a) Use

- To set a sound when a G3 fax communications-related operation is completed normally.

(b) Default setting

- LOW

(c) Setting item

- OFF
- “LOW”
- MIDDLE
- HIGH

(7) PREPARATION

- It will be displayed only when the following setting is set to “ENABLE.”
  UTILITY MODE -> [MACHINE SETTING] -> [BUZZER VOLUME] -> [DISABLE/ENABLE]

(a) Use

- To set a sound when a device is ready.

(b) Default setting

- LOW

(c) Setting item

- OFF
- “LOW”
- MIDDLE
- HIGH

(8) CAUTION - LOW CAUTION1

- It will be displayed only when the following setting is set to “ENABLE.”
  UTILITY MODE -> [MACHINE SETTING] -> [BUZZER VOLUME] -> [DISABLE/ENABLE]

(a) Use

- To set a sound when an error occurs that can be corrected by the user by referring to the message that appears or the User's Guide.

(b) Default setting

- LOW

(c) Setting item

- OFF
- “LOW”
- MIDDLE
- HIGH

(9) CAUTION - LOW CAUTION2

- It will be displayed only when the following setting is set to “ENABLE.”
  UTILITY MODE -> [MACHINE SETTING] -> [BUZZER VOLUME] -> [DISABLE/ENABLE]

(a) Use

- To set a sound for a user error.

(b) Default setting

- LOW

(c) Setting item

- OFF
- "LOW"
- MIDDLE
- HIGH

(10) CAUTION - LOW CAUTION3

- It will be displayed only when the following setting is set to "ENABLE."
  UTILITY MODE -> [MACHINE SETTING] -> [BUZZER VOLUME] -> [DISABLE/ENABLE]

(a) Use

- To set a sound when the replacement time is nearing for supplies or a replaceable part and a message appears in the panel.

(b) Default setting

- LOW

(c) Setting item

- OFF
- "LOW"
- MIDDLE
- HIGH

(11) CAUTION - HIGH CAUTION

- It will be displayed only when the following setting is set to "ENABLE."
  UTILITY MODE -> [MACHINE SETTING] -> [BUZZER VOLUME] -> [DISABLE/ENABLE]

(a) Use

- To set a sound when an error occurs that cannot be corrected by the user or requires action by a service representative.

(b) Default setting

- LOW

(c) Setting item

- OFF
- "LOW"
- MIDDLE
- HIGH

2.3.11 INITIAL MODE

- It will be displayed only when the optional FAX kit FK-510 is mounted.

(1) Use

- To set the mode (Copy mode or Fax mode) that the machine starts up in or returns to after the control panel is automatic reset.

(2) Default setting

- COPY

(3) Setting item

- "COPY"
- FAX

2.3.12 SCAN THRESHOLD

(1) Use

- To set the remainder of the memory at which memory full is determined and scanning of originals is stopped.

(2) Default setting

- 512 KByte

(3) Setting item

- 256 KByte
- "512 KByte"
- 1024 KByte
- 1536 KByte

2.4 PAPER SOURCE SETUP

2.4.1 TRAY1

PAPER SIZE

(a) Use

- To set the size of the paper loaded in Paper Feed Tray/1.

(b) Default setting

- AUTO

(c) Setting item

- Depending on the marketing area, different paper sizes are displayed.

NOTE

- **When selecting [INPUT], enter the desired size using the 10-key pad. Setting range: 140 to 432 mm (width), 90 to 297 mm (length)**
- **For [MEMORY1] / [MEMORY2], the size registered in [CUSTOM SIZE MEMORY] in [Utility Mode] is set.**

(1) PAPER TYPE

(a) Use

- To set the size of the paper loaded in Paper Feed Tray/1.

(b) Default setting

- PLAIN

(c) Setting item

- “PLAIN”/ RECYCLE / 1-SIDE / SPECIAL / TRANSPARENCY / CARD1 / CARD2 / ENVELOPE / PLAIN 2-SIDE / CARD1 2-SIDE / CARD2 2-SIDE / RECYCLE 2-SIDE

2.4.2 TRAY2/TRAY3/TRAY4/TRAY5

(1) INCH/METRIC

(a) Use

- To set the unit expressing a paper size for each tray.
- Use this feature to change the current unit of the paper size to a different one.

NOTE

- **If an appropriate setting is not made, paper size cannot be detected automatically.**
- **For trays 2 to 5, this setting is available only when PF-507 is installed.**

(b) Default setting

- METRIC

(c) Setting item

- INCH
- “METRIC”

(2) PAPER TYPE

(a) Use

- To set the size of the paper loaded in Paper Feed Tray/.

NOTE

- **To set the unit expressing a paper size for each tray.**

(b) Default setting

- PLAIN

(c) Setting item

- “PLAIN”/ RECYCLE / 1-SIDE / SPECIAL

2.5 CUSTOM SIZE MEMORY

2.5.1 CUSTOME SIZE MEMORY

(1) Use

- To set the custom size paper commonly used.
- When trying to set a paper size for tray 1 in [PAPER SOURCE SETUP] -> [TRAY1] -> [PAPER SIZE] in utility mode, the size registered in this setting appears as an option.
- Up to 2 digits can be set (MEMORY 1/MEMORY 2)
- The paper length [X] can be set between 140 mm and 432 mm.
  bizhub 235/215/195 I ADJUSTMENT/SETTING -> 2. UTILITY MODE
  I-7
- The paper width [Y] can be set between 90 mm and 297mm.

(2) Step

1. Using the 10-key pad, enter the desired paper size and press the OK key.
2. Select [MEMORY 1] or [MEMORY 2] and press OK key.
3. Using the 10-key pad, enter the desired paper size and press the OK key.

2.6 DRUM DEHUMIDIFY

2.6.1 Use

- To perform the drum dry operation (defrost).
- The drum dry sequence is run when an image problem occurs due to condensation formed on the surface of the PC Drum as a result of a sudden change in temperature or an increased humidity.
- The duration of this operation is about 3 minutes.

2.6.2 Step

1. Select [DRUM DEHUMIDIFY] and press the OK key.
2. The drum dry sequence is automatically terminated after the lapse of a predetermined period of time and the initial screen reappears.

2.7 ADMIN. MANAGEMENT

2.7.1 ADMINISTRATOR NO.

(1) Use

- To change the registered administrator no. to another one.

(2) Step

1. To change the registered administrator no. to another one.
2. Using the 10-key pad, enter the registered administrator no. to be registered and press the OK key.
3. Using the 10-key pad, enter the new administrator no. to be registered and press the OK key.
4. Using the 10-key pad, re-enter the new administrator no. to be registered and press the OK key.

2.7.2 DISPLAY AUTO SHUT

(1) Use

- To select whether to display (ENABLE) or not to display (DISABLE) auto shut time enabled in utility mode.

NOTE

- **This setting is displayed only when "ENABLE" is selected in SERVICE MODE -> [SERVICE'S CHOICE] -> [I.4.3.3 ENABLE AUTO SHUT].**

(2) Default setting

- ENABLE

(3) Setting item

- DISABLE
- "ENABLE"

2.7.3 SLEEP SHIFT

(1) Use

- To select whether to allow (ENABLE) or not to allow (DISABLE) the sleep mode setting to be set to in [MACHINE SETTING].

(2) Default setting

- ENABLE

(3) Setting item

- "ENABLE"
- DISABLE

2.7.4 ACCOUNT TRACK

(1) Account track setting

(a) Use

- To select whether or not to enable account track.

(b) Procedure

1. Select [ACCOUNT TRACK MODE] and press the OK key.
2. Select [COPY] or [PC-PRINT] and press the OK key.
3. Select [ON] or [OFF] and press the OK key.

(2) Account no. registration

(a) Use

- To register a 3-digit (000 to 999) access number used for the copy track function, or to change or delete a previously set access number.

(b) Account No. Registration

1. Select [ACCOUNT NO. REG.] and press the OK key.
2. Using the 10-key pad, enter the desired account no. and press the OK key.
- To add another new account no., select [ADD] and register it. (Up to 50 accounts can be registered.)
- To end registration, select [Back].

(c) Change/Delete Procedure

1. Select [ACCOUNT NO. REG.] and press the OK key.
2. Using the 10-key pad, enter the intended account no. and press the OK key.
3. Select [CHECK/EDIT] and press the OK key.
4. Select the account no. you wish to change or delete.
- To change the number, press the OK key and enter a new number.
- To delete the number, press the Clear/Stop key and select [YES].

(3) Account Track Data

(a) Use

- To display or clear the total count value of a specific account.
- To clear the total count values of all accounts under control.
- To output an account track list.

(b) Display/Clear Procedure

1. Select [ACCOUNT TRACK DATA] and press the OK key.
2. Select [DISPLAY] and press the OK key.
3. Select the account No., for which the count is to be checked, and press the [Yes] key.
4. The total count value of the account selected will be displayed.
- To clear the counter, press the Clear/Stop key.

(c) All Clear Procedure

1. Select [ACCOUNT TRACK DATA] and press the OK key.
2. Select [ACCOUNT NO. REG.] and press the OK key.

(d) List Output Procedure

1. Select [ACCOUNT TRACK DATA] and press the OK key.
2. Press the [LIST].

2.7.5 REMOTE MONITOR

- It will be displayed only when the optional FAX kit FK-510 is mounted.

(1) Use

- To set the access right when monitoring a user machine from a remote location on the Service side.
- RSD is used for remote monitoring.

OFF	Access is prohibited. Remote monitoring is disabled.
LIMITED	Access right with limited functions. Detailed settings made in the user machine can be monitored. It is, however, not possible to change the user setting or upgrade firmware.
FULL	Access right with no restrictions. In addition to being able to monitor the detailed settings made in the user machine, the Service can change user settings and upgrade firmware.

NOTE

- **When [FULL] is selected, the administrator of the user machine sets a 4-digit (0000 to 9999) password. This password is necessary for remote monitoring and must be obtained in advance from the administrator of the user machine.**

(2) Default setting

- OFF

(3) Setting item

- “OFF”
- LIMITED
- FULL

NOTE

- **When [FULL] is selected, set the password (4-digit, 0000 to 9999).**

(4) NOTE

(a) Precautions for changing the setting of [ADMIN. MANAGEMENT] -> [REMOTE MONITOR]

- If the user machine setting has been changed from [LIMITED] to [FULL] or vice versa while RSD (Remote Setup Diagnostic) communication is established, perform the following operations:
  - Temporarily disconnect the communication and re-execute “Remote Connect.”
  - Press the Disconnect key to disconnect the communication.
  - The specific changes made in the setting of REMOTE MONITOR are not validated unless the connection is made again.

(b) Precautions for Using the RSD (Remote Setup Diagnostic)

- When a connection is established with a local machine using the RSD, the following message appears on the Display and no operations can be made from the control panel of the local machine. Neither the PC print nor Scanner function can be accepted.



- No connection can be made with the RSD during operation from the control panel of the local machine. Make the connection while no operations are performed on the local machine.
- As is the case with the RSD, operations from the control panel of the local machine, PC print, and Scanner function are not accepted while a connection is being established with the local machine using the LSD (Local Setup Diagnostic) and Page Scope Web Connection/Admin. mode.
- As is the case with the RSD, no connection can be made with LSD and Page Scope Web Connection/Admin. mode during operation from the control panel of the local machine. Make the connection while no operations are performed on the local machine.

2.7.6 NETWORK SETTING - IP ADDRESS SETTING

(1) IP ADDRESS

(a) Use

- To set the IP address of MFP.
  AUTO: Automatically acquires the IP address from the DHCP server.
  SPECIFY: Displays the IP address entry screen.

NOTE

- **Discuss the IP address with the customer's network administrator.**

(b) Default setting

- AUTO

(c) Setting item

- “AUTO”
- SPECIFY

(2) SUBNET MASK

(a) Use

- To set the subnet mask of the network to which MFP is connected.

NOTE

- **Discuss the subnet mask with the customer's network administrator.**
- **This setting is necessary when [SPECIFY] is selected in [IP ADDRESS].**

(b) Setting range

- IPv4 address format.
  [0 to 255], [0 to 255], [0 to 255], [0 to 255]

(3) GATEWAY

(a) Use

- When the network to which MFP is connected has a router, set the default gateway address.

NOTE

- **Discuss the default gateway address with the customer's network administrator.**
- **This setting is necessary when [SPECIFY] is selected in [IP ADDRESS].**

(b) Setting range

- IPv4 address format.
  [0 to 126, 128 to 254]. [0 to 255]. [0 to 255]. [1 to 255]

2.7.7 NETWORK SETTING - IPv6

(1) DISABLE/ENABLE

(a) Use

- To select whether or not to enable IPv6.

NOTE

- **If [DISABLE] is selected, the following setting items are not displayed.**
  Auto Setting, Link Local, Global Address, Prefixed Length, Gateway Address

(b) Default setting

- DISABLE

(c) Setting item

- "DISABLE"
- ENABLE

(2) AUTO SETTING

(a) Use

- Select whether or not to automatically acquire an IP address (IPv6).

NOTE

- **This is displayed when [ENABLE] is selected in [DISABLE/ENABLE].**

(b) Default setting

- ON

(c) Setting range

- ON: Automatically acquires.
- OFF: Does not automatically acquire.

(3) LINK LOCAL

(a) Use

- To display the link local address into which the MAC local address is converted.

NOTE

- **This is displayed when [OFF] is selected in [Auto Setting].**

(4) GLOBAL ADDRESS

(a) Use

- To set the global address used in IPv6 communication.

NOTE

- **Discuss the Global Address with the customer's network administrator.**
- **This is displayed when [OFF] is selected in [Auto Setting].**

(b) Setting range

- Set the global address using the IPv6 address format.
  e.g.: When 12:AB::111:12 is entered, 0012:00AB:0000:0000:0000:0000:0111:0012 is set.

(5) PREFIXED LENGTH

(a) Use

- To set the prefixed length for the IPv6 global address.

NOTE

- **Discuss the Prefixed Length with the customer's network administrator.**
- **This is displayed when [OFF] is selected in [Auto Setting].**

(b) Default setting

- 64

(c) Setting range

- 0 to 128

(6) GATEWAY ADDRESS

(a) Use

- When the network to which MFP is connected has a router, set the default gateway address.

NOTE

- **Discuss the default gateway address with the customer's network administrator.**
- **This is displayed when [OFF] is selected in [Auto Setting].**

(b) Setting range

- Set the global address using the IPv6 address format.

To select whether or not to enable IPv6.

2.7.8 NETWORK SETTING - DNS CONFIG.

(1) Use

- To select whether or not to use DNS (Domain Name System).
  If a DNS server is used in the network to which MFP is connected, select [ENABLE] and enter the IP address of the DNS server.

NOTE

- **To select whether or not to use DNS (Domain Name System).**

(2) Default setting

- DISABLE

(3) Setting item

- "DISABLE"
- ENABLE

2.7.9 NETWORK SETTING - WEB SETTING

(1) Use

- To select whether or not to allow the access to PageScope Web Connection.

(2) Default setting

- ENABLE

(3) Setting item

- DISABLE
- "ENABLE"

2.7.10 NETWORK SETTING - LPD SETTING

(1) Use

- To set the protocol used for printing via the TCP/IP network.

(2) Default setting

- ENABLE

(3) Setting item

- DISABLE
- "ENABLE"

2.7.11 NETWORK SETTING - SLP SETTING

(1) Use

- To set the protocol that allows search of the services available in the TCP/IP network and automatic client setting.

(2) Default setting

- ENABLE

(3) Setting item

- DISABLE
- "ENABLE"

2.7.12 NETWORK SETTING - SNMP SETTING

(1) Use

- To set the management protocol for the network environment where TCP/IP is used.

(2) Default setting

- ENABLE

(3) Setting item

- DISABLE
- "ENABLE"

2.7.13 NETWORK SETTING - AUTO GET TIME

(1) SNTP SETTING

(a) Use

- To select whether or not to enable SNTP.

(b) Default setting

- OFF

(c) Setting item

- “OFF”
- ON

(2) AUTO DETECT ADDR.

(a) Use

- Select whether or not to automatically acquire an NTP server address (Ipv6).

NOTE

- **This is displayed when [ENABLE] is selected in [DISABLE/ENABLE].**

(b) Default setting

- ENABLE

(c) Setting item

- “ENABLE”
- DISABLE

(3) NTP SERVER ADDRESS

(a) Use

- To set the NTP server address.

(4) NTP PORT NO.

(a) Use

- To set the port number used for communicating with the NTP server.

(b) Default setting

- 123

(c) Setting range

- 1 to 65535

(5) AUTO GET TIME

(a) Use

- To set the interval at which time is automatically corrected when time correction is enabled.

NOTE

- **If [AUTO GET TIME] is set to [ON], the correction interval can be set.**

(b) Default setting

- 24 (hr)

(c) Setting range

- 1 to 240 (hr)

2.7.14 E-MAIL SETTING 1

(1) SENDER NAME

(a) Use

- To set a sender name

(b) Setting range

- Up to 20 characters can be entered.

(2) E-MAIL ADDRESS

(a) Use

- To set a sender's e-mail address.

NOTE

- **Discuss the e-mail address with the customer's network administrator.**

(b) Setting range

- Up to 64 characters can be entered.

(3) SMTP SERVER ADDR.

(a) Use

- To set the IP address or host name of the SMTP server.

NOTE

- **Discuss the IP address or host name with the customer's network administrator.**
- **To specify the SMTP server as the host name, configuring [DNS setting] in advance is necessary.**

(b) Setting range

- Up to 64 characters can be entered.

(4) SMTP PORT No.

(a) Use

- To set the port number of the SMTP server.

(b) Default setting

- 25

(c) Setting range

- 1 to 65535

(5) SMTP TIMEOUT

(a) Use

- To set the time (in seconds) before the SMTP server connection times out.

NOTE

- **Discuss the timeout period with the customer's network administrator.**

(b) Default setting

- 60sec

(c) Setting range

- 30 to 300sec

(6) TEXT INSERT

(a) Use

- To select whether or not to insert text explaining that image data is attached when scanned data is attached to an email to be sent.

(b) Default setting

- OFF

(c) Setting item

- “OFF”
- ON

(7) DEFAULT SUBJECT

(a) Use

- To set a default subject used when scanned data is attached to an email to be sent.

(b) Setting range

- Up to 20 characters can be entered.

(8) POP BEFORE SMTP

(a) Use

- To select whether or not to enable the POP before SMTP authentication.

(b) Default setting

- OFF

(c) Setting item

- “OFF”
- ON
  - When selecting [ON], set the time in seconds for POP BEFORE SMTP.
    Default setting: “5 sec” (0 to 60 sec)

(9) E-MAIL MODE

- To set a sender's e-mail address.

(a) Use

- To set the default settings for the maximum TX size, maximum TX resolution and coding method when sending a document by Internet fax.

NOTE

- **If the settings are not changed for Internet fax transmission, that particular transmission is carried out with the values selected in E-mail mode set as default both for [BASIC] and [ADVANCED] mode.**

The following operations are performed if [BASIC] is selected.

MAX TX SIZE	**Scans a size larger than A4 -> Transmitted with data reduced to A4** **Scans a size smaller than A4 -> Data transmitted as A4**
MAX QUALITY	**[FINE/TEXT] or [STD/TEXT] is specified using the Quality key or other function -> Transmitted with the selected resolution** **[S-FINE/TEXT] is specified using the Quality key or other function -> Transmitted in [FINE/TEXT]** **(In [BASIC] mode, [FINE/TEXT] is the best possible resolution. Selecting [S-FINE/TEXT] is not accepted and data is transmitted as [FINE/TEXT] even if [S-FINE/TEXT] is selected.)**
BW CODING METHOD	**Transmitted as MH at all times**

The following operations are performed if [ADVANCED] is selected.

MAX TX SIZE	**Scans a size (width) larger than the selected one (width) -> Data transmitted after reduction to the selected size (width)** **Scans a size smaller than A4 -> Data transmitted as A4**
MAX QUALITY	**Resolution is specified using the Quality key or other function -> Transmitted with the selected resolution**
BW CODING METHOD	**Transmitted by the selected coding method (MH/MR/MMR)**

(b) Default setting

- E-MAIL MODE: BASIC
- MAX TX SIZE: 11x17 (Inch), A3 (Metric)
- MAX QUALITY: S-FINE
- BW CODING METHOD: MH

(c) Setting item

E-MAIL MODE
- “BASIC”
- ADVANCED

MAX TX SIZE (Inch)
- “11x17”
- LTR

MAX TX SIZE (Metric)
- “A3”
- B4
- A4

MAX QUALITY
- FINE
- “S-FINE”

BW CODING METHOD
- “MH”
- MR
- MMR

NOTE

- **When [BASIC] is selected, set the MAX TX SIZE, MAX QUALITY, BW CODING METHOD.**

2.7.15 E-MAIL SETTING 2

(1) POP3 SERVER ADDR.

(a) Use

- To set the IP address or host name of the POP3 server.

NOTE

- **Discuss the IP address or host name with the customer's network administrator.**
- **To specify the SMTP server as the host name, configuring [DNS setting] in advance is necessary.**

(b) Setting range

- Up to 64 characters can be entered as host name.

(2) POP3 PORT No.

(a) Use

- To set the port number of the POP3 server.

NOTE

- **Discuss the port number with the customer's network administrator.**

(b) Default setting

- 110

(c) Setting range

- 1 to 65535

(3) POP3 TIMEOUT

(a) Use

- To set the time (in seconds) before the POP server connection times out.

NOTE

- **Discuss the timeout period with the customer's network administrator.**

(b) Default setting

- 60sec

(c) Setting range

- 30sec to 300sec

(4) POP3 ACCOUNT

(a) Use

- To set the account name used to login to the POP3 server.

NOTE

- **Discuss the account name with the customer's network administrator.**

(b) Setting range

- Up to 64 characters can be entered as account name.

(5) POP3 PASSWORD

(a) Use

- To set the password used to login to the POP3 server.

NOTE

- **Discuss the password with the customer's network administrator.**

(b) Setting range

- Up to 32 characters can be entered as password.

(6) AUTO RECEPTION

- To set the IP address or host name of the POP3 server.

(a) Use

- To set whether to use the auto reception for Internet fax.
- To set the time interval (minute) for checking E-mail, when auto reception is enabled.

(b) Default setting

- OFF

(c) Setting item

- "OFF"
- ON

NOTE

- **When [ON] is selected, set the time interval (minute) for checking E-mail.**
  Default setting: 15 min
  Setting range: 1 to 60 min

(7) REPLY ADDRESS

- It will be displayed only when the optional FAX kit FK-510 and Image Controller IC-209 or Network Card NC-504 is mounted.

(a) Use

- To enter the e-mail address to be used when sending notification of an error, if an error occurs while receiving an Internet fax.

(b) Procedure

1. Call the ADMIN. MANAGEMENT to the display.
2. Select [E-MAIL SETTING 2], and press the OK key.
3. Select [REPLY ADDRESS], and press the OK key.
4. Enter the reply address (Up to 64 characters).

(8) HEADER PRINT

- It will be displayed only when the optional FAX kit FK-510 and Image Controller IC-209 or Network Card NC-504 is mounted.

(a) Use

- To set whether or not to print header information when printing E-mails that have been received.

(b) Default setting

- OFF

(c) Setting item

- "OFF"
- ON

2.7.16 LDAP SETTING

(1) LDAP SERVER ADDR.

(a) Use

- To set the LDAP server address.

(b) Setting range

- Up to 64 characters can be entered as host name.

(c) Procedure

1. Select [LADP SERVER ADDR.] and press the OK key.
2. Enter the IP address or host name of the LDAP server and press the OK key.

(2) LDAP PORT No.

(a) Use

- To set the port number of the LDAP server.

(b) Default setting

- 389

(c) Setting range

- 1 to 65535

(d) Procedure

1. Select [LADP PORT NO.] and press the OK key.
2. Enter the port number and press the OK key.

(3) SSL SETTING

(a) Use

- Use this feature to encrypt transmission data using SSL.

(b) Default setting

- DISABLE

(c) Setting item

- "DISABLE"
- ENABLE

(4) SEARCH BASE

(a) Use

- To set the path to the LDAP server.

(b) Setting range

- Up to 64 characters can be entered as search base.

(c) Procedure

1. Select [SEARCH BASE] and press the OK key.
2. Enter the database where the LDAP server is searched and press the OK key.

(5) ATTRIBUTE

(a) Use

- Set the search attribute that is used when the LDAP server searches a destination.

(b) Setting range

- Up to 32 characters can be entered as search attribute.

(c) Procedure

1. Select [ATTRIBUTE] and press the OK key.
2. Enter the search attribute and press the OK key.

(6) SEARCH METHOD

(a) Use

- Use this feature to change the method for searching a destination.

(b) Default setting

- CONTAIN

(c) Setting item

- BEGIN
- “CONTAIN”
- END

(7) LDAP TIMEOUT

(a) Use

- Use this feature to change the timeout period applied during a LDAP search operation.

(b) Default setting

- 60sec

(c) Setting range

- 5 to 300sec

(d) Procedure

1. Select [LDAP TIMEOUT] and press the OK key.
2. Enter the timeout period (in seconds) and press the OK key.

(8) MAX. SEARCH RESULTS

(a) Use

- Use this feature to change the maximum LDAP search results.

(b) Default setting

- 100

(c) Setting range

- 5 to 100

(d) Procedure

1. Select [MAX. SEARCH RESULTS] and press the OK key.
2. Enter the maximum search results and press the OK key.

(9) AUTHENTICATION

(a) Use

- Use this feature to change the authentication method for logging into the LDAP server.
  [ANONYMOUS]: Authentication method that does not require a user name and password. (If [ANONYMOUS] is selected, Dynamic authentication is disabled.)
  [SIMPLE]: Simple authentication method that requires only a user name and password.
  [DIGEST-MD5]: Authentication method that can be used in general LDAP servers. If Digest-MD5 authentication fails, CRAM-MD5 authentication is automatically performed.
  [GSS-SPNEGO]: Authentication method used with Active Directory on Windows (Kerberos authentication).

(b) Default setting

- ANONYMOUS

(c) Setting item

- “ANONYMOUS”
- SIMPLE
- DIGEST-MD5
- GSS-SPNEGO

(10) LDAP ACCOUNT

(a) Use

- To set an account name used to connect MFP to the LDAP server.

(b) Setting range

- Up to 64 characters can be entered as account name.

(c) Procedure

1. Select [LDAP ACCOUNT] and press the OK key.
2. Enter the account name of the LDAP server and press the OK key.

(11) LDAP PASSWORD

(a) Use

- To set the password used to connect MFP the LDAP server.

(b) Setting range

- Up to 32 characters can be entered as password.

(c) Procedure

1. Select [LDAP PASSWORD] and press the OK key.
2. Enter the password and press the OK key.

(12) DOMAIN NAME

(a) Use

- To set the domain name used to connect MFP the LDAP server.

(b) Setting range

- Up to 64 characters can be entered as domain name.

(c) Procedure

1. Select [DOMAIN NAME] and press the OK key.
2. To set the path to the LDAP server.

2.7.17 COMM. SETTING

- It will be displayed only when the optional FAX kit FK-510 is mounted.

(1) TONE/PULSE

- [TONE] or [PULSE] cannot be selected, when the SOFT SW11 [6] is set to “1”.

(a) Use

- To set the dial system of phone which is used by the machine.

(b) Default setting

- TONE

(c) Setting item

- “TONE”
- PULSE

NOTE

- **When [PULSE] is selected, select [10pps] or [20pps].**
  User setting is disabled if SOFT SW64 [5] is “0”.

(2) LINE MONITOR

(a) Use

- To set the volume when monitoring communication.

Monitor sound output period

	Start	End
Usual TX/ RX	• Pressing Start key following pressing ten-key. • Pressing Start key following pressing Speed dial. • Pressing One-touch key. • Pressing Redial key.	After receiving V21 signal.
Using On Hook key	Just after pressing On Hook key.	After receiving CED signal.

(b) Default setting

- LOW

(c) Setting item

- OFF
- "LOW"
- HIGH

(3) PSTN/PBX

(a) Use

- To set whether the connected telephone wiring is a public switched telephone network (PSTN) or a private branch exchange (PBX). For a PBX system, the outside line access number (or extension number) must be specified.
- When PRE-FIX NO. is not entered, the outside line access number or extension number is programmed in the [#] key.

(b) Default setting

- PSTN

(c) Setting item

- "PSTN"
- PBX

NOTE

- **When [PBX] is selected, enter the outside line access number or extension number (Up to 4-digits).**

2.7.18 USER SETTING

(1) TIME ZONE

- It will be displayed only when the optional Image Controller IC-209 or Network Card NC-504 is mounted.

(a) Use

- To set the time difference from Greenwich Mean Time.

(b) Default setting

- GMT+00:00

(c) Setting range

- -12 hour to +12 hour (interval: 30 min)

(2) DATE&TIME

- It will be displayed only when the optional FAX kit FK-510 is mounted.

(a) Use

- To set the TIME, DATE and ZONE for FAX.

(b) Default setting

- Time: 00:00
- Date: '11/01/01
- Zone: GMT+00:00

(c) Setting range

Time

- Hour: 00 to 23
- Minute: 00 to 59

Date

- Year: 00 to 99 (2000-2099 will be meant),
- Month: 01 to 12
- Day: 01 to 31

Zone

- Time Zone: -12 hour to +12 hour (interval: 30 min)

(3) DAYLIGHT SAVING

- This is displayed when the optional image controller IC-209, network card NC-504, or fax kit FK-510 is installed.

(a) Use

- To set daylight saving time as necessary.

(b) Default setting

- OFF

(c) Setting range

- OFF
- ON (1 to 150 min.: default 60 min.)

(4) USER FAX NO.

- It will be displayed only when the optional FAX kit FK-510 is mounted.

(a) Use

- To register the user's fax number.

(b) Procedure

1. Call the ADMIN. MANAGEMENT to the display.
2. Select [USER SETTING], and press the OK key.
3. Select [USER FAX NO.], and press the OK key.
4. Enter the fax number (Up to 20-digits)
   Available characters: 0 to 9,Space, +,-

(5) USER NAME

- It will be displayed only when the optional FAX kit FK-510 is mounted.

(a) Use

- To input the user's name (sender name) to be notified to the recipient.

(b) Procedure

1. Call the ADMIN. MANAGEMENT to the display.
2. Select [USER SETTING], and press the OK key.
3. Select [USER NAME], and press the OK key.
4. Enter the user name (Up to 32 characters).

2.7.19 SCAN TO USB

(1) Use

- To select whether or not to allow the Scan to USB function.
- It will be displayed only when the optional Image Controller IC-209 or Network Card NC-504 is mounted.
- This feature can be enabled in bizhub 235 and bizhub 215.

(2) Default setting

- ENABLE

(3) Setting item

- DISABLE
- “ENABLE”

(4) Supported USB memory devices for SCAN TO USB

- FAT16 or FAT32 formatted memory device.
- The memory capacity is less than 4 GB. (the USB memory device that the amount is greater than 4 GB may not operate)
- Without security function added. (security function can be turned off)
- USB flash memory device that is not recognized as multiple drives on the computer.

2.8 COPY SETTING 1

2.8.1 PAPER PRIORITY

(1) Use

- To specify the paper tray that is given priority when auto zoom is selected.

NOTE

- **Paper trays 2 to 5 can be specified when the optional PF-507 is installed.**
- **The multi-bypass tray can be specified when the optional MB-505 is installed.**

(2) Default setting

- TRAY1

(3) Setting item

- “TRAY1”
- TRAY2
- TRAY3
- TRAY4
- TRAY5
- MULTI BYPASS

2.8.2 QUALITY PRIORITY

(1) Use

- To specify the image quality prioritized by default when the main switch is turned ON or the control panel is reset.

(2) Default setting

- TEXT

(3) Setting item

- TEXT/PHOTO
- "TEXT"
- PHOTO

2.8.3 DENSITY PRIORITY

(1) Use

- To specify the density setting method enabled by default when the main switch is turned ON or the control panel is reset.

(2) Default setting

- AUTO

(3) Setting item

- "AUTO"
- MANUAL

2.8.4 DENSITY LEVEL

(1) AUTO

(a) Use

- To set the density level enabled when auto density is selected from the three levels.

(b) Setting range

- LIGHT □■□ DARK

(2) MANUAL

(a) Use

- To set the density level enabled when manual density is selected from the nine levels.

(b) Setting range

- LIGHT □□□□■□□□□ DARK

2.8.5 DUPLEX PRIORITY

(1) Use

- To set the prioritized combination of original and copy in auto duplex printing.

NOTE

- **[1-SIDE -> 2-SIDE] and [2-SIDE -> 2-SIDE] can be set only when DF-625 is installed.**
- **To set the prioritized combination of original and copy in auto duplex printing.**

(2) Default setting

- 1-SIDE -> 1-SIDE

(3) Setting item

- "1-SIDE -> 1-SIDE"
- 1-SIDE -> 2-SIDE
- 2-SIDE -> 1-SIDE
- 2-SIDE -> 2-SIDE

2.8.6 OUTPUT BIND POS.

(1) Use

- To set the binding position applied in auto duplex printing.

(2) Default setting

- LEFT

(3) Setting item

- "LEFT"
- RIGHT
- TOP

2.8.7 ORIG.BINDING POS.

(1) Use

- To set the binding position of an original applied in auto duplex printing.

(2) Default setting

- LEFT

(3) Setting item

- "LEFT"
- RIGHT
- TOP

2.8.8 BINDING POSITION

(1) Use

- To set the page of book original to be scanned first.
  LEFT: Scan starts from the left page. (Left binding)
  RIGHT: Scan starts from the left page. (Right binding)

(2) Default setting

- LEFT

(3) Setting item

- "LEFT"
- RIGHT

2.8.9 MARGIN SETTING

(1) Use

- To set the file margin width when making copies with a file margin.

(2) Default setting

- 10mm

(3) Setting range

- 0 to 20 mm (1 mm step)

2.8.10 ERASE SETTING

(1) Use

- To set the erase width for left, upper, and frame applied in frame/center erase copy.

(2) Default setting

- 10mm

(3) Setting range

- 4 to 20 mm (1 mm step)

(4) Procedure

1. Select [ERASE SETTING] and press the OK key.
2. Select [LEFT], [UPPER], or [FRAME] and press the OK key.
3. Enter the erase width and press the OK key.

2.8.11 SMALL ORIGINAL

(1) Use

- To select whether or not to disable copy when a small original of which size cannot be automatically detected is placed.

(2) Default setting

- ENABLE

(3) Setting item

- DISABLE
- "ENABLE"

2.9 COPY SETTING 2

2.9.1 COPY PRIORITY

(1) Use

- To set the copy mode enabled by default when the main switch is turned ON or the control panel is reset.

(2) Default setting

- AUTO PAPER SELECT

(3) Setting item

- "AUTO PAPER SELECT"
- AUTO ZOOM
- MANUAL

2.9.2 OUTPUT PRIORITY

(1) Use

- To set the finishing mode enabled by default when the main switch is turned ON or the control panel is reset.

(2) Default setting

- NON-SOAT

(3) Setting item

- "NON-SOAT"
- SOAT
- GROUP

2.9.3 CRISSCROSS MODE

(1) Use

- To select whether or not to stack printed paper in an alternating crisscross manner when conditions for crisscross mode are met.

(2) Default setting

- ON

(3) Setting item

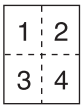
- "ON"
- OFF

2.9.4 4IN1 COPY ORDER

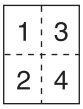
(1) Use

- To set the layout of copy images in 4in1 copies.

PATTERN 1



PATTERN 2



(2) Default setting

- PATTERN1

(3) Setting item

- "PATTERN1"
- PATTERN2

2.9.5 MIXED ORIGINAL

- It will be displayed only when the optional DF-625 is mounted.

(1) Use

- To set whether or not to select mixed original mode when the main switch is turned ON or the control panel is reset.

(2) Default setting

- OFF

(3) Setting item

- ON
- "OFF"

2.9.6 ORIG. DIRECTION

(1) Use

- To set the direction of original.

(2) Default setting

- TOP

(3) Setting item

- “TOP”
- LEFT
- RIGHT
- BOTTOM

2.9.7 BOOK SEPARATION

(1) Use

- To select a finishing option for book separation copy.

(2) Default setting

- OFF

(3) Setting item

- “OFF”
- SEPARATION
- SPREAD

2.9.8 STAMP

(1) Use

- To make a stamp print setting.

(2) Default setting

- OFF

(3) Setting item

- “OFF”
- To make a stamp print setting.
- DATE&TIME
- PAGE+D&T

2.9.9 PAGE FORMAT

(1) Use

- To set the [PAGE NUMBER] format used in stamp print.

(2) Default setting

- P001,P002,

(3) Setting item

- “P001,P002,”
- 1,2,3,

2.9.10 DATE & TIME FORMAT

(1) Use

- To set the [DATE&TIME] format used in stamp print.

NOTE

- **This can be set only when IC-209, NC-504, or FK-510 is installed.**

(2) Default setting

- MM/DD/YY

(3) Setting item

- “MM/DD/YY”
- DD/MM/YY
- YY/MM/DD

2.10 DIAL REGISTRATION

2.10.1 ONE-TOUCH DIAL

(1) Use

- This function can be used to program one-touch dial keys with fax numbers.
- A maximum of 32 destination numbers can be programmed.

NOTE

- **When either IC-209 or NC-504 is installed, an E-mail address can be set.**

(2) Setting item

- Destination name: 20characters.
- Fax numbers 30 digits or E-mail address: 64 digits
- Sub address: 20 digits.
- SID: 20 digits.
- Modem speed: 33.6 kbps/ 14.4kbps/ 9.6 kbps
- Registered data: Automatically.

2.10.2 SPEED DIAL

(1) Use

- This function can be used to program speed dial numbers with fax numbers.
- A maximum of 240 fax numbers (001 to 240) can be programmed.

NOTE

- **When either IC-209 or NC-504 is installed, an E-mail address can be set.**

(2) Setting item

- Destination name: 20characters.
- Fax numbers 30 digits or E-mail address: 64 digits
- Sub address: 20 digits.
- SID: 20 digits.
- Modem speed: 33.6 kbps/ 14.4kbps/ 9.6 kbps
- Registered data: Automatically.

2.10.3 GROUP DIAL

(1) Use

- This function can be used to program a single one-touch dial key.
- A maximum of 50 different fax numbers as one group.

(2) Setting item

- Group name: 20 characters.
- Information of destination station: The contents of one-touch or speed dial.

2.10.4 PROGRAM DIAL

- It will be displayed only when the optional FAX kit FK-510 is mounted.

(1) Use

- To register the destination number and TX/RX function on one-touch dial keys.
- The function of registration:
  - Broadcast transmission
  - Timer transmission
  - Mailbox transmission
  - Polling reception
  - Relay initiating transmission

(2) Procedure

1. Press the Utility key.
2. Select [DIAL REGISTRATION], press the OK key.
3. Select [PROGRAM DIAL], press the OK key.
4. Press a target key among one-touch dial key 29 to 32.
5. Select a target function, and press the OK key.
6. Set each function.

2.11 FAX REGISTRATION

- It will be displayed only when the optional FAX kit FK-510 is mounted.

2.11.1 MAILBOX

(1) Use

- To specify mailbox IDs in order to receive faxes with mailbox reception only if the mailbox ID sent by the caller matches the mailbox ID set on this machine.

(2) Procedure

1. Press the Utility key.
2. Select [FAX REGISTRATION], and press the OK key.
3. Select [MAILBOX], and press the OK key.
4. Enter the mailbox number, and press the OK key.
   For the mailbox number, specify a numeric value between 1 and 5.
5. Enter a User Box ID (4-digit), and press the OK key.
   For User Box ID, specify a numeric value between 0000 and 9999.
6. Enter a password (4-digit), and press the OK key.
   For password, specify a numeric value between 0000 and 9999.

When not registering a password, press the OK key without entering any digits.

NOTE

- **A relay box ID cannot be the same as a mailbox ID.**

2.11.2 RELAY BOX

(1) Use

- To program the relay boxes in order for this machine (acting as a relay station) to receive a document from another fax machine (transmitting station), then transmit the document to multiple recipients (receiving stations).

(2) Procedure

1. Press the Utility key.
2. Select [FAX REGISTRATION], and press the OK key.
3. Select [RELAY BOX], and press the OK key.
4. Enter the relay box number, and press the OK key.
   For relay box number, specify a numeric value between 0 and 9.
5. Enter a user box ID (4-digit), and press the OK key.
   For user box ID, specify a numeric value between 0000 and 9999.
6. Enter a password (4-digit), and press the OK key.
   For password, specify a numeric value between 0000 and 9999.
   When not registering a password, press the OK key without entering any digits.
7. To return a relay result report, select [REPORT], and press the OK key.
8. Use the one-touch dial key, speed dial, or 10-key to specify a return destination, and press the OK key.
9. Select [DESTINATION], and press the OK key.
10. Use a one-touch dial Key, speed dial or grope dial to specify a receiving station, and press the OK key.
    SOFT SW50 [7] is set to “1”: Can input FAX number and E-mail address.
    SOFT SW50 [7] is set to “0”: Can input only an FAX number.

NOTE

- **A relay box ID cannot be the same as a mailbox ID.**

2.12 FAX TX OPERATION

- It will be displayed only when the optional FAX kit FK-510 is mounted.

2.12.1 DENSITY LEVEL

(1) Use

- To set the default scanning density to one of five levels.
- For paper with a dark color (background), select a setting towards [LIGHT]. For faint or colored text, select a setting toward [DARK].

(2) Setting range

- LIGHT □□■□□ DARK

2.12.2 QUALITY PRIORITY

(1) Use

- To set the default scanning resolution (image quality) to one of the following.

(2) Default setting

- STD/TEXT

(3) Setting item

- “STD/TEXT”
- FINE/TEXT
- S-FINE/TEXT
- STD/PHOTO
- FINE/PHOTO
- S-FINE/PHOTO

2.12.3 DEFAULT TX

- It will be displayed only when the optional reverse automatic document feeder DF-625 is mounted.

(1) Use

- To set the default of TX mode.

(2) Default setting

- MEMORY TX

(3) Setting item

- “MEMORY TX”
- ADF TX

2.12.4 HEADER

(1) Use

- To set whether or not added the header (date sent, sender's name and fax number, etc.) when sending faxes.
- The contents of registration.
  - TX data and time.
  - Transmitter's own name.
  - Transmitter's own tel number.
  - Session number.
  - Page number.
  - Total page number (only displayed by use the memory TX job).
- It is selectable by soft switch to transmit only pages which have failed to transmit, if communication error occurs on the way transmitting document. In this case, page number on Header Print is continued from the page number of the document successfully transmitted.
- Whether user setting is allowed or not is selectable with Soft switch.
- For North America, Canada and Korea, header print is set ON, and setting change to OFF by the user is not allowed.

(2) Default setting

- ON

(3) Setting item

- OFF
- “ON”

2.12.5 CONFIRM FAX NO.

(1) Use

- To set whether to use confirm address function.
- When specifying a fax destination with direct input, a screen appears prompting you to enter the fax number again for confirmation. Entering the fax number twice prevents one from entering incorrect destinations.

(2) Default setting

- OFF

(3) Setting item

- “OFF”
- ON

2.13 FAX RX OPERATION

- It will be displayed only when the optional FAX kit FK-510 is mounted.

2.13.1 MEMORY RX MODE

(1) Use

- To set whether or not to receive memory RX.

(2) Default setting

- OFF

(3) Setting item

- “OFF”
- ON

NOTE

- **When [ON] is selected, enter ON TIME, OFF TIME and PASSWORD (0000 to 9999).**
- **When set to [OFF] from [ON], set password is necessary.**

2.13.2 NO. of RINGS

(1) Use

- To set the number of call sound until the incoming call is answered automatically.

(2) Default setting

- 2

(3) Setting range

- 1 to 16

2.13.3 REDUCTION RX

(1) Use

- To set whether documents longer than the paper are printed reduced ([ON]), split ([OFF]), or discarded ([CUT]).

OFF	100% RX mode
ON	Reduction print mode

CUT	Cut mode

(2) Default setting

- ON

(3) Setting item

- OFF
- “ON”
- CUT

(4) 100% RX mode

- All receiving data is divided into 2 pages or more, and is printed.

Recording paper size	Footer	Length of received image	Printing
A3	OFF	Less than 412 mm	1 page (1 page in 202 mm or less, it prints to A4)
		413 mm to 816 mm	Divide into 2 pages
		817 mm to 1,220 mm	Divide into 3 pages
		1,221 mm or more	Divide into 4 pages or more
	ON	Less than 408 mm	1 page (1 page in 198 mm or less, it prints to A4)
		409 mm to 808 mm	Divide into 2 pages
		809 mm to 1,208 mm	Divide into 3 pages
		1,209 mm or more	Divide into 4 pages or more
A4 (Receiving image width of A3 or B4)	OFF	Less than 202 mm	1 page
		203 mm to 396 mm	Divide into 2 pages
		397 mm to 590 mm	Divide into 3 pages
		591 mm or more	Divide into 4 pages or more
	ON	Less than 198 mm	1 page
		199 mm to 388 mm	Divide into 2 pages
		389 mm to 578 mm	Divide into 3 pages
		579 mm or more	Divide into 4 pages or more
A4/A4S (Receiving image width of A4)	OFF	Less than 289 mm	1 page (1 page in 140 mm or less, it prints to A5)
		290 mm to 570 mm	Divide into 2 pages
		571 mm to 851 mm	Divide into 3 pages
		852 mm or more	Divide into 4 pages or more
	ON	Less than 285 mm	1 page (1 page in 136 mm or less, it prints to A5)
		286 mm to 562 mm	Divide into 2 pages
		563 mm to 839 mm	Divide into 3 pages
		840 mm or more	Divide into 4 pages or more
B4	OFF	Less than 356 mm	1 page (1 page in 174 mm or less, it prints to B5)
		357 mm to 704 mm	Divide into 2 pages
		705 mm to 1,052 mm	Divide into 3 pages
		1,053 mm or more	Divide into 4 pages or more
	ON	Less than 352 mm	1 page (1 page in 170 mm or less, it prints to B5)
		353 mm to 696 mm	Divide into 2 pages
		697 mm to 1,040 mm	Divide into 3 pages
		1,041 mm or more	Divide into 4 pages or more
B5	OFF	Less than 174 mm	1 page
		175 mm to 340 mm	Divide into 2 pages
		341 mm to 506 mm	Divide into 3 pages
		507 mm or more	Divide into 4 pages or more
	ON	Less than 170 mm	1 page
		171 mm to 332 mm	Divide into 2 pages
		333 mm to 494 mm	Divide into 3 pages
		495 mm or more	Divide into 4 pages or more
A5	OFF	Less than 140 mm	1 page
		141 mm to 272 mm	Divide into 2 pages
		273 mm to 404 mm	Divide into 3 pages
		405 mm or more	Divide into 4 pages or more
	ON	Less than 136 mm	1 page
		137 mm to 264 mm	Divide into 2 pages

Recording paper size	Footer	Length of received image	Printing
		265 mm to 392 mm	Divide into 3 pages
		393 mm or more	Divide into 4 pages or more
11 x 17	OFF	Less than 424 mm	1 page (1 page in 208 mm or less, it prints to Letter)
		425 mm to 840 mm	Divide into 2 pages
		841 mm to 1,256 mm	Divide into 3 pages
		1,257 mm or more	Divide into 4 pages or more
	ON	Less than 420 mm	1 page (1 page in 204 mm or less, it prints to Letter)
		421 mm to 832 mm	Divide into 2 pages
		833 mm to 1,244 mm	Divide into 3 pages
		1,245 mm or more	Divide into 4 pages or more
Letter (Receiving image width of A3 or B4)	OFF	Less than 208 mm	1 page
		209 mm to 408 mm	Divide into 2 pages
		409 mm to 608 mm	Divide into 3 pages
		609 mm or more	Divide into 4 pages or more
	ON	Less than 204 mm	1 page
		205 mm to 400 mm	Divide into 2 pages
		401 mm to 596 mm	Divide into 3 pages
		597 mm or more	Divide into 4 pages or more
Letter/Letter S (Receiving image width of A4)	OFF	Less than 271 mm	1 page (1 page in 132 mm or less, it prints to Invoice)
		272 mm to 534 mm	Divide into 2 pages
		535 mm to 797 mm	Divide into 3 pages
		798 mm or more	Divide into 4 pages or more
	ON	Less than 267 mm	1 page (1 page in 128 mm or less, it prints to Invoice)
		268 mm to 526 mm	Divide into 2 pages
		527 mm to 785 mm	Divide into 3 pages
		786 mm or more	Divide into 4 pages or more
Legal	OFF	Less than 348 mm	1 page
		349 mm to 688 mm	Divide into 2 pages
		689 mm to 1,028 mm	Divide into 3 pages
		1,029 mm or more	Divide into 4 pages or more
	ON	Less than 344 mm	1 page
		345 mm to 680 mm	Divide into 2 pages
		681 mm to 1,024 mm	Divide into 3 pages
		1,025 mm or more	Divide into 4 pages or more
Invoice	OFF	Less than 132 mm	1 page
		133 mm to 256 mm	Divide into 2 pages
		257 mm to 380 mm	Divide into 3 pages
		381 mm or more	Divide into 4 pages or more
	ON	Less than 128 mm	1 page
		129 mm to 248 mm	Divide into 2 pages
		249 mm to 368 mm	Divide into 3 pages
		369 mm or more	Divide into 4 pages or more

(5) Reduction print mode

- It reduces (only the sub scanning direction) and prints so that receiving data will in a recording paper.

Recording paper size	Footer	Length of received image	Printing
A3	OFF	Less than 412 mm	1 page with 100% (1 page in 269 mm or less, it prints to A4)
		413 mm to 458 mm	1 page with (412 mm / image length)% reduction
		459 mm to 816 mm	Divide into 2 pages with 100%
		817 mm to 1,220 mm	Divide into 3 pages with 100%
		1,221 mm or more	Divide into 3 pages (or more) with 100%
	ON	Less than 408 mm	1 page with 100% (1 page in 265 mm or less, it prints to A4)
		409 mm to 454 mm	1 page with (408 mm / image length)% reduction
		455 mm to 808 mm	Divide into 2 pages with 100%
		809 mm to 1,208 mm	Divide into 3 pages with 100%
		1,209 mm or more	Divide into 3 pages (or more) with 100%

Recording paper size	Footer	Length of received image	Printing
A4 (Receiving image width of A3 or B4)	OFF	Less than 202 mm	1 page with 100%
		203 mm to 269 mm	1 page with (202 mm / image length)% reduction
		270 mm to 396 mm	Divide into 2 pages with 100%
		397 mm to 590 mm	Divide into 3 pages with 100%
		591 mm or more	Divide into 3 pages (or more) with 100%
	ON	Less than 198 mm	1 page with 100%
		199 mm to 265 mm	1 page with (198 mm / image length)% reduction
		266 mm to 388 mm	Divide into 2 pages with 100%
		389 mm to 578 mm	Divide into 3 pages with 100%
		579 mm or more	Divide into 3 pages (or more) with 100%
A4/A4S (Receiving image width of A4)	OFF	Less than 289 mm	1 page with 100% (1 page in 187 mm or less, it prints to A5)
		290 mm to 385 mm	1 page with (289 mm / image length)% reduction
		386 mm to 570 mm	Divide into 2 pages with 100%
		571 mm to 851 mm	Divide into 3 pages with 100%
		852 mm or more	Divide into 3 pages (or more) with 100%
	ON	Less than 285 mm	1 page with 100% (1 page in 183 mm or less, it prints to A5)
		286 mm to 381 mm	1 page with (285 mm / image length)% reduction
		382 mm to 562 mm	Divide into 2 pages with 100%
		563 mm to 839 mm	Divide into 3 pages with 100%
		840 mm or more	Divide into 3 pages (or more) with 100%
B4	OFF	Less than 356 mm	1 page with 100% (1 page in 193 mm or less, it prints to B5)
		357 mm to 396 mm	1 page with (356 mm / image length)% reduction
		397 mm to 704 mm	Divide into 2 pages with 100%
		705 mm to 1,052 mm	Divide into 3 pages with 100%
		1,053 mm or more	Divide into 3 pages (or more) with 100%
	ON	Less than 352 mm	1 page with 100% (1 page in 189 mm or less, it prints to B5)
		353 mm to 392 mm	1 page with (352 mm / image length)% reduction
		393 mm to 696 mm	Divide into 2 pages with 100%
		697 mm to 1,040 mm	Divide into 3 pages with 100%
		1,041 mm or more	Divide into 3 pages (or more) with 100%
B5	OFF	Less than 174 mm	1 page with 100%
		175 mm to 193 mm	1 page with (147 mm / image length)% reduction
		194 mm to 340 mm	Divide into 2 pages with 100%
		341 mm to 506 mm	Divide into 3 pages with 100%
		507 mm or more	Divide into 3 pages (or more) with 100%
	ON	Less than 170 mm	1 page with 100%
		171 mm to 189 mm	1 page with (170 mm / image length)% reduction
		190 mm to 332 mm	Divide into 2 pages with 100%
		333 mm to 494 mm	Divide into 3 pages with 100%
		495 mm or more	Divide into 3 pages (or more) with 100%
A5	OFF	Less than 140 mm	1 page with 100%
		141 mm to 187 mm	1 page with (140 mm / image length)% reduction
		188 mm to 272 mm	Divide into 2 pages with 100%
		273 mm to 404 mm	Divide into 3 pages with 100%
		405 mm or more	Divide into 3 pages (or more) with 100%
	ON	Less than 136 mm	1 page with 100%
		137 mm to 183 mm	1 page with (136 mm / image length)% reduction
		184 mm to 264 mm	Divide into 2 pages with 100%
		265 mm to 392 mm	Divide into 3 pages with 100%
		393 mm or more	Divide into 3 pages (or more) with 100%
11 x 17	OFF	Less than 424 mm	1 page with 100% (1 page in 255 mm or less, it prints to Letter)
		425 mm to 471 mm	1 page with (424 mm / image length)% reduction
		472 mm to 840 mm	Divide into 2 pages with 100%
		841 mm to 1,256 mm	Divide into 3 pages with 100%
		1257 mm or more	Divide into 3 pages (or more) with 100%
	ON	Less than 420 mm	1 page with 100% (1 page in 251 mm or less, it prints to Letter)
		421 mm to 467 mm	1 page with (420 mm / image length)% reduction

Recording paper size	Footer	Length of received image	Printing
		468 mm to 832 mm	Divide into 2 pages with 100%
		833 mm to 1,244 mm	Divide into 3 pages with 100%
		1,245 mm or more	Divide into 3 pages (or more) with 100%
Letter (Receiving image width of A3 or B4)	OFF	Less than 208 mm	1 page with 100%
		209 mm to 297 mm	1 page with (208 mm / image length)% reduction
		298 mm to 408 mm	Divide into 2 pages with 100%
		409 mm to 608 mm	Divide into 3 pages with 100%
		609 mm or more	Divide into 3 pages (or more) with 100%
	ON	Less than 204 mm	1 page with 100%
		205 mm to 291 mm	1 page with (204 mm / image length)% reduction
		292 mm to 400 mm	Divide into 2 pages with 100%
		401 mm to 596 mm	Divide into 3 pages with 100%
		597 mm or more	Divide into 3 pages (or more) with 100%
Letter/Letter S (Receiving image width of A4)	OFF	Less than 271 mm	1 page with 100% (1 page in 189 mm or less, it prints to Invoice)
		272 mm to 387 mm	1 page with (271 mm / image length)% reduction
		388 mm to 534 mm	Divide into 2 pages with 100%
		535 mm to 797 mm	Divide into 3 pages with 100%
		798 mm or more	Divide into 3 pages (or more) with 100%
	ON	Less than 267 mm	1 page with 100% (1 page in 185 mm or less, it prints to Invoice)
		268 mm to 383 mm	1 page with (267 mm / image length)% reduction
		384 mm to 526 mm	Divide into 2 pages with 100%
		527 mm to 785 mm	Divide into 3 pages with 100%
		786 mm or more	Divide into 3 pages (or more) with 100%
Legal	OFF	Less than 348 mm	1 page with 100%
		349 mm to 385 mm	1 page with (347 mm / image length)% reduction
		386 mm to 688 mm	Divide into 2 pages with 100%
		689 mm to 1,028 mm	Divide into 3 pages with 100%
		1,029 mm or more	Divide into 3 pages (or more) with 100%
	ON	Less than 344 mm	1 page with 100%
		345 mm to 381 mm	1 page with (343 mm / image length)% reduction
		382 mm to 680 mm	Divide into 2 pages with 100%
		681 mm to 1,016 mm	Divide into 3 pages with 100%
		1,017 mm or more	Divide into 3 pages (or more) with 100%
Invoice	OFF	Less than 132 mm	1 page with 100%
		133 mm to 189 mm	1 page with (132 mm / image length)% reduction
		190 mm to 256 mm	Divide into 2 pages with 100%
		257 mm to 380 mm	Divide into 3 pages with 100%
		381 mm or more	Divide into 3 pages (or more) with 100%
	ON	Less than 128 mm	1 page with 100%
		129 mm to 185 mm	1 page with (128 mm / image length)% reduction
		186 mm to 248 mm	Divide into 2 pages with 100%
		249 mm to 368 mm	Divide into 3 pages with 100%
		369 mm or more	Divide into 3 pages (or more) with 100%

(6) Cut mode

- The data that is larger than 1-page record area is cut and not recorded (to 24 mm).

Recording paper size	Footer	Length of received image	Printing
A3	OFF	Less than 412 mm	1 page (1 page in 226 mm or less, it prints to A4)
		413 mm to 436 mm	Print into 1 page. 1 mm to 24 mm of end is cut.
		437 mm to 816 mm	Divide into 2 pages
		817 mm to 840 mm	Divide into 2 pages. 1 mm to 24 mm of end is cut.
		841 mm to 1,220 mm	Divide into 3 pages
		1,221 mm or more	Divide into 3 pages (or more). 1 mm to 24 mm of end is cut.
	ON	Less than 408 mm	1 page (1 page in 222 mm or less, it prints to A4)
		409 mm to 432 mm	Print into 1 page. 1 mm to 24 mm of end is cut.
		433 mm to 808 mm	Divide into 2 pages

Recording paper size	Footer	Length of received image	Printing
		809 mm to 832 mm	Divide into 2 pages. 1 mm to 24 mm of end is cut.
		833 mm to 1,208 mm	Divide into 3 pages
		1,209 mm or more	Divide into 3 pages (or more). 1 mm to 24 mm of end is cut.
A4 (Receiving image width of A3 or B4)	OFF	Less than 202 mm	1 page
		203 mm to 226 mm	Print into 1 page. 1 mm to 24 mm of end is cut.
		227 mm to 396 mm	Divide into 2 pages
		397 mm to 420 mm	Divide into 2 pages. 1 mm to 24 mm of end is cut.
		421 mm to 590 mm	Divide into 3 pages
		591 mm or more	Divide into 3 pages (or more). 1 mm to 24 mm of end is cut.
	ON	Less than 198 mm	1 page
		199 mm to 222 mm	Print into 1 page. 1 mm to 24 mm of end is cut.
		223 mm to 388 mm	Divide into 2 pages
		389 mm to 412 mm	Divide into 2 pages. 1 mm to 24 mm of end is cut.
		413 mm to 578 mm	Divide into 3 pages
		579 mm or more	Divide into 3 pages (or more). 1 mm to 24 mm of end is cut.
A4/A4S (Receiving image width of A4)	OFF	Less than 289 mm	1 page (1 page in 164 mm or less, it prints to A5)
		290 mm to 313 mm	Print into 1 page. 1 mm to 24 mm of end is cut.
		314 mm to 570 mm	Divide into 2 pages
		571 mm to 594 mm	Divide into 2 pages. 1 mm to 24 mm of end is cut.
		595 mm to 851 mm	Divide into 3 pages
		852 mm or more	Divide into 3 pages (or more). 1 mm to 24 mm of end is cut.
	ON	Less than 285 mm	1 page (1 page in 160 mm or less, it prints to A5)
		286 mm to 309 mm	Print into 1 page. 1 mm to 24 mm of end is cut.
		310 mm to 562 mm	Divide into 2 pages
		563 mm to 586 mm	Divide into 2 pages. 1 mm to 24 mm of end is cut.
		587 mm to 839 mm	Divide into 3 pages
		840 mm or more	Divide into 3 pages (or more). 1 mm to 24 mm of end is cut.
B4	OFF	Less than 356 mm	1 page (1 page in 198 mm or less, it prints to B5)
		357 mm to 380 mm	Print into 1 page. 1 mm to 24 mm of end is cut.
		381 mm to 704 mm	Divide into 2 pages
		705 mm to 728 mm	Divide into 2 pages. 1 mm to 24 mm of end is cut.
		729 mm to 1,052 mm	Divide into 3 pages
		1,053 mm or more	Divide into 3 pages (or more). 1 mm to 24 mm of end is cut.
	ON	Less than 352 mm	1 page (1 page in 194 mm or less, it prints to B5)
		353 mm to 376 mm	Print into 1 page. 1 mm to 24 mm of end is cut.
		377 mm to 696 mm	Divide into 2 pages
		697 mm to 720 mm	Divide into 2 pages. 1 mm to 24 mm of end is cut.
		721 mm to 1,040 mm	Divide into 3 pages
		1,041 mm or more	Divide into 3 pages (or more). 1 mm to 24 mm of end is cut.
B5	OFF	Less than 174 mm	1 page
		175 mm to 198 mm	Print into 1 page. 1 mm to 24 mm of end is cut.
		199 mm to 340 mm	Divide into 2 pages
		341 mm to 364 mm	Divide into 2 pages. 1 mm to 24 mm of end is cut.
		365 mm to 506 mm	Divide into 3 pages
		507 mm or more	Divide into 3 pages (or more). 1 mm to 24 mm of end is cut.
	ON	Less than 170 mm	1 page
		171 mm to 194 mm	Print into 1 page. 1 mm to 24 mm of end is cut.
		195 mm to 332 mm	Divide into 2 pages
		333 mm to 356 mm	Divide into 2 pages. 1 mm to 24 mm of end is cut.
		357 mm to 494 mm	Divide into 3 pages
		495 mm or more	Divide into 3 pages (or more). 1 mm to 24 mm of end is cut.
A5	OFF	Less than 140 mm	1 page
		141 mm to 164 mm	Print into 1 page. 1 mm to 24 mm of end is cut.
		165 mm to 272 mm	Divide into 2 pages
		273 mm to 296 mm	Divide into 2 pages. 1 mm to 24 mm of end is cut.
		297 mm to 404 mm	Divide into 3 pages
		405 mm or more	Divide into 3 pages (or more). 1 mm to 24 mm of end is cut.

Recording paper size	Footer	Length of received image	Printing
	ON	Less than 136 mm	1 page
		137 mm to 160 mm	Print into 1 page. 1 mm to 24 mm of end is cut.
		161 mm to 264 mm	Divide into 2 pages
		265 mm to 288 mm	Divide into 2 pages. 1 mm to 24 mm of end is cut.
		289 mm to 392 mm	Divide into 3 pages
		393 mm or more	Divide into 3 pages (or more). 1 mm to 24 mm of end is cut.
11 x 17	OFF	Less than 424 mm	1 page (1 page in 232 mm or less, it prints to Letter)
		425 mm to 448 mm	Print into 1 page. 1 mm to 24 mm of end is cut.
		449 mm to 840 mm	Divide into 2 pages
		841 mm to 864 mm	Divide into 2 pages. 1 mm to 24 mm of end is cut.
		865 mm to 1,256 mm	Divide into 3 pages
		1,257 mm or more	Divide into 3 pages (or more). 1 mm to 24 mm of end is cut.
	ON	Less than 420 mm	1 page (1 page in 228 mm or less, it prints to Letter)
		421 mm to 444 mm	Print into 1 page. 1 mm to 24 mm of end is cut.
		445 mm to 832 mm	Divide into 2 pages
		833 mm to 856 mm	Divide into 2 pages. 1 mm to 24 mm of end is cut.
		857 mm to 1,244 mm	Divide into 3 pages
		1,245 mm or more	Divide into 3 pages (or more). 1 mm to 24 mm of end is cut.
Letter (Receiving image width of A3 or B4)	OFF	Less than 208 mm	1 page
		209 mm to 232 mm	Print into 1 page. 1 mm to 24 mm of end is cut.
		233 mm to 408 mm	Divide into 2 pages
		409 mm to 432 mm	Divide into 2 pages. 1 mm to 24 mm of end is cut.
		433 mm to 608 mm	Divide into 3 pages
		609 mm or more	Divide into 3 pages (or more). 1 mm to 24 mm of end is cut.
	ON	Less than 204 mm	1 page
		205 mm to 228 mm	Print into 1 page. 1 mm to 24 mm of end is cut.
		229 mm to 400 mm	Divide into 2 pages
		401 mm to 424 mm	Divide into 2 pages. 1 mm to 24 mm of end is cut.
		425 mm to 596 mm	Divide into 3 pages
		597 mm or more	Divide into 3 pages (or more). 1 mm to 24 mm of end is cut.
Letter/Letter S (Receiving image width of A4)	OFF	Less than 271 mm	1 page (1 page in 156 mm or less, it prints to Invoice)
		272 mm to 295 mm	Print into 1 page. 1 mm to 24 mm of end is cut.
		296 mm to 534 mm	Divide into 2 pages
		535 mm to 558 mm	Divide into 2 pages. 1 mm to 24 mm of end is cut.
		559 mm to 797 mm	Divide into 3 pages
		798 mm or more	Divide into 3 pages (or more). 1 mm to 24 mm of end is cut.
	ON	Less than 267 mm	1 page (1 page in 152 mm or less, it prints to Invoice)
		268 mm to 291 mm	Print into 1 page. 1 mm to 24 mm of end is cut.
		292 mm to 526 mm	Divide into 2 pages
		527 mm to 550 mm	Divide into 2 pages. 1 mm to 24 mm of end is cut.
		551 mm to 785 mm	Divide into 3 pages
		786 mm or more	Divide into 3 pages (or more). 1 mm to 24 mm of end is cut.
Legal	OFF	Less than 348 mm	1 page
		349 mm to 371 mm	Print into 1 page. 1 mm to 24 mm of end is cut.
		372 mm to 688 mm	Divide into 2 pages
		689 mm to 712 mm	Divide into 2 pages. 1 mm to 24 mm of end is cut.
		713 mm to 1,028 mm	Divide into 3 pages
		1,029 mm or more	Divide into 3 pages (or more). 1 mm to 24 mm of end is cut.
	ON	Less than 344 mm	1 page
		345 mm to 367 mm	Print into 1 page. 1 mm to 24 mm of end is cut.
		368 mm to 680 mm	Divide into 2 pages
		681 mm to 704 mm	Divide into 2 pages. 1 mm to 24 mm of end is cut.
		705 mm to 1,016 mm	Divide into 3 pages
		1,017 mm or more	Divide into 3 pages (or more). 1 mm to 24 mm of end is cut.
Invoice	OFF	Less than 132 mm	1 page
		133 mm to 156 mm	Print into 1 page. 1 mm to 24 mm of end is cut.
		157 mm to 256 mm	Divide into 2 pages

Recording paper size	Footer	Length of received image	Printing
		257 mm to 280 mm	Divide into 2 pages. 1 mm to 24 mm of end is cut.
		281 mm to 380 mm	Divide into 3 pages
		381 mm or more	Divide into 3 pages (or more). 1 mm to 24 mm of end is cut.
	ON	Less than 128 mm	1 page
		129 mm to 152 mm	Print into 1 page. 1 mm to 24 mm of end is cut.
		153 mm to 248 mm	Divide into 2 pages
		249 mm to 272 mm	Divide into 2 pages. 1 mm to 24 mm of end is cut.
		273 mm to 368 mm	Divide into 3 pages
		369 mm or more	Divide into 3 pages (or more). 1 mm to 24 mm of end is cut.

2.13.4 RX PRINT

(1) Use

- To set whether the fax is only printed after all document pages have been received ([MEMORY RX]) or printing begins as soon as the first page of the document is received ([PRINT RX]).

(2) Default setting

- MEMORY RX

(3) Setting item

- “MEMORY RX”
- PRINT RX

2.13.5 RX MODE

(1) Use

- To set the reception mode to automatic reception or manual reception.

AUTO RX	Automatically begins receiving after the set number of rings.
MANUAL RX	Does not automatically receive the fax. Reception begins after making a connection by picking up the telephone receiver or pressing the Speaker key, then pressing the Start key.

(2) Default setting

- AUTO RX

(3) Setting item

- “AUTO RX”
- MANUAL RX

2.13.6 FORWARD

(1) Use

- To set whether or not the received document is forwarded.

OFF	The received document is not forwarded.
ON	The received document is forwarded to the specified fax number or e-mail address.
ON(PRINT)	The received document is printed by this machine at the same time that it is forwarded to the specified fax number or e-mail address.

NOTE

- **In order to forward the document to an e-mail address, the optional Image Controller IC-209 or Network Card NC-504 is required.**

(2) Default setting

- OFF

(3) Setting item

- “OFF”
- ON
- ON(PRINT)

NOTE

- **When [ON] or [ON(PRINT)] is selected, specify a fax number or e-mail address of a forward destination.**

2.13.7 FOOTER

(1) Use

- To set whether or not the reception information (RX data and time, RX management number, RX page number, Transmitter's ID) is printed at the bottom of each received document.

(2) Default setting

- OFF

(3) Setting item

- “OFF”
- ON

(4) Attaching footer print

- When footer is selected ON, it is printed at the end of printable area. 4 mm line area from the end of printable area is kept for printing footer. It should be attached on footer area regardless of image length. If the received image is divided into 2 pages or more, footer is printed in the specified location of all the recording sheets of paper printed.

(5) Image data area

- The received image data is printed on the area except for 12 mm from recording paper size. (No printable area: 8 mm (1/3 in) + Footer area: 4 mm (1/4 in))
- The following table is the image printable area of each recording paper size due to setting of footer print.

Paper length		Footer OFF	Footer ON	
		Image data area	Image data area	Footer area
A3	420 mm	412 mm	408 mm	+4 mm
A4S	297 mm	289 mm	285 mm	+4 mm
A4	210 mm	202 mm	198 mm	+4 mm
B4	364 mm	356 mm	352 mm	+4 mm
B5	182 mm	174 mm	170 mm	+4 mm
A5	148 mm	140 mm	136 mm	+4 mm
11 x 17	432 mm	424 mm	420 mm	+4 mm
Legal	356 mm	348 mm	344 mm	+4 mm
LetterS	279 mm	271 mm	267 mm	+4 mm
Letter	216 mm	208 mm	204 mm	+4 mm
Invoice	140 mm	132 mm	128 mm	+4 mm

2.13.8 SELECT TRAY

(1) Use

- To select which paper tray can be used to supply paper when printing received documents or transmission reports. (A paper tray that cannot be used for supplying paper can also be specified.)
- To specify the tray not to supply a paper.

(2) Procedure

1. Press the Utility key.
2. Select [FAX RX OPERATION], and press the OK key.
3. Select [SERECT TRAY], and press the OK key.
4. Select a target tray, and press the OK key.
5. Select the [DISABLE] or [ENABLE], and press the OK key.

(3) Default setting

- ENABLE

(4) Setting item

- DISABLE
- “ENABLE”

2.13.9 CLOSED NETWORK

(1) Use

- To set whether or not the fax is received if the sender's fax number does not match the fax number programmed in this machine's one-touch dial keys.

(2) Default setting

- OFF

(3) Setting item

- “OFF”
- ON

2.14 REPORTING

- It will be displayed only when the optional FAX kit FK-510 is mounted.

2.14.1 ACTIVITY REPORT

(1) Use

- To set whether the report is printed automatically when the 60th transmission/ reception is reached.

(2) Default setting

- ON

(3) Setting item

- OFF
- “ON”

2.14.2 RESERVATION REPORT

(1) Use

- If multiple recipients are specified for transmission, such as with broadcast transmission and polling reception, a report can be printed to show specified settings. To set whether this report is printed automatically.

(2) Default setting

- OFF

(3) Setting item

- “OFF”
- ON

2.14.3 TX RESULT REPORT

(1) Use

- To set whether the report showing the result of a transmission is printed automatically after the transmission is finished.

(2) Default setting

- OFF

(3) Setting item

- “OFF”
- ON

2.14.4 RX RESULT REPORT

(1) Use

- To set whether the report showing the result of a reception is printed automatically after mailbox reception is finished. (If regular reception is not finished normally, a report will always be printed, regardless of the selected setting.)

(2) Default setting

- OFF

(3) Setting item

- “OFF”
- ON

2.15 SCAN SETTING

2.15.1 RESOLUTION

(1) Use

- The default settings for resolution used by the Scan to E-mail and Scan to Server (FTP) functions can be specified.

(2) Default setting

- 300 × 300dpi

(3) Setting item

- 150 × 150dpi
- “300 × 300dpi”
- 600 × 600dpi

2.15.2 IMAGE FORMAT

(1) Use

- The default settings for data format used by the Scan to E-mail and Scan to Server (FTP) functions can be specified.

(2) Default setting

- PDF

(3) Setting item

- TIFF
- “PDF”
- JPEG

2.15.3 BW CODING METHOD

(1) Use

- The default settings for coding method, used by the Scan to E-mail and Scan to Server (FTP) functions can be specified.

(2) Default setting

- MH

(3) Setting item

- “MH”
- MR
- MMR

2.15.4 COLOR SETTING

(1) Use

- The default settings for color setting, used by the Scan to E-mail and Scan to Server (FTP) functions can be specified.

(2) Default setting

- BW

(3) Setting item

- “BW”
- GRAY
- COLOR

NOTE

- **When selecting [BW], if [Image Format] is [JPEG], it changes to [PDF] automatically.**

3. ADJUSTMENT ITEM LIST

1. List 1

Replacement Part/Service Job / Adjustment/Setting Items			No	Tray 1		PF-507	Drum	Drum charge corona assy	Developer	Cleaning blade	Transfer roller unit	Fusing unit
				Feed roller	Separation roll assy	Feed roller						
SERVICE MODE	SERVICE'S CHOICE	ID ADJUST	1				3*		4*			
		VG ADJUST	2				4*	1*				
		LEADING EDGE	3									
		TRAILING EDGE	4									
		VERTICAL EDGE	5									
		LOOP Ad. (TRAY1)	6	3*	3*							
		LOOP Ad. (TRAY2-5)	7			3*						
		LOOP Ad. (BYPASS)	8									
		FUSER TEMP.	9									2*
	ADJUST	PRN MAIN	10									
		PRN SUB	11									
		CIS MAIN ZOOM	12									
		CIS SUB ZOOM	13									
		CIS MAIN REGIST	14									
		CIS SUB REGIST	15									
		ADF SUB ZOOM	16									
		ADF MAIN ZOOM	17									
		ADF SUB REGIST1/2	18									
		ADF MAIN REGIST1/2	19									
		ADF REG. LOOP1/2	20									
	CLEAR DATA	PM COUNTER	21	1	1	1					1	1
		SUPPLIES COUNTER	22				2	2	2	2		
	FUNCTION	PAPAER FEED TEST	23	2	2	2						
		TCR AUTO ADJUST	24						3			
		PRN TEST PATTERN	25				5	3	5			
		ADF FEED TEST	26									
		SCAN TEST	27									
Others		UTILITY MODE	28									
		SERVICE MODE	29									
		Parameter chip (U16)	30									
		FW update	31									
		Application of toner to drum	32				1			1		

	Change of developer	33						5			

*: Check when setting is changed.

2. List 2

Replacement Part/Service Job / Adjustment/Setting Items			No	Ozone filter	CIS module	Printer control board	TCR sensor	PH unit	Memory Clear	MB-503		PF-625
										Feed roller	Separation roll assy	Separation roll
SERVICE MODE	SERVICE'S CHOICE	ID ADJUST	1				3*					
		VG ADJUST	2									
		LEADING EDGE	3					12				
		TRAILING EDGE	4					13				
		VERTICAL EDGE	5					14				
		LOOP Ad. (TRAY1)	6									
		LOOP Ad. (TRAY2-5)	7									
		LOOP Ad. (BYPASS)	8							3*	3*	
		FUSER TEMP.	9									
	ADJUST	PRN MAIN	10					2				
		PRN SUB	11					3				
		CIS MAIN ZOOM	12		1			4				
		CIS SUB ZOOM	13		2			5				
		CIS MAIN REGIST	14		3			6				
		CIS SUB REGIST	15		4			7				
		ADF SUB ZOOM	16					8				
		ADF MAIN ZOOM	17					9				
		ADF SUB REGIST1/2	18					10				
		ADF MAIN REGIST1/2	19					11				
		ADF REG. LOOP1/2	20									
	CLEAR DATA	PM COUNTER	21	1						1	1	1
		SUPPLIES COUNETER	22					1				
	FUNCTION	PAPAER FEED TEST	23							2	2	
		TCR AUTO ADJUST	24				2					
		PRN TEST PATTERN	25									
		ADF FEED TEST	26									2
		SCAN TEST	27									
Others		UTILITY MODE	28						1			
		SERVICE MODE	29						2			
		Parameter chip (U8)	30			1						
		FW update	31			2						
		Application of toner to drum	32									

	Change of developer	33				1					

*: Check when setting is changed.

NOTE

- **Before executing a memory clear, be sure to take notes of the settings and adjustment data of UTILITY MODE, SERVICE MODE, SECURITY MODE, and adjust modes. After the memory clear has been executed, re-enter those data.**

4. SERVICE MODE

4.1 List of SERVICE MODE

SERVICE MODE		Ref. page
SERVICE'S CHOICE	MARKETING AREA *1	I.4.3.1 MARKETING AREA
	SHIPMENT	I.4.3.2 SHIPMENT
	ENABLE AUTO SHUT	I.4.3.3 ENABLE AUTO SHUT
	MAINTENANCE COUNT.	I.4.3.4 MAINTENANCE COUNT.
	IU LIFT STOP MODE	I.4.3.5 IU LIFE STOP MODE
	ID ADJUST	I.4.3.6 ID ADJUST
	VG ADJUST	I.4.3.7 VG ADJUST
	TRANSFER (PLAIN)	I.4.3.8 TRANSFER (PLAIN)
	TRANSFER (RECYCLE)	I.4.3.9 TRANSFER (RECYCLE)
	TRANSFER (CARD1)	I.4.3.10 TRANSFER (CARD1)
	TRANSFER (CARD2)	I.4.3.11 TRANSFER (CARD2)
	TRANSFER (OHP)	I.4.3.12 TRANSFER (OHP)
	TRANSFER (ENV.)	I.4.3.13 TRANSFER (ENV.)
	TRANSFER (PLAIN-D)	I.4.3.14 TRANSFER (PLAIN-D)
	TRANSFER (RECYCLE-D)	I.4.3.15 TRANSFER (RECY.-D)
	TRANSFER (CARD1-D)	I.4.3.16 TRANSFER (CARD1-D)
	TRANSFER (CARD2-D)	I.4.3.17 TRANSFER (CARD2-D)
	FUSER TEMP. (PLAIN)	I.4.3.18 FUSER TEMP. (PLAIN)
	FUSER TEMP. (CARD1)	I.4.3.19 FUSER TEMP. (CARD1)
	FUSER TEMP. (CARD2)	I.4.3.22 FUSER TEMP. (ENV.)
	FUSER TEMP. (OHP)	I.4.3.21 FUSER TEMP. (OHP)
	FUSER TEMP. (ENV.)	I.4.3.22 FUSER TEMP. (ENV.)
	LEADING EDGE	I.4.3.23 LEADING EDGE
	TRAILING EDGE	I.4.3.24 TRAILING EDGE
	VERTICAL EDGE	I.4.3.25 VERTICAL EDGE
	LOOP Ad. (TRAY1)	I.4.3.26 LOOP Ad. (TRAY1)
	LOOP Ad. (TRAY2-5)	I.4.3.26 LOOP Ad. (TRAY1)
	LOOP Ad. (DUPLEX)	I.4.3.29 LOOP Ad. (BYPASS)
	LOOP Ad. (BYPASS)	I.4.3.29 LOOP Ad. (BYPASS)
	FLS PAPER SIZE	I.4.3.30 FLS PAPER SIZE
	FLS/LEGAL CHANGE	I.4.3.31 FLS/LEGAL CHANGE
	TX SPEED *1	I.4.3.32 TX SPEED
	RX SPEED *1	I.4.3.33 RX SPEED
	TX LEVEL *1	I.4.3.34 TX LEVEL
	DTMF LEVEL *1	I.4.3.35 DTMF LEVEL
	CNG LEVEL *1	I.4.3.36 CNG LEVEL
	CED LEVEL *1	I.4.3.37 CED LEVEL
	ECM MODE *1	I.4.3.38 ECM MODE
	CODING SCHEME *1	I.4.3.39 CODING SCHEME
	VOIP *1	I.4.3.40 VOIP
	REPORT DESTINATION *1	I.4.3.41 REPORT DESTINATION
	TONER EMPTY REPORT *1	I.4.3.42 TONER EMPTY REPORT
	IU LIFE REPORT *1	I.4.3.43 IU LIFE REPORT
	MAINTENANCE REPORT *1	I.4.3.44 MAINTENANCE REPORT
	PROTOCOL REPORT *1	I.4.3.45 PROTOCOL REPORT
	CIS APS SIZE *1	I.4.3.46 CIS APS SIZE
	GDI TIMEOUT	I.4.3.47 GDI TIMEOUT
	ERASER INSTALL	I.4.3.48 ERASER INSTALL
	SUCTION FAN	I.4.3.49 SUCTION FAN
	LANGUAGE GROUP	I.4.3.50 LANGUAGE GROUP
	HV B(AC) CLK	I.4.3.51 HV B(AC) CLK
	PH STANBY MODE	I.4.3.52 PH STANBY MODE
ADJUST	PRN MAIN (TRAY1)	I.4.4.1 PRN MAIN (TRAY1)
	PRN MAIN (BYPASS)	I.4.4.2 PRN MAIN (BYPASS)
	PRN MAIN (TRAY2)	I.4.4.3 PRN MAIN (TRAY2)

SERVICE MODE		Ref. page
	PRN MAIN (TRAY3)	I.4.4.4 PRN MAIN (TRAY3)
	PRN MAIN (TRAY4)	I.4.4.5 PRN MAIN (TRAY4)
	PRN MAIN (TRAY5)	I.4.4.6 PRN MAIN (TRAY5)
	PRN MAIN (DUPLEX)	I.4.4.7 PRN MAIN (DUPLEX)
	PRN SUB (TRAY1-P)	I.4.4.8 PRN SUB (TRAY1-P)
	PRN SUB (TRAY1-R)	I.4.4.9 PRN SUB (TRAY1-R)
	PRN SUB (TRAY1-C1)	I.4.4.10 PRN SUB (TRAY1-C1)
	PRN SUB (TRAY1-C2)	I.4.4.11 PRN SUB (TRAY1-C2)
	PRN SUB (TRAY1-O)	I.4.4.12 PRN SUB (TRAY1-O)
	PRN SUB (TRAY1-E)	I.4.4.13 PRN SUB (TRAY1-E)
	PRN SUB (BYPASS-P)	I.4.4.14 PRN SUB (BYPASS-P)
	PRN SUB (BYPASS-R)	I.4.4.15 PRN SUB (BYPASS-R)
	PRN SUB (BYPASS-C1)	I.4.4.16 PRN SUB (BYPASS-C1)
	PRN SUB (BYPASS-C2)	I.4.4.17 PRN SUB (BYPASS-C2)
	PRN SUB (BYPASS-O)	I.4.4.18 PRN SUB (BYPASS-O)
	PRN SUB (BYPASS-E)	I.4.4.19 PRN SUB (BYPASS-E)
	PRN SUB (TRAY2)	I.4.4.20 PRN SUB (TRAY2)
	PRN SUB (TRAY3)	I.4.4.21 PRN SUB (TRAY3)
	PRN SUB (TRAY4)	I.4.4.22 PRN SUB (TRAY4)
	PRN SUB (TRAY5)	I.4.4.23 PRN SUB (TRAY5)
	PRN SUB (DUPLEX)	I.4.4.24 PRN SUB (DUPLEX)
	CIS MAIN ZOOM	I.4.4.25 CIS MAIN ZOOM
	CIS SUB ZOOM	I.4.4.26 CIS SUB ZOOM
	CIS MAIN REGIST	I.4.4.27 CIS MAIN REGIST
	CIS SUB REGIST	I.4.4.28 CIS SUB REGIST
	ADF SUB ZOOM	I.4.4.29 ADF SUB ZOOM
	ADF MAIN ZOOM	I.4.4.30 ADF MAIN ZOOM
	ADF SUB REGIST1	I.4.4.31 ADF SUB REGIST1
	ADF SUB REGIST2	I.4.4.32 ADF SUB REGIST2
	ADF MAIN REGIST1	I.4.4.33 ADF MAIN REGIST1
	ADF MAIN REGIST2	I.4.4.34 ADF MAIN REGIST2
	ADF REG. LOOP1	I.4.4.35 ADF REG. LOOP1
	ADF REG. LOOP2	I.4.4.36 ADF REG. LOOP2
	TCR GAIN	I.4.4.37 TCR GAIN
	MODEL SETTING	I.4.4.38 MODEL SETTING
COUNTER	TOTAL COUNTER	I.4.5.1 TOTAL COUNTER
	SIZE COUNTER	I.4.5.2 SIZE COUNTER
	PM COUNTER	I.4.5.3 PM COUNTER
	MAINTENANCE COUNT.	I.4.5.4 MAINTENANCE COUNT.
	SUPPLIES COUNTER	I.4.5.5 SUPPLIES COUNTER
	APPLICATION COUNT.	I.4.5.6 APPLICATIN COUNT.
	PAPER SIZE COUNTER	I.4.5.8 PAPER SIZE COUNTER
	MISFEED COUNTER	I.4.5.9 MISFEED COUNTER
	TROUBLE COUNTER	I.4.5.10 TROUBLE COUNTER
DISPLAY	TONER DENSITY	I.4.6.1 TONER DENSITY
	FUSER TEMPERATURE	I.4.6.2 FUSER TEMPERATURE
	TRANSCRIPT CURRENT	I.4.6.3 TRANSCRIPT CURRENT
	TCR GAIN	I.4.6.4 TCR GAIN
	PROCESS CONTROL	I.4.6.5 PROCESS CONTROL
	ENVIRONMENTAL	I.4.6.6 ENVIRONMENTAL
	MAIN F/W VER.	I.4.6.7 MAIN F/W VER.
	ENGINE F/W VER.	I.4.6.8 ENGINE F/W VER.
	PLC F/W VER.	I.4.6.9 PCL F/W VER.
	NIC F/W VER.	I.4.6.10 NIC F/W VER.
	MAIN RAM SIZE	I.4.6.11 MAIN RAM SIZE
	SERIAL NO.	I.4.6.12 SERIAL NO.
	CUSTOMER ID	I.4.6.13 CUSTOMER ID
FUNCTION	PAPER FEED TEST	I.4.7.1 PAPER FEED TEST

SERVICE MODE		Ref. page
	PROCESS CHECK	I.4.7.2 PROCESS CHECK
	TCR AUTO ADJUST	I.4.7.3 TCR AUTO ADJUST
	PRN TEST PATTERN	I.4.7.4 PRN TEST PATTERN
	ADF FEED TEST	I.4.7.5 ADF FEED TEST
	COPY ADF GLASS	I.4.7.6 COPY ADF GLASS
	UPLOAD F/W *1	I.4.7.7 UPLOAD F/W
	FAX RES. COPY TEST *1	I.4.7.8 FAX RES. COPY TEST
	SCAN TEST	I.4.7.9 SCAN TEST
	TONER SUPPLY	I.4.7.10 TONER SUPPLY
SOFT SWITCH *1		I.4.8 SOFT SWITCH
REPORT *1	SERVICE DATA LIST *1	I.4.9.1 SERVICE DATA LIST
	ERROR CODE LIST *1	I.4.9.2 ERROR CODE LIST
	T.30 PROTOCOL LIST *1	I.4.9.3 T.30 PROTOCOL LIST
	SETTING DATA LIST *1	I.4.9.4 SETTING DATA LIST
FIXED ZOOM CHANGE		I.4.11 FIXED ZOOM CHANGE
FACTORY TEST	SIGNAL TEST *1	I.4.12.1 SIGNAL TEST
	RELAY TEST *1	I.4.12.2 RELAY TEST
	DIAL TEST *1	I.4.12.3 DIAL TEST
	VOLUME TEST *1	I.4.12.4 VOLUME TEST
	PANEL TEST	I.4.12.5 PANEL TEST
	RAM TEST	I.4.12.6 RAM TEST
CLEAR DATA	DRAM CLEAR *1	I.4.13.1 DRAM CLEAR
	FLASH ROM CLEAR	I.4.13.2 FLASH ROM CLEAR
	MEMORY CLEAR	I.4.13.3 MEMORY CLEAR
	TOTAL CLEAR	I.4.13.4 TORTAL CLEAR
	PM COUNTER	I.4.13.5 PM COUNTER
	MAINTENANCE COUNT.	I.4.13.6 MAINTENANCE COUNT.
	SUPPLIES COUNTER	I.4.13.7 SUPPLIES COUNTER
	APPLICATION COUNT.	I.4.13.8 APPLICATION COUNT.
	SCAN COUNTER	I.4.13.9 SCAN COUNTER
	PAPER SIZE COUNTER	I.4.13.10 PAPER SIZE COUNTER
	MISFEED COUNTER	I.4.13.11 MISFEED COUNTER
	TROUBLE COUNTER	I.4.13.12 TROUBLE COUNTER

- *1: It will be displayed only when the optional FAX kit FK-510 is mounted.

4.2 Starting/Exiting

4.2.1 Starting procedure

1. Press the Utility key.
2. Press the following keys in this order.
   [STOP], [0], [0], [STOP], [0], [1]
3. The SERVICE MODE menu screen will appear.

4.2.2 Exiting procedure

- Press the Reset key as many times as it is required to display the initial screen.

4.2.3 Changing the setting value in SERVICE MODE functions

1. Select the desired item using [▲/▼/◄/►] key.
2. Select the setting value using [▲/▼/◄/►] key.
3. Validate the selection by pressing the OK key.
4. To go back to previous screen, press the Back key.

4.3 SERVICE'S CHOICE

4.3.1 MARKETING AREA

- It will be displayed only when the optional FAX kit FK-510 is mounted.

(1) Use

- To set the marketing area.
- If you change the marketing area, the soft switch will change automatically.

(2) Default setting

- STANDARD

(3) Setting item

- “STANDARD”, U.S.A, TAIWAN, SPAIN, ITALIAN, BELGIUM, NORWAY, SWEDEN, NETHERLANDS, FINLAND, DENMARK, SWITZERLAND, IRELAND, PORTUGAL, SOUTH AFRICA, GREECE, ISRAEL, ARGENTINA, GERMANY, FRANCE, UNITED KINGDOM, AUSTRALIA, CHINA, NEW ZEALAND, KOREA, CZECH, SLOVAKIA, HUNGARY, UKRAINE, BALTIC, WEST EUROPE, SLOVENIA, POLAND, ROMANIA, RUSSIA, SINGAPORE, MALAYSIA, HONG KONG, PHILIPPINE, THAILAND, INDONESIA, OMAN, UAE, QATAR, BAHRAIN, KUWAIT, SAUDIARABIA, BRAZIL

4.3.2 SHIPMENT

(1) Use

- To select the display of the fixed zoom ratios and paper sizes according to the applicable marketing area.
- If this setting is changed, the following items are also changed.
  - Default paper size (Inch/Metric)
  - Fixed zoom ratio
  - FLS paper size
  - UTILITY MODE settings (Language, Tray Priority, Custom Size memory)
  - Default zoom ration for 2in1/ 4in1 copy.
  - Initial value of Custom size

(2) Default setting

- METRIC.

(3) Setting item

- The default setting is METRIC.
  "METRIC"/INCH/TAIWAN/CHINA/L.AMERICA (METRIC)/L.AMERICA (INCH)

4.3.3 ENABLE AUTO SHUT

(1) Use

- To select whether or not to display the following items in the menu of utility mode.
- Utility Mode -> ADMIN. MANAGEMENT -> DISPLAY AUTO SHUT
- Utility Mode -> MACHINE SETTING -> AUTO SHUT TIME

(2) Default setting

- DISABLE

(3) Setting item

- “DISABLE”
- ENABLE

4.3.4 MAINTENANCE COUNT.

(1) Use

- To enter an appropriate counter value (0 to 999999) as the tentative maintenance time.
- Specify the setting on maintenance counter to "1" or "2": If the maintenance life is reached, the maintenance call (M1) or service call [Call Service (M1)] will appear.
  "0":Not counted
  1:Counted (The maintenance call display is given when the counter reaches 0.)
  2:Counted (The service call display is given and the initiation of any new copy cycle is inhibited when the counter reaches 0.)

NOTE

- **The counter value is decremented until it reaches -999999 even after it has counted 0.**

(2) Procedure

- The default setting is 0.
- When "1" or "2" is selected, a screen will then appear to allow the counter value to be entered.

4.3.5 IU LIFE STOP MODE

(1) Use

- When the supplies life count. reaches the life value, the IU life will be detected.
- The mode when the IU life is reached, is specified by this setting.
  CONTINUOUS:Enables copying. Maintenance call (M2) display is given.
  STOP:Disables copying. Service call [Call Service (M2)] display is given and the initiation of any new copy cycle is inhibited.

NOTE

- **The counter value continues to be subtracted after the value becomes 0, but image quality is not guaranteed.**

(2) Default setting

- STOP

(3) Setting item

- "STOP"
- CONTINUOUS

4.3.6 ID ADJUST

(1) Use

- To set the image density by varying Vg and Vb on the engine side.
- Used when the image density is high or low.

(2) Default setting

- 0

(3) Setting range

- -3 to +3

4.3.7 VG ADJUST

(1) Use

- To adjust image density by varying Vg with changing sensitivities as the drum is used for an extended period of time.
- Used when image problems (fog, void) occur.
- Used when the drum unit has been replaced.
  Increase the setting value to eliminate void.
  Decrease the setting value to eliminate fog.

(2) Default setting

- 0

(3) Setting range

- -3 to +3

4.3.8 TRANSFER (PLAIN)

(1) Use

- Adjust the image transfer output value for each paper type.
- The output value determined by the transfer output control can be adjusted within the range of ± 50 %
- To use when the transfer failure occurs.

(2) Default setting

- 0

(3) Setting range

- -5 to +5 (1step: 10 %)

4.3.9 TRANSFER (RECYCLE)

(1) Use

- Adjust the image transfer output value for each paper type.
- The output value determined by the transfer output control can be adjusted within the range of ± 50 %
- To use when the transfer failure occurs.

(2) Default setting

- 0

(3) Setting range

- -5 to +5 (1step: 10 %)

4.3.10 TRANSFER (CARD1)

(1) Use

- Adjust the image transfer output value for each paper type.
- The output value determined by the transfer output control can be adjusted within the range of ± 50 %
- To use when the transfer failure occurs.

(2) Default setting

- 0

(3) Setting range

- -5 to +5 (1step: 10 %)

4.3.11 TRANSFER (CARD2)

(1) Use

- Adjust the image transfer output value for each paper type.
- The output value determined by the transfer output control can be adjusted within the range of ± 50 %
- To use when the transfer failure occurs.

(2) Default setting

- 0

(3) Setting range

- -5 to +5 (1step: 10 %)

4.3.12 TRANSFER (OHP)

(1) Use

- Adjust the image transfer output value for each paper type.
- The output value determined by the transfer output control can be adjusted within the range of ± 50 %
- To use when the transfer failure occurs.

(2) Default setting

- 0

(3) Setting range

- -5 to +5 (1step: 10 %)

4.3.13 TRANSFER (ENV.)

(1) Use

- Adjust the image transfer output value for each paper type.
- The output value determined by the transfer output control can be adjusted within the range of ± 50 %
- To use when the transfer failure occurs.

(2) Default setting

- 0

(3) Setting range

- -5 to +5 (1step: 10 %)

4.3.14 TRANSFER (PLAIN-D)

(1) Use

- Adjust the image transfer output value for each paper type.
- The output value determined by the transfer output control can be adjusted within the range of ± 50 %
- To use when the transfer failure occurs.

(2) Default setting

- 0

(3) Setting range

- -5 to +5 (1step: 10 %)

4.3.15 TRANSFER (RECY.-D)

(1) Use

- Adjust the image transfer output value for each paper type.
- The output value determined by the transfer output control can be adjusted within the range of ± 50 %
- To use when the transfer failure occurs.

(2) Default setting

- 0

(3) Setting range

- -5 to +5 (1step: 10 %)

4.3.16 TRANSFER (CARD1-D)

(1) Use

- Adjust the image transfer output value for each paper type.
- The output value determined by the transfer output control can be adjusted within the range of ± 50 %
- To use when the transfer failure occurs.

(2) Default setting

- 0

(3) Setting range

- -5 to +5 (1step: 10 %)

4.3.17 TRANSFER (CARD2-D)

(1) Use

- Adjust the image transfer output value for each paper type.
- The output value determined by the transfer output control can be adjusted within the range of ± 50 %
- To use when the transfer failure occurs.

(2) Default setting

- 0

(3) Setting range

- -5 to +5 (1step: 10 %)

4.3.18 FUSER TEMP. (PLAIN)

(1) Use

- To set the temperature of the fusing roller for each type of paper, thereby making up for fusing performance that changes with the operating environment or type of paper.
- Used when fusing failure occurs.
- Used when the type of paper is changed.

(2) Default setting

- 0

(3) Setting range

- -1 to 4

NOTE

- **If 2, 3, or 4 is selected, the productivity decreases due to the paper feed interval increased under the PPM control.**

<Temperature table for adjusting fusing temperature for plain/recycle paper>

Setting value	Difference from the target temperature determined by the fusing temperature control
4	+20 °C
3	+15 °C
2	+10 °C
1	+5 °C
0 (default value)	0 °C
-1	-10 °C

4.3.19 FUSER TEMP. (CARD1)

(1) Use

- To set the temperature of the fusing roller for each type of paper, thereby making up for fusing performance that changes with the operating environment or type of paper.
- Used when fusing failure occurs.
- Used when the type of paper is changed.

(2) Default setting

- 0

(3) Setting range

- -1 to 2

<Temperature table for adjusting fusing temperature for card 1>

Setting value	Difference from the target temperature determined by the fusing temperature control
2	+10 °C
1	+5 °C
0 (default value)	0 °C
-1	-10 °C

4.3.20 FUSER TEMP. (CARD2)

(1) Use

- To set the temperature of the fusing roller for each type of paper, thereby making up for fusing performance that changes with the operating environment or type of paper.
- Used when fusing failure occurs.
- Used when the type of paper is changed.

(2) Default setting

- 0

(3) Setting range

- -1 to 2

<Temperature table for adjusting fusing temperature for card 2>

Setting value	Difference from the target temperature determined by the fusing temperature control
2	+10 °C
1	+5 °C
0 (default value)	0 °C
-1	-10 °C

4.3.21 FUSER TEMP. (OHP)

(1) Use

- To set the temperature of the fusing roller for each type of paper, thereby making up for fusing performance that changes with the operating environment or type of paper.
- Used when fusing failure occurs.
- Used when the type of paper is changed.

(2) Default setting

- 0

(3) Setting range

- -1 to 1

<Temperature table for adjusting fusing temperature for OHP paper

Setting value	Difference from the target temperature determined by the fusing temperature control
1	+5 °C
0 (default value)	0 °C
-1	-10 °C

4.3.22 FUSER TEMP. (ENV.)

(1) Use

- To set the temperature of the fusing roller for each type of paper, thereby making up for fusing performance that changes with the operating environment or type of paper.
- Used when fusing failure occurs.
- Used when the type of paper is changed.

(2) Default setting

- 0

(3) Setting range

- -1 to 4

<Temperature table for adjusting fusing temperature for >

Setting value	Difference from the target temperature determined by the fusing temperature control
4	+20 °C
3	+15 °C
2	+10 °C
1	+5 °C
0 (default value)	0 °C
-1	-10 °C

4.3.23 LEADING EDGE

(1) Use

- To adjust the erase width on the leading edge of the image by varying the laser emission timing.

- Used when the PH unit has been replaced.

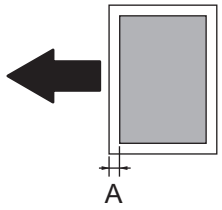
(2) Default setting

- 4 mm

(3) Setting item

- 0 mm/1 mm/2 mm/3 mm/"4 mm"/5 mm

(4) Procedure



- Set the erase width on the leading edge of the paper (width A).

1. Call SERVICE'S CHOICE of SERVICE MODE to the screen.
2. Select [LEADING EDGE] and press the OK key.
3. Using [▲/▼] key, select the desired setting value.
   To make the erase width smaller, decrease the setting value.
   To make the erase width greater, increase the setting value.
4. Press the OK key to validate the setting value selected in step 3.

4.3.24 TRAILING EDGE

(1) Use

- To adjust the erase width on the trailing edge of the image by varying the laser emission timing.
- Used when the PH unit has been replaced.

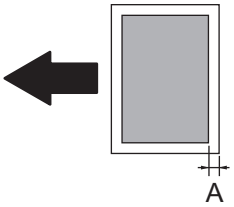
(2) Default setting

- 4 mm

(3) Setting item

- 0 mm/1 mm/2 mm/3 mm/"4 mm"/5 mm

(4) Procedure



- Set the erase width on the trailing edge of the paper (width A).

1. Call SERVICE'S CHOICE of SERVICE MODE to the screen.
2. Select [TRAILING EDGE] and press the OK key.
3. Using [▲/▼] key, select the desired setting value.
   To make the erase width smaller, decrease the setting value.
   To make the erase width greater, increase the setting value.
4. Press the OK key to validate the setting value selected in step 3.

4.3.25 VERTICAL EDGE

(1) Use

- To adjust the erase width on both edges of the image (in CD direction) by varying the laser emission timing.
- Used when the PH unit has been replaced.

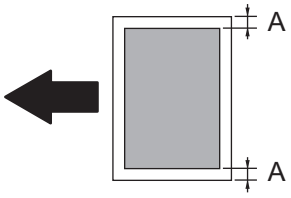
(2) Default setting

- 4 mm

(3) Setting item

- 0 mm/1 mm/2 mm/3 mm/"4 mm"/5 mm

(4) Procedure



- Set the erase width on both edges of the paper (width A).

1. Call SERVICE'S CHOICE of SERVICE MODE to the screen.
2. Select [VERTICAL EDGE] and press the OK key.
3. Using [▲/▼] key, select the desired setting value.
   To make the erase width smaller, decrease the setting value.
   To make the erase width greater, increase the setting value.
4. Press the OK key to validate the setting value selected in step 3.

4.3.26 LOOP Ad. (TRAY1)

(1) Use

- To adjust the length of the loop formed in the paper feed from the tray1 before the synchronizing roller.
- Used when a skew feed, fold, or misfeed of paper occurs.
- Used when variations in the amount of void on the leading edge occurs.

(2) Default setting

- 0.0mm

(3) Setting item

- -4.2mm / -3.6mm / -3.0mm / -2.4mm / -1.8mm / -1.2mm / -0.6mm / “0.0mm” / 0.6mm / 1.2mm / 1.8mm / 2.4mm / 3.0mm / 3.6mm / 4.2mm

(4) Procedure

1. Call SERVICE'S CHOICE of SERVICE MODE to the screen.
2. Select [LOOP Ad. (TRAY1)] and press the OK key.
3. Using [▲/▼] key, select the desired setting value.
4. Press the OK key to validate the setting value selected in step 3.
- Try a different setting value until there are no variations in the amount of void on the leading edge, and paper skew, fold, or misfeed.

4.3.27 LOOP Ad. (TRAY2-5)

(1) Use

- To adjust the length of the loop formed in the paper feed from the tray2-5 before the synchronizing roller.
- Used when a skew feed, fold, or misfeed of paper occurs.
- Used when variations in the amount of void on the leading edge occurs.

(2) Default setting

- 0.0mm

(3) Setting item

- -4.2mm / -3.6mm / -3.0mm / -2.4mm / -1.8mm / -1.2mm / -0.6mm / “0.0mm” / 0.6mm / 1.2mm / 1.8mm / 2.4mm / 3.0mm / 3.6mm / 4.2mm

(4) Procedure

1. Call SERVICE'S CHOICE of SERVICE MODE to the screen.
2. Select the tray for which the loop length is adjusted from [LOOP Ad. (TRAY2)], [LOOP Ad. (TRAY3)], [LOOP Ad. (TRAY4)], or [LOOP Ad. (TRAY5)], and press the OK key.
3. Using [▲/▼] key, select the desired setting value.
4. Press the OK key to validate the setting value selected in step 3.
- Try a different setting value until there are no variations in the amount of void on the leading edge, and paper skew, fold, or misfeed.

4.3.28 LOOP Ad. (DUPLEX)

(1) Use

- To adjust the length of the loop formed in the paper feed from the manual bypass tray before the synchronizing roller.
- Used when a skew feed, fold, or misfeed of paper occurs.
- Used when variations in the amount of void on the leading edge occurs.

(2) Default setting

- 0.0mm

(3) Setting item

- -4.2mm / -3.6mm / -3.0mm / -2.4mm / -1.8mm / -1.2mm / -0.6mm / “0.0mm” / 0.6mm / 1.2mm / 1.8mm / 2.4mm / 3.0mm / 3.6mm / 4.2mm

(4) Procedure

1. Call SERVICE'S CHOICE of SERVICE MODE to the screen.
2. Select [LOOP Ad. (DUPLEX)] and press the OK key.
3. Using [▲/▼] key, select the desired setting value.

- Try a different setting value until there are no variations in the amount of void on the leading edge, and paper skew, fold, or misfeed.

4.3.29 LOOP Ad. (BYPASS)

(1) Use

- To adjust the length of the loop formed in the paper feed from the manual bypass tray before the synchronizing roller.
- Used when a skew feed, fold, or misfeed of paper occurs.
- Used when variations in the amount of void on the leading edge occurs.

(2) Default setting

- 0.0mm

(3) Setting item

- -4.2mm / -3.6mm / -3.0mm / -2.4mm / -1.8mm / -1.2mm / -0.6mm / “0.0mm” / 0.6mm / 1.2mm / 1.8mm / 2.4mm / 3.0mm / 3.6mm / 4.2mm

(4) Procedure

1. Call SERVICE'S CHOICE of SERVICE MODE to the screen.
2. Select [LOOP Ad. (BYPASS)] and press the OK key.
3. Using [▲/▼] key, select the desired setting value.

- Try a different setting value until there are no variations in the amount of void on the leading edge, and paper skew, fold, or misfeed.

4.3.30 FLS PAPER SIZE

(1) Use

- To select the paper size for FLS.
- Used when the FLS paper size is changed.
- Used at setup.

(2) Default setting

- 330×210

(3) Setting item

- 330×203 / “330×210” / 330×216 / 330×220 / 337×206

4.3.31 FLS/LEGAL CHANGE

(1) Use

- When the machine detects LEGAL or FLS size paper, select whether or not to recognize LEGAL as FLS and FLS as LEGAL size.

(2) Default setting

- NORMAL

(3) Setting item

- “NORMAL”
- FLS <-->LEGAL

4.3.32 TX SPEED

- It will be displayed only when the optional FAX kit FK-510 is mounted.

(1) Use

- To set the transmission starting speed.

(2) Default setting

- V.34 33600 bps

(3) Setting item

- “V.34 33600 bps”, V.34 31200 bps, V.34 28800 bps, V.34 26400 bps, V.34 24000 bps, V.34 21600 bps, V.34 19200 bps, V.34 16800 bps, V.17 14400 bps, V.17 12000 bps, V.17 9600 bps, V.17 7200 bps, V.29 9600 bps, V.29 7200 bps, V.27 4800 bps, V.27 2400 bps

4.3.33 RX SPEED

- It will be displayed only when the optional FAX kit FK-510 is mounted.

(1) Use

- To set the reception starting speed.

(2) Default setting

- V.34 33600 bps

(3) Setting item

- “V.34 33600 bps”, V.34 31200 bps, V.34 28800 bps, V.34 26400 bps, V.34 24000 bps, V.34 21600 bps, V.34 19200 bps, V.34 16800 bps, V.17 14400 bps, V.17 12000 bps, V.17 9600 bps, V.17 7200 bps, V.29 9600 bps, V.29 7200 bps, V.27 4800 bps, V.27 2400 bps

4.3.34 TX LEVEL

- It will be displayed only when the optional FAX kit FK-510 is mounted.

(1) Use

- To o set the PSK/FSK signal output level.

(2) Default setting

- -9 dbm

(3) Setting item

- -2 dbm, -3 dbm, -4 dbm, -5 dbm, -6 dbm, -7 dbm, -8 dbm, “-9 dbm”, -10 dbm, -11 dbm, -12 dbm, -13 dbm, -14 dbm, -15 dbm, -16 dbm, -17 dbm

4.3.35 DTMF LEVEL

- It will be displayed only when the optional FAX kit FK-510 is mounted.

(1) Use

- To set the dual tone output level.

(2) Default setting

- -6 dbm

(3) Setting item

- -2 dbm, -3 dbm, -4 dbm, -5 dbm, “-6 dbm”, -7 dbm, -8 dbm, -9 dbm, -10 dbm, -11 dbm, -12 dbm, -13 dbm, -14 dbm, -15 dbm, -16 dbm, -17 dbm

4.3.36 CNG LEVEL

- It will be displayed only when the optional FAX kit FK-510 is mounted.

(1) Use

- To set the calling tone output level.

(2) Default setting

- -10 dbm

(3) Setting item

- -2 dbm, -3 dbm, -4 dbm, -5 dbm, -6 dbm, -7 dbm, -8 dbm, -9 dbm, “-10 dbm”, -11 dbm, -12 dbm, -13 dbm, -14 dbm, -15 dbm, -16 dbm, -17 dbm

4.3.37 CED LEVEL

- It will be displayed only when the optional FAX kit FK-510 is mounted.

(1) Use

- To set the answer tone output level.

(2) Default setting

- -10 dbm

(3) Setting item

- -2 dbm, -3 dbm, -4 dbm, -5 dbm, -6 dbm, -7 dbm, -8 dbm, -9 dbm, “-10 dbm”, -11 dbm, -12 dbm, -13 dbm, -14 dbm, -15 dbm, -16 dbm, -17 dbm

4.3.38 ECM MODE

- It will be displayed only when the optional FAX kit FK-510 is mounted.

(1) Use

- To set the error correction mode.

ON	When an error occurs during communication, re-send the frame where the error occurs.

OFF	Any error is ignored during communication.

(2) Default setting

- ON

(3) Setting item

- "ON"
- OFF

4.3.39 CODING SCHEME

- It will be displayed only when the optional FAX kit FK-510 is mounted.

(1) Use

- To set the compression method in TX/RX mode.

JBIG	Can communicate with all coding
MMR	Coding can communicate with MH/MR/MMR (encoding ban JBIG)
MR	Coding can communicate with MH/MR (encoding ban MMR/JBIG)
MH	Coding only MH (encoding ban MR/MMR/JBIG)

(2) Default setting

- JBIG

(3) Setting item

- "JBIG"
- MMR
- MR
- MH

4.3.40 VOIP

- It will be displayed only when the optional FAX kit FK-510 is mounted.

(1) Use

- To set the time of T4 timer.
- When connect VOIP and the main body, set [5 sec] or [10 sec].

(2) Default setting

- 4.5 sec

(3) Setting item

- 3 sec
- "4.5 sec"
- 5 sec
- 10 sec

4.3.41 REPORT DESTINATION

- It will be displayed only when the optional FAX kit FK-510 is mounted.

(1) Use

- To enter the fax number for which the report is to be produced.
- To specify a report destination when any of the following error happens.
  - Toner-empty condition
  - The IU life counter exceeds the specifications.
  - The maintenance counter reaches a preset value.

NOTE

- **The report will be produced at a timing of 20 min., 24 hours, 48 hours, and 72 hours after any of the above conditions has occurred until the condition disappears.**
- **If two or more conditions occur, only one report will be produced.**
- **This function runs synchronized with settings of the TONER EMPTY REPORT, the IU LIFE REPORT and the MAINTENANCE REPORT.**

(2) Procedure

1. Call the SERVICE MODE to the display.
2. Select [SERVICE'S CHOICE], and press the OK key.
3. Select [REPORT DESTINATION], and press the OK key.
4. Enter the fax number (Up to 20-digits) of report is to be produced, and press the OK key.
   Available characters: 0 to 9, *, #, SPACE, -

4.3.42 TONER EMPTY REPORT

- It will be displayed only when the optional FAX kit FK-510 is mounted.

(1) Use

- To set whether or not to generate a report when toner empty status occurs in the engine.

ON	Generate a report to report destination.
OFF	Not to generate report.

NOTE

- **The report will generate after 20 minutes, 24 hours, 48 hours, or 72 hours after the event has occurred or until the condition is gone.**

(2) Default setting

- OFF

(3) Setting item

- ON
- “OFF”

4.3.43 IU LIFE REPORT

- It will be displayed only when the optional FAX kit FK-510 is mounted.

(1) Use

- To set whether or not to generate a report when IU life counter become out of life.

(2) Default setting

- OFF

(3) Setting item

- ON
- “OFF”

4.3.44 MAINTENANCE REPORT

- It will be displayed only when the optional FAX kit FK-510 is mounted.

(1) Use

- To set whether or not to generate report when maintenance counter become zero.

(2) Default setting

- OFF

(3) Setting item

- ON
- “OFF”

4.3.45 PROTOCOL REPORT

- It will be displayed only when the optional FAX kit FK-510 is mounted.

(1) Use

- To set the printing of the communication report.

OFF	Disable T.30 communication report.
ON	Print T.30 communication report.
ON (ERROR)	Print T.30 communication report when an error occurs.

(2) Default setting

- OFF

(3) Setting item

- “OFF”
- ON
- ON (ERROR)

4.3.46 CIS APS SIZE

- It will be displayed only when the optional FAX kit FK-510 is mounted.

(1) Use

- To set the reference table which detects the original size in flatbed scan.
- For Metric, China, Latin America(Metric) areas

PATTERN1

Original Size Sensor/1	0 to 153.0	Up to 187.0	Up to 200.0	Up to 215.0	Up to 225.0	Up to 262.0	Up to 275.0	275.1 or over
OFF	A5S	B5S	16K S	A4S	(B5)	B5	16K	A4
ON	(FLS)	(FLS)	(FLS)	(FLS)	FLS	B4	8K	A3

PATTERN2

Original Size Sensor		0 to143.9	Up to 153.0	Up to 187.0	Up to 200.0	Up to 213.0	Up to 220.9	Up to 225.0	Up to 262.0	Up to 274.7	Up to 284.4	284.5 or over
1	2 *											
OFF	OFF	HL S	A5S	B5S	16KS	A4	LetterS	(B5)	B5	16K	Letter	A4
ON	OFF	(FLS)	(FLS)	(FLS)	(FLS)	FLS	FLS	FLS	(B4)	(8K)	(11x17)	(A3)
OFF	ON	(Legal)	(Legal)	(Legal)	(Legal)	(Legal)	Legal	(B4)	(B4)	(8K)	(11x17)	(A3)
ON	ON	(Legal)	(Legal)	(Legal)	(Legal)	(Legal)	Legal	(B4)	B4	8K	11x17	A3

- *: Option

- For Inch, Latin America(Inch) areas

PATTERN1

Original Size Sensor/1	0 to 144.7	Up to 220.9	221.0 or over
OFF	Invoice S	Letter S	Letter
ON	(Legal)	Legal	11x17

PATTERN2

Original Size Sensor		0 to 143.9	Up to 153.0	Up to 187.0	Up to 213.0	Up to 220.9	Up to 225.0	Up to 262.0	Up to 284.4	284.5 or over
1	2 *									
OFF	OFF	Invoice S	A5S	B5S	A4S	Letter S	(B5)	B5	Letter	A4
ON	OFF	(FLS)	(FLS)	(FLS)	FLS	FLS	FLS	(B4)	(11x17)	(A3)
OFF	ON	(Legal)	(Legal)	(Legal)	(Legal)	Legal	(B4)	(B4)	(11x17)	(A3)
ON	ON	(Legal)	(Legal)	(Legal)	(Legal)	Legal	(B4)	B4	11x17	A3

- *: Option

(2) Default setting

- PATTERN1

(3) Setting item

- “PATTERN1”
- PATTERN2

4.3.47 GDI TIMEOUT

(1) Use

- To specify the time for timeout when data from PC is interrupted during GDI printing.

(2) Default setting

- 60 sec

(3) Setting item

- 5 sec/10 sec/20 sec/30 sec/40 sec/50 sec/"60 sec"

4.3.48 ERASER INSTALL

- Not used.

NOTE

- **Never change this setting.**
- **The default setting is 0.**

4.3.49 SUCTION FAN

(1) Use

- To specify the length of time from when a print cycle is completed and until when the suction fan motor stops rotating.
- Used when image failure (while line etc.) occurs due to residual ozone that remains around the drum.

(2) Procedure

- The default setting is 2 sec.
  "2 sec"/20 sec/ 60 sec/600 sec

NOTE
- **Even when 20 sec. or more is selected in this setting, a higher priority is given to the shift to sleep mode.**

4.3.50 LANGUAGE GROUP

(1) Use
- To select the language group applied to the firmware.
- To rewrite the firmware so that it can be used for a different marketing area.

(2) Procedure
- The default setting varies depending on the marketing area. For detail of language group, refer to "I.2.3.9.LANGUAGE".
  TYPE 1/TYPE 2/TYPE 5/TYPE 6/TYPE7
- The new setting takes effect after the power switch is turned OFF/ON.

4.3.51 HV B(AC) CLK

(1) Use
- To adjust the developing bias output clock to control high frequency sounds.

(2) Default setting
- 0 (3.7KHz)

(3) Setting item
- -7 to 3 (3KHz to 4KHz: 1 step 0.1KHz)

4.3.52 PH STANBY MODE

(1) Use
- To curb the rotation sounds generated from the PH motor in standby state by changing the number of rotations of the motor. (NORMAL: 35000rpm, SLOW: 27000rpm)

(2) Default setting
- NORMAL

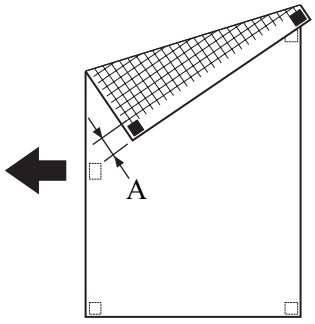
(3) Setting item
- "NORMAL"
- SLOW

4.4 ADJUST

4.4.1 PRN MAIN (TRAY1)

(1) Use
- To adjust by varying the starting position of image writing in the main scanning direction.
- Used when the image on the copy deviates in the main scanning direction.
- Used when the PH unit has been replaced.

(2) Specification
- Adjust so that width A on the test copy produced falls within the specified range.
- Specifications: 20 ± 2.0 mm(A4), 11.2 mm± 2.0 mm (Letter)



(3) Default setting
- 100 (0.0 mm)

(4) Setting range
- 80 (-4.0 mm) to 120 (+4.0 mm) (1 step: 0.2 mm)

(5) Procedure
1. Load the tray1 with A4 or Letter plain paper.
2. Enter function of the SERVICE MODE.

3. Select [FUNCTION] -> [PRN TEST PATTERN], and press the OK key.
4. Select [TRAY 1] -> [PATTERN 1], and press the OK key.
   This will produce a test pattern.
5. Check to see if width A on the test copy falls within the specified range.
   If width A falls outside the specified range, perform the following steps to make an adjustment.
6. Select [ADJUST] -> [PRN MAIN (TRAY1)] in the SERVICE MODE, and press the OK key.
7. Select [ADJUST] using [▼] key, and press the OK key.
8. Using [▲/▼] key, select the appropriate setting value.
   If width A on the test pattern is longer than the specifications, decrease the setting value.
   If width A on the test pattern is shorter than the specifications, increase the setting value.
9. Press the OK key to validate the setting value selected in step 8.
10. If a single adjustment procedure does not successfully bring width A into the specified range, repeat steps 1 through 10.

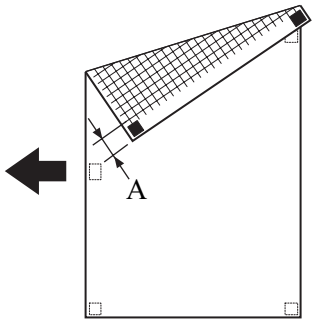
4.4.2 PRN MAIN (BYPASS)

(1) Use

- To adjust by varying the starting position of image writing in the main scanning direction.
- Used when the image on the copy deviates in the main scanning direction.
- Used when the PH unit has been replaced.
- After PRN MAIN (TRAY 1) have been adjusted.

(2) Specification

- Adjust so that width A on the test copy produced falls within the specified range.
- Specifications: 20 ± 2.0 mm(A4), 11.2 mm± 2.0 mm (Letter)



(3) Default setting

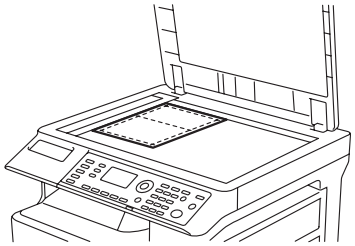
- 100 (0.0 mm)

(4) Setting range

- 80 (-4.0 mm) to 120 (+4.0 mm) (1 step: 0.2 mm)

(5) Procedure

1. Load the bypass tray with A4 or Letter plain paper.
2. Load the tray1 with A4 or Letter plain paper.
3. Enter function of the SERVICE MODE.
4. Select [FUNCTION] -> [PRN TEST PATTERN], and press the OK key.
5. Select [TRAY 1] -> [PATTERN 1], and press the OK key.
   This will produce a test pattern.
6. Place the test pattern on the original glass.



7. Select [ADJUST] -> [PRN MAIN (BYPASS)] -> [TEST COPY] in the SERVICE MODE, and press the OK key.
   This will produce a test copy.
8. Check to see if width A on the test copy falls within the specified range.
   If width A falls outside the specified range, perform the following steps to make an adjustment.
9. Select [ADJUST] using [▼] key, and press the OK key.
10. Using [▲/▼] key, select the appropriate setting value.
    If width A on the test pattern is longer than the specifications, decrease the setting value.
    If width A on the test pattern is shorter than the specifications, increase the setting value.
11. Press the OK key to validate the setting value selected in step 10.

12. If a single adjustment procedure does not successfully bring width A into the specified range, repeat steps 7 through 11.

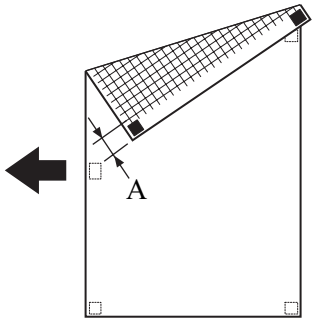
4.4.3 PRN MAIN (TRAY2)

(1) Use

- To adjust by varying the starting position of image writing in the main scanning direction.
- Used when the image on the copy deviates in the main scanning direction.
- Used when the PH unit has been replaced.
- After PRN MAIN (TRAY 1) have been adjusted.

(2) Specification

- Adjust so that width A on the test copy produced falls within the specified range.
- Specifications: 20 ± 2.0 mm(A4), 11.2 mm± 2.0 mm (Letter)



(3) Default setting

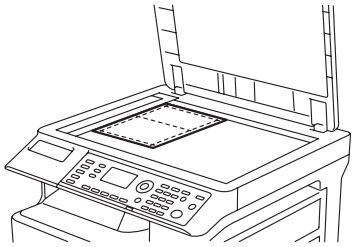
- 100 (0.0 mm)

(4) Setting range

- 80 (-4.0 mm) to 120 (+4.0 mm) (1 step: 0.2 mm)

(5) Procedure

1. Load the tray2 with A4 or Letter plain paper.
2. Load the tray1 with A4 or Letter plain paper.
3. Enter function of the SERVICE MODE.
4. Select [FUNCTION] -> [PRN TEST PATTERN], and press the OK key.
5. Select [TRAY 1] -> [PATTERN 1], and press the OK key.
   This will produce a test pattern.
6. Place the test pattern on the original glass.



7. Select [ADJUST] -> [PRN MAIN (TRAY2)] -> [TEST COPY] in the SERVICE MODE, and press the OK key.
   This will produce a test copy.
8. Check to see if width A on the test copy falls within the specified range.
   If width A falls outside the specified range, perform the following steps to make an adjustment.
9. Select [ADJUST] using [▼] key, and press the OK key.
10. Using [▲/▼] key, select the appropriate setting value.
    If width A on the test pattern is longer than the specifications, decrease the setting value.
    If width A on the test pattern is shorter than the specifications, increase the setting value.
11. Press the OK key to validate the setting value.
12. If a single adjustment procedure does not successfully bring width A into the specified range, repeat steps 7 through 11.

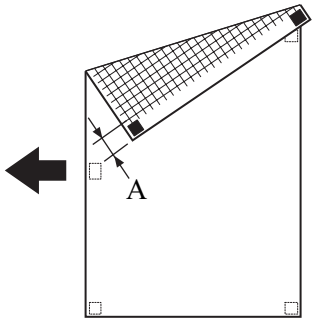
4.4.4 PRN MAIN (TRAY3)

(1) Use

- To adjust by varying the starting position of image writing in the main scanning direction.
- Used when the image on the copy deviates in the main scanning direction.
- Used when the PH unit has been replaced.
- After PRN MAIN (TRAY 1) have been adjusted.

(2) Specification

- Adjust so that width A on the test copy produced falls within the specified range.
- Specifications: 20 ± 2.0 mm(A4), 11.2 mm± 2.0 mm (Letter)



(3) Default setting

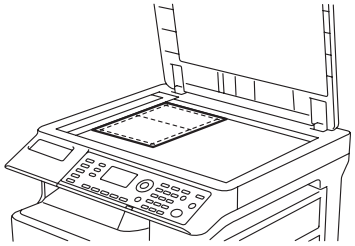
- 100 (0.0 mm)

(4) Setting range

- 80 (-4.0 mm) to 120 (+4.0 mm) (1 step: 0.2 mm)

(5) Procedure

1. Load the tray3 with A4 or Letter plain paper.
2. Load the tray1 with A4 or Letter plain paper.
3. Enter function of the SERVICE MODE.
4. Select [FUNCTION] -> [PRN TEST PATTERN], and press the OK key.
5. Select [TRAY 1] -> [PATTERN 1], and press the OK key.
   This will produce a test pattern.
6. Place the test pattern on the original glass.



7. Select [ADJUST] -> [PRN MAIN (TRAY3)] -> [TEST COPY] in the SERVICE MODE, and press the OK key.
   This will produce a test copy.
8. Check to see if width A on the test copy falls within the specified range.
   If width A falls outside the specified range, perform the following steps to make an adjustment.
9. Select [ADJUST] using [▼] key, and press the OK key.
10. Using [▲/▼] key, select the appropriate setting value.
    If width A on the test pattern is longer than the specifications, decrease the setting value.
    If width A on the test pattern is shorter than the specifications, increase the setting value.
11. Press the OK key to validate the setting value.
12. If a single adjustment procedure does not successfully bring width A into the specified range, repeat steps 7 through 11.

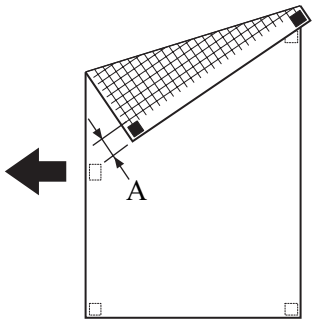
4.4.5 PRN MAIN (TRAY4)

(1) Use

- To adjust by varying the starting position of image writing in the main scanning direction.
- Used when the image on the copy deviates in the main scanning direction.
- Used when the PH unit has been replaced.
- After PRN MAIN (TRAY 1) have been adjusted.

(2) Specification

- Adjust so that width A on the test copy produced falls within the specified range.
- Specifications: 20 ± 2.0 mm(A4), 11.2 mm± 2.0 mm (Letter)



(3) Default setting

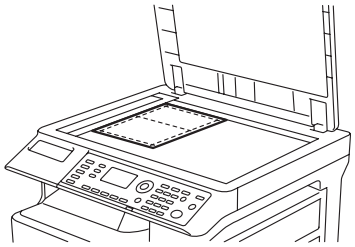
- 100 (0.0 mm)

(4) Setting range

- 80 (-4.0 mm) to 120 (+4.0 mm) (1 step: 0.2 mm)

(5) Procedure

1. Load the tray4 with A4 or Letter plain paper.
2. Load the tray1 with A4 or Letter plain paper.
3. Enter function of the SERVICE MODE.
4. Select [FUNCTION] -> [PRN TEST PATTERN], and press the OK key.
5. Select [TRAY 1] -> [PATTERN 1], and press the OK key.
   This will produce a test pattern.
6. Place the test pattern on the original glass.



7. Select [ADJUST] -> [PRN MAIN (TRAY4)] -> [TEST COPY] in the SERVICE MODE, and press the OK key.
   This will produce a test copy.
8. Check to see if width A on the test copy falls within the specified range.
   If width A falls outside the specified range, perform the following steps to make an adjustment.
9. Select [ADJUST] using [▼] key, and press the OK key.
10. Using [▲/▼] key, select the appropriate setting value.
    If width A on the test pattern is longer than the specifications, decrease the setting value.
    If width A on the test pattern is shorter than the specifications, increase the setting value.
11. Press the OK key to validate the setting value.
12. If a single adjustment procedure does not successfully bring width A into the specified range, repeat steps 7 through 11.

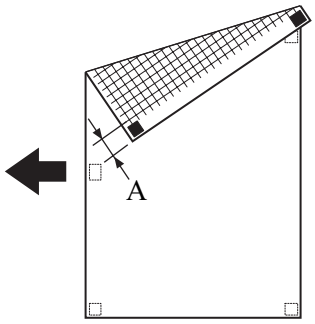
4.4.6 PRN MAIN (TRAY5)

(1) Use

- To adjust by varying the starting position of image writing in the main scanning direction.
- Used when the image on the copy deviates in the main scanning direction.
- Used when the PH unit has been replaced.
- After PRN MAIN (TRAY 1) have been adjusted.

(2) Specification

- Adjust so that width A on the test copy produced falls within the specified range.
- Specifications: 20 ± 2.0 mm(A4), 11.2 mm± 2.0 mm (Letter)



(3) Default setting

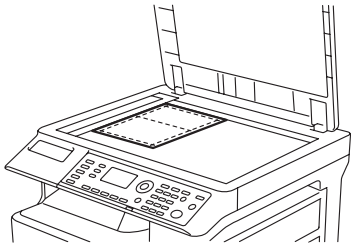
- 100 (0.0 mm)

(4) Setting range

- 80 (-4.0 mm) to 120 (+4.0 mm) (1 step: 0.2 mm)

(5) Procedure

1. Load the tray5 with A4 or Letter plain paper.
2. Load the tray1 with A4 or Letter plain paper.
3. Enter function of the SERVICE MODE.
4. Select [FUNCTION] -> [PRN TEST PATTERN], and press the OK key.
5. Select [TRAY 1] -> [PATTERN 1], and press the OK key.
   This will produce a test pattern.
6. Place the test pattern on the original glass.



7. Select [ADJUST] -> [PRN MAIN (TRAY5)] -> [TEST COPY] in the SERVICE MODE, and press the OK key.
   This will produce a test copy.
8. Check to see if width A on the test copy falls within the specified range.
   If width A falls outside the specified range, perform the following steps to make an adjustment.
9. Select [ADJUST] using [▼] key, and press the OK key.
10. Using [▲/▼] key, select the appropriate setting value.
    If width A on the test pattern is longer than the specifications, decrease the setting value.
    If width A on the test pattern is shorter than the specifications, increase the setting value.
11. Press the OK key to validate the setting value.
12. If a single adjustment procedure does not successfully bring width A into the specified range, repeat steps 7 through 11.

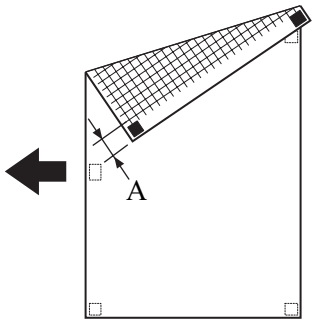
4.4.7 PRN MAIN (DUPLEX)

(1) Use

- To adjust by varying the starting position of image writing in the main scanning direction.
- Used when the image on the copy deviates in the main scanning direction.
- Used when the PH unit has been replaced.
- After PRN MAIN (TRAY 1) have been adjusted.

(2) Specification

- Adjust so that width A on the test copy produced falls within the specified range.
- Specifications: 20 ± 2.0 mm(A4), 11.2 mm± 2.0 mm (Letter)



(3) Default setting

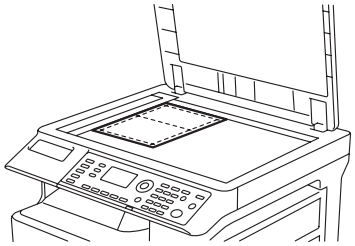
- 100 (0.0 mm)

(4) Setting range

- 80 (-4.0 mm) to 120 (+4.0 mm) (1 step: 0.2 mm)

(5) Procedure

1. Load the tray1 with A4 or Letter plain paper.
2. Enter function of the SERVICE MODE.
3. Select [FUNCTION] -> [PRN TEST PATTERN], and press the OK key.
4. Select [TRAY 1] -> [PATTERN 1], and press the OK key.
   This will produce a test pattern.
5. Place the test pattern on the original glass.



6. Select [ADJUST] -> [PRN MAIN (DUPLEX)] -> [TEST COPY] in the SERVICE MODE, and press the OK key.
   This will produce a test copy.
7. Check to see if width A on the test copy falls within the specified range.
   If width A falls outside the specified range, perform the following steps to make an adjustment.
8. Select [ADJUST] using [▼] key, and press the OK key.
9. Using [▲/▼] key, select the appropriate setting value.
   If width A on the test pattern is longer than the specifications, decrease the setting value.
   If width A on the test pattern is shorter than the specifications, increase the setting value.
10. Press the OK key to validate the setting value.
11. If a single adjustment procedure does not successfully bring width A into the specified range, repeat steps 6 through 10.

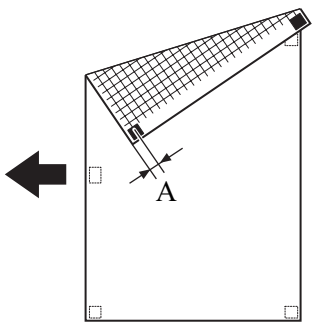
4.4.8 PRN SUB (TRAY1-P)

(1) Use

- To adjust by varying the starting position of image writing in the sub scanning direction.
- Used when the image on the copy deviates in the sub scanning direction.
- Used when the PH unit has been replaced.

(2) Specification

- Adjust so that width A on the test copy produced falls within the specified range.
- Specifications: 10 ± 1.5 mm



(3) Default setting

- 100 (0.0 mm)

(4) Setting range

- 80 (-4.0 mm) to 120 (+4.0 mm) (1 step: 0.2 mm)

(5) Procedure

1. Load the tray1 with A4 or Letter plain paper.
2. Enter function of the SERVICE MODE.
3. Select [FUNCTION] -> [PRN TEST PATTERN], and press the OK key.
4. Select [TRAY 1] -> [PATTERN 1], and press the OK key.
   This will produce a test pattern.
5. Check to see if width A on the test copy falls within the specified range.
   If width A falls outside the specified range, perform the following steps to make an adjustment.
6. Select [ADJUST] -> [PRN SUB (TRAY1-P)] in the SERVICE MODE, and press the OK key.
7. Select [ADJUST] using [▼] key, and press the OK key.
8. Using [▲/▼] key, select the appropriate setting value.
   If width A on the test pattern is longer than the specifications, decrease the setting value.
   If width A on the test pattern is shorter than the specifications, increase the setting value.
9. Press the OK key to validate the setting value.
10. If a single adjustment procedure does not successfully bring width A into the specified range, repeat steps 1 through 9.

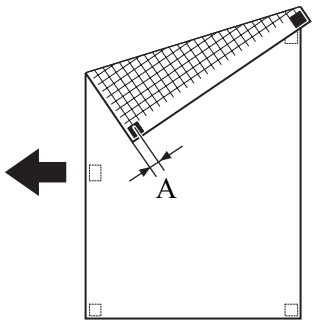
4.4.9 PRN SUB (TRAY1-R)

(1) Use

- To adjust by varying the starting position of image writing in the sub scanning direction.
- Used when the image copied on the recycled paper fed from tray 1 deviates in the sub scanning direction.
- Used when the PH unit has been replaced.
- After PRN SUB (TRAY1-P) have been adjusted.

(2) Specification

- Adjust so that width A on the test copy produced falls within the specified range.
- Specifications: 10 ± 1.5 mm



(3) Default setting

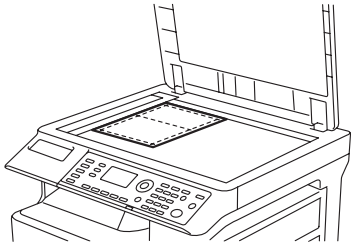
- 100 (0.0 mm)

(4) Setting range

- 80 (-4.0 mm) to 120 (+4.0 mm) (1 step: 0.2 mm)

(5) Procedure

1. Load the tray1 with A4 or Letter plain paper.
2. Enter function of the SERVICE MODE.
3. Select [FUNCTION] -> [PRN TEST PATTERN], and press the OK key.
4. Select [TRAY 1] -> [PATTERN 1], and press the OK key.
   This will produce a test pattern.
5. Place the test pattern on the original glass.



6. Load the tray1 with A4 or Letter recycled paper.
7. Select [ADJUST] -> [PRN SUB (TRAY1-R)] -> [TEST COPY] in the SERVICE MODE, and press the OK key.
   This will produce a test copy.
8. Check to see if width A on the test copy falls within the specified range.
   If width A falls outside the specified range, perform the following steps to make an adjustment.
9. Select [ADJUST] using [▼] key, and press the OK key.
10. Using [▲/▼] key, select the appropriate setting value.
    If width A on the test pattern is longer than the specifications, decrease the setting value.
    If width A on the test pattern is shorter than the specifications, increase the setting value.
11. Press the OK key to validate the setting value.
12. If a single adjustment procedure does not successfully bring width A into the specified range, repeat steps 7 through 11.

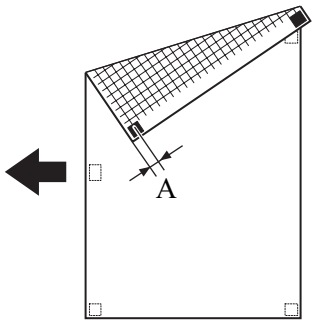
4.4.10 PRN SUB (TRAY1-C1)

(1) Use

- To adjust by varying the starting position of image writing in the sub scanning direction.
- Used when the image copied on the Card 1 (thick paper 1) fed from tray 1 deviates in the sub scanning direction.
- Used when the PH unit has been replaced.

(2) Specification

- Adjust so that width A on the test copy produced falls within the specified range.
- Specifications: 10 ± 1.5 mm



(3) Default setting

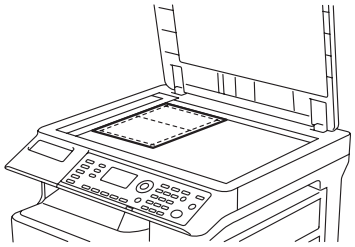
- 100 (0.0 mm)

(4) Setting range

- 80 (-4.0 mm) to 120 (+4.0 mm) (1 step: 0.2 mm)

(5) Procedure

1. Load the tray1 with A4 or Letter plain paper.
2. Enter function of the SERVICE MODE.
3. Select [FUNCTION] -> [PRN TEST PATTERN], and press the OK key.
4. Select [TRAY 1] -> [PATTERN 1], and press the OK key.
   This will produce a test pattern.
5. Place the test pattern on the original glass.



6. Load the tray1 with A4 or Letter Card 1 (thick paper 1).
7. Select [ADJUST] -> [PRN SUB (TRAY1-C1)] -> [TEST COPY] in the SERVICE MODE, and press the OK key.
   This will produce a test copy.
8. Check to see if width A on the test copy falls within the specified range.
   If width A falls outside the specified range, perform the following steps to make an adjustment.
9. Select [ADJUST] using [▼] key, and press the OK key.
10. Using [▲/▼] key, select the appropriate setting value.
    If width A on the test pattern is longer than the specifications, decrease the setting value.
    If width A on the test pattern is shorter than the specifications, increase the setting value.
11. Press the OK key to validate the setting value.
12. If a single adjustment procedure does not successfully bring width A into the specified range, repeat steps 7 through 11.

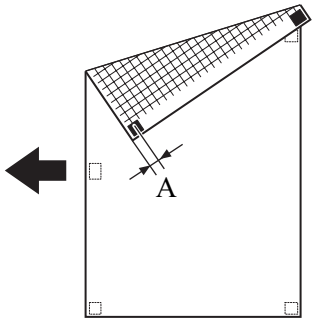
4.4.11 PRN SUB (TRAY1-C2)

(1) Use

- To adjust by varying the starting position of image writing in the sub scanning direction.
- Used when the image copied on the Card 2 (thick paper 2) fed from tray 1 deviates in the sub scanning direction.
- Used when the PH unit has been replaced.

(2) Specification

- Adjust so that width A on the test copy produced falls within the specified range.
- Specifications: 10 ± 1.5 mm



(3) Default setting

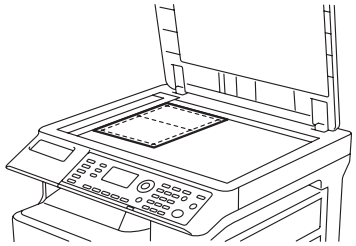
- 100 (0.0 mm)

(4) Setting range

- 80 (-4.0 mm) to 120 (+4.0 mm) (1 step: 0.2 mm)

(5) Procedure

1. Load the tray1 with A4 or Letter plain paper.
2. Enter function of the SERVICE MODE.
3. Select [FUNCTION] -> [PRN TEST PATTERN], and press the OK key.
4. Select [TRAY 1] -> [PATTERN 1], and press the OK key.
   This will produce a test pattern.
5. Place the test pattern on the original glass.



6. Load the tray1 with A4 or Letter Card 2 (thick paper 2).
7. Select [ADJUST] -> [PRN SUB (TRAY1-C2)] -> [TEST COPY] in the SERVICE MODE, and press the OK key.
   This will produce a test copy.
8. Check to see if width A on the test copy falls within the specified range.
   If width A falls outside the specified range, perform the following steps to make an adjustment.
9. Select [ADJUST] using [▼] key, and press the OK key.
10. Using [▲/▼] key, select the appropriate setting value.
    If width A on the test pattern is longer than the specifications, decrease the setting value.
    If width A on the test pattern is shorter than the specifications, increase the setting value.
11. Press the OK key to validate the setting value.
12. If a single adjustment procedure does not successfully bring width A into the specified range, repeat steps 7 through 11.

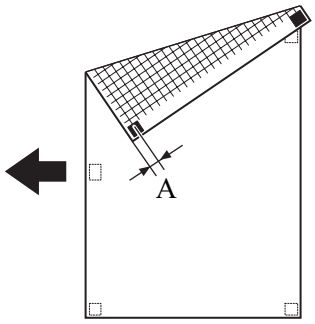
4.4.12 PRN SUB (TRAY1-O)

(1) Use

- To adjust by varying the starting position of image writing in the sub scanning direction.
- Used when the image copied on the OHP film fed from tray 1 deviates in the sub scanning direction.
- Used when the PH unit has been replaced.

(2) Specification

- Adjust so that width A on the test copy produced falls within the specified range.
- Specifications: 10 ± 1.5 mm



(3) Default setting

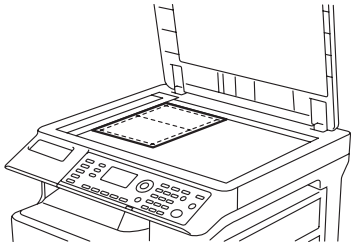
- 100 (0.0 mm)

(4) Setting range

- 80 (-4.0 mm) to 120 (+4.0 mm) (1 step: 0.2 mm)

(5) Procedure

1. Load the tray1 with A4 or Letter plain paper.
2. Enter function of the SERVICE MODE.
3. Select [FUNCTION] -> [PRN TEST PATTERN], and press the OK key.
4. Select [TRAY 1] -> [PATTERN 1], and press the OK key.
   This will produce a test pattern.
5. Place the test pattern on the original glass.



6. Load the tray1 with A4 or Letter OHP film.
7. Select [ADJUST] -> [PRN SUB (TRAY1-O)] -> [TEST COPY] in the SERVICE MODE, and press the OK key.
   This will produce a test copy.
8. Check to see if width A on the test copy falls within the specified range.
   If width A falls outside the specified range, perform the following steps to make an adjustment.
9. Select [ADJUST] using [▼] key, and press the OK key.
10. Using [▲/▼] key, select the appropriate setting value.
    If width A on the test pattern is longer than the specifications, decrease the setting value.
    If width A on the test pattern is shorter than the specifications, increase the setting value.
11. Press the OK key to validate the setting value.
12. If a single adjustment procedure does not successfully bring width A into the specified range, repeat steps 7 through 11.

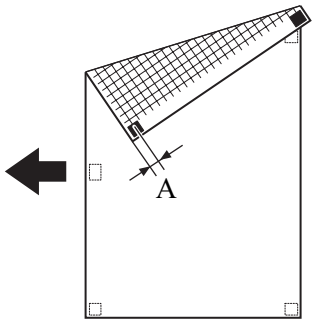
4.4.13 PRN SUB (TRAY1-E)

(1) Use

- To adjust by varying the starting position of image writing in the sub scanning direction.
- Used when the image copied on the Envelope fed from tray 1 deviates in the sub scanning direction.
- Used when the PH unit has been replaced.

(2) Specification

- Adjust so that width A on the test copy produced falls within the specified range.
- Specifications: 10 ± 1.5 mm



(3) Default setting

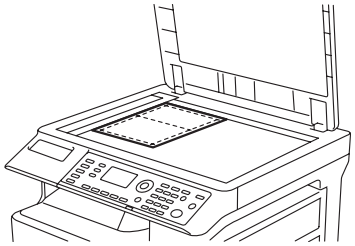
- 100 (0.0 mm)

(4) Setting range

- 80 (-4.0 mm) to 120 (+4.0 mm) (1 step: 0.2 mm)

(5) Procedure

1. Load the tray1 with A4 or Letter plain paper.
2. Enter function of the SERVICE MODE.
3. Select [FUNCTION] -> [PRN TEST PATTERN], and press the OK key.
4. Select [TRAY 1] -> [PATTERN 1], and press the OK key.
   This will produce a test pattern.
5. Place the test pattern on the original glass.



6. Load the tray 1 with Envelope.
7. Select [ADJUST] -> [PRN SUB (TRAY1-E)] -> [TEST COPY] in the SERVICE MODE, and press the OK key.
   This will produce a test copy.
8. Check to see if width A on the test copy falls within the specified range.
   If width A falls outside the specified range, perform the following steps to make an adjustment.
9. Select [ADJUST] using [▼] key, and press the OK key.
10. Using [▲/▼] key, select the appropriate setting value.
    If width A on the test pattern is longer than the specifications, decrease the setting value.
    If width A on the test pattern is shorter than the specifications, increase the setting value.
11. Press the OK key to validate the setting value.
12. If a single adjustment procedure does not successfully bring width A into the specified range, repeat steps 7 through 11.

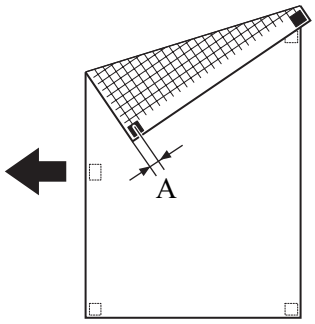
4.4.14 PRN SUB (BYPASS-P)

(1) Use

- To adjust by varying the starting position of image writing in the sub scanning direction.
- Used when the image copied on the paper fed from the manual bypass tray deviates in the sub scanning direction.
- Used when the PH unit has been replaced.

(2) Specification

- Adjust so that width A on the test copy produced falls within the specified range.
- Specifications: 10 ± 1.5 mm



(3) Default setting

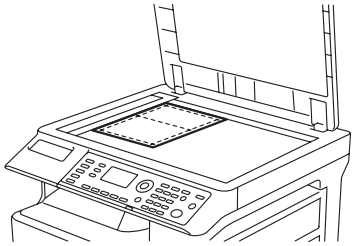
- 100 (0.0 mm)

(4) Setting range

- 80 (-4.0 mm) to 120 (+4.0 mm) (1 step: 0.2 mm)

(5) Procedure

1. Load the tray1 with A4 or Letter plain paper.
2. Enter function of the SERVICE MODE.
3. Select [FUNCTION] -> [PRN TEST PATTERN], and press the OK key.
4. Select [TRAY 1] -> [PATTERN 1], and press the OK key.
   This will produce a test pattern.
5. Place the test pattern on the original glass.



6. Load the manual bypass tray with A4 or Letter plain paper.
7. Select [ADJUST] -> [PRN SUB (BYPASS-P)] -> [TEST COPY] in the SERVICE MODE, and press the OK key.
   This will produce a test copy.
8. Check to see if width A on the test copy falls within the specified range.
   If width A falls outside the specified range, perform the following steps to make an adjustment.
9. Select [ADJUST] using [▼] key, and press the OK key.
10. Using [▲/▼] key, select the appropriate setting value.
    If width A on the test pattern is longer than the specifications, decrease the setting value.
    If width A on the test pattern is shorter than the specifications, increase the setting value.
11. Press the OK key to validate the setting value.
12. If a single adjustment procedure does not successfully bring width A into the specified range, repeat steps 7 through 11.

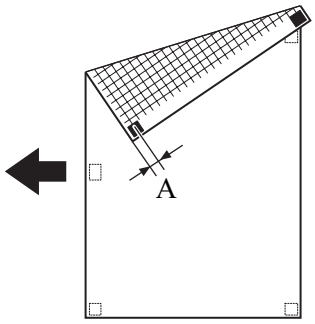
4.4.15 PRN SUB (BYPASS-R)

(1) Use

- To adjust by varying the starting position of image writing in the sub scanning direction.
- Used when the image copied on the recycled paper from the manual bypass tray deviates in the sub scanning direction.
- Used when the PH unit has been replaced.
- After PRN SUB (TRAY1-P) have been adjusted.

(2) Specification

- Adjust so that width A on the test copy produced falls within the specified range.
- Specifications: 10 ± 1.5 mm



(3) Default setting

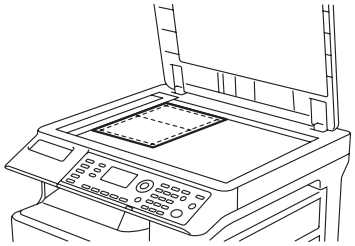
- 100 (0.0 mm)

(4) Setting range

- 80 (-4.0 mm) to 120 (+4.0 mm) (1 step: 0.2 mm)

(5) Procedure

1. Load the tray1 with A4 or Letter plain paper.
2. Enter function of the SERVICE MODE.
3. Select [FUNCTION] -> [PRN TEST PATTERN], and press the OK key.
4. Select [TRAY 1] -> [PATTERN 1], and press the OK key.
   This will produce a test pattern.
5. Place the test pattern on the original glass.



6. Load the manual bypass tray with A4 or Letter recycle paper.
7. Select [ADJUST] -> [PRN SUB (BYPASS-R)] -> [TEST COPY] in the SERVICE MODE, and press the OK key.
   This will produce a test copy.
8. Check to see if width A on the test copy falls within the specified range.
   If width A falls outside the specified range, perform the following steps to make an adjustment.
9. Select [ADJUST] using [▼] key, and press the OK key.
10. Using [▲/▼] key, select the appropriate setting value.
    If width A on the test pattern is longer than the specifications, decrease the setting value.
    If width A on the test pattern is shorter than the specifications, increase the setting value.
11. Press the OK key to validate the setting value.
12. If a single adjustment procedure does not successfully bring width A into the specified range, repeat steps 7 through 11.

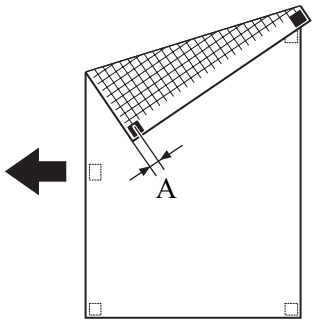
4.4.16 PRN SUB (BYPASS-C1)

(1) Use

- To adjust by varying the starting position of image writing in the sub scanning direction.
- Used when the image copied on the Card 1 (thick paper 1) from the manual bypass tray deviates in the sub scanning direction.
- Used when the PH unit has been replaced.
- After PRN SUB (TRAY1-P) have been adjusted.

(2) Specification

- Adjust so that width A on the test copy produced falls within the specified range.
- Specifications: 10 ± 1.5 mm



(3) Default setting

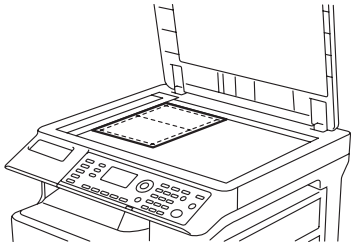
- 100 (0.0 mm)

(4) Setting range

- 80 (-4.0 mm) to 120 (+4.0 mm) (1 step: 0.2 mm)

(5) Procedure

1. Load the tray1 with A4 or Letter plain paper.
2. Enter function of the SERVICE MODE.
3. Select [FUNCTION] -> [PRN TEST PATTERN], and press the OK key.
4. Select [TRAY 1] -> [PATTERN 1], and press the OK key.
   This will produce a test pattern.
5. Place the test pattern on the original glass.



6. Load the manual bypass tray with A4 or Letter Card 1 (thick paper 1).
7. Select [ADJUST] -> [PRN SUB (BYPASS-C1)] -> [TEST COPY] in the SERVICE MODE, and press the OK key.
   This will produce a test copy.
8. Check to see if width A on the test copy falls within the specified range.
   If width A falls outside the specified range, perform the following steps to make an adjustment.
9. Select [ADJUST] using [▼] key, and press the OK key.
10. Using [▲/▼] key, select the appropriate setting value.
    If width A on the test pattern is longer than the specifications, decrease the setting value.
    If width A on the test pattern is shorter than the specifications, increase the setting value.
11. Press the OK key to validate the setting value.
12. If a single adjustment procedure does not successfully bring width A into the specified range, repeat steps 7 through 11.

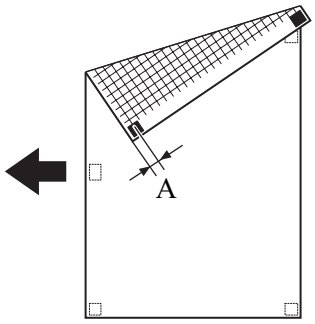
4.4.17 PRN SUB (BYPASS-C2)

(1) Use

- To adjust by varying the starting position of image writing in the sub scanning direction.
- Used when the image copied on the Card 2 (thick paper 2) from the manual bypass tray deviates in the sub scanning direction.
- Used when the PH unit has been replaced.
- After PRN SUB (TRAY1-P) have been adjusted.

(2) Specification

- Adjust so that width A on the test copy produced falls within the specified range.
- Specifications: 10 ± 1.5 mm



(3) Default setting

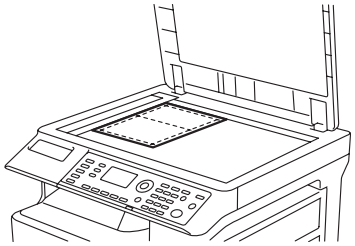
- 100 (0.0 mm)

(4) Setting range

- 80 (-4.0 mm) to 120 (+4.0 mm) (1 step: 0.2 mm)

(5) Procedure

1. Load the tray1 with A4 or Letter plain paper.
2. Enter function of the SERVICE MODE.
3. Select [FUNCTION] -> [PRN TEST PATTERN], and press the OK key.
4. Select [TRAY 1] -> [PATTERN 1], and press the OK key.
   This will produce a test pattern.
5. Place the test pattern on the original glass.



6. Load the manual bypass tray with A4 or Letter Card 2 (thick paper 2).
7. Select [ADJUST] -> [PRN SUB (BYPASS-C2)] -> [TEST COPY] in the SERVICE MODE, and press the OK key.
   This will produce a test copy.
8. Check to see if width A on the test copy falls within the specified range.
   If width A falls outside the specified range, perform the following steps to make an adjustment.
9. Select [ADJUST] using [▼] key, and press the OK key.
10. Using [▲/▼] key, select the appropriate setting value.
    If width A on the test pattern is longer than the specifications, decrease the setting value.
    If width A on the test pattern is shorter than the specifications, increase the setting value.
11. Press the OK key to validate the setting value.
12. If a single adjustment procedure does not successfully bring width A into the specified range, repeat steps 7 through 11.

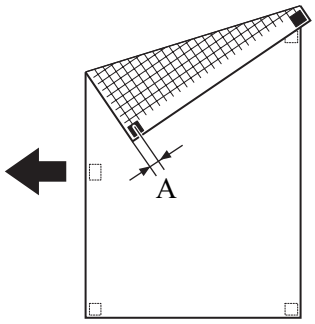
4.4.18 PRN SUB (BYPASS-O)

(1) Use

- To adjust by varying the starting position of image writing in the sub scanning direction.
- Used when the image copied on the OHP film from the manual bypass tray deviates in the sub scanning direction.
- Used when the PH unit has been replaced.
- After PRN SUB (TRAY1-P) have been adjusted.

(2) Specification

- Adjust so that width A on the test copy produced falls within the specified range.
- Specifications: 10 ± 1.5 mm



(3) Default setting

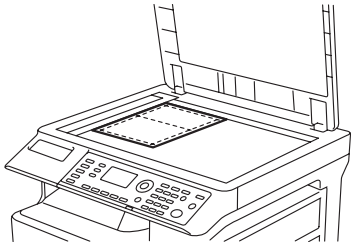
- 100 (0.0 mm)

(4) Setting range

- 80 (-4.0 mm) to 120 (+4.0 mm) (1 step: 0.2 mm)

(5) Procedure

1. Load the tray1 with A4 or Letter plain paper.
2. Enter function of the SERVICE MODE.
3. Select [FUNCTION] -> [PRN TEST PATTERN], and press the OK key.
4. Select [TRAY 1] -> [PATTERN 1], and press the OK key.
   This will produce a test pattern.
5. Place the test pattern on the original glass.



6. Load the manual bypass tray with A4 or Letter OHP film.
7. Select [ADJUST] -> [PRN SUB (BYPASS-O)] -> [TEST COPY] in the SERVICE MODE, and press the OK key.
   This will produce a test copy.
8. Check to see if width A on the test copy falls within the specified range.
   If width A falls outside the specified range, perform the following steps to make an adjustment.
9. Select [ADJUST] using [▼] key, and press the OK key.
10. Using [▲/▼] key, select the appropriate setting value.
    If width A on the test pattern is longer than the specifications, decrease the setting value.
    If width A on the test pattern is shorter than the specifications, increase the setting value.
11. Press the OK key to validate the setting value.
12. If a single adjustment procedure does not successfully bring width A into the specified range, repeat steps 7 through 11.

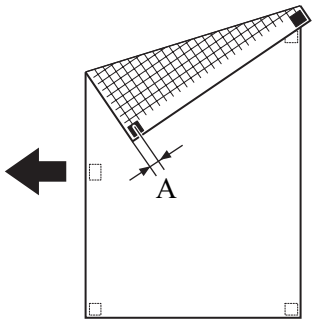
4.4.19 PRN SUB (BYPASS-E)

(1) Use

- To adjust by varying the starting position of image writing in the sub scanning direction.
- Used when the image copied on the Envelope from the manual bypass tray deviates in the sub scanning direction.
- Used when the PH unit has been replaced.
- After PRN SUB (TRAY1-P) have been adjusted.

(2) Specification

- Adjust so that width A on the test copy produced falls within the specified range.
- Specifications: 10 ± 1.5 mm



(3) Default setting

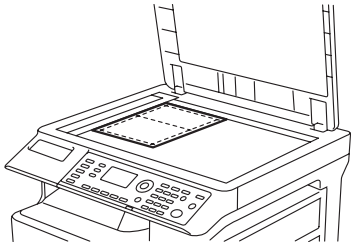
- 100 (0.0 mm)

(4) Setting range

- 80 (-4.0 mm) to 120 (+4.0 mm) (1 step: 0.2 mm)

(5) Procedure

1. Load the tray1 with A4 or Letter plain paper.
2. Enter function of the SERVICE MODE.
3. Select [FUNCTION] -> [PRN TEST PATTERN], and press the OK key.
4. Select [TRAY 1] -> [PATTERN 1], and press the OK key.
   This will produce a test pattern.
5. Place the test pattern on the original glass.



6. Load the tray 1 with Envelope.
7. Select [ADJUST] -> [PRN SUB (BYPASS-E)] -> [TEST COPY] in the SERVICE MODE, and press the OK key.
   This will produce a test copy.
8. Check to see if width A on the test copy falls within the specified range.
   If width A falls outside the specified range, perform the following steps to make an adjustment.
9. Select [ADJUST] using [▼] key, and press the OK key.
10. Using [▲/▼] key, select the appropriate setting value.
    If width A on the test pattern is longer than the specifications, decrease the setting value.
    If width A on the test pattern is shorter than the specifications, increase the setting value.
11. Press the OK key to validate the setting value.
12. If a single adjustment procedure does not successfully bring width A into the specified range, repeat steps 7 through 11.

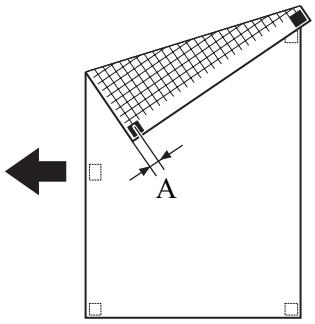
4.4.20 PRN SUB (TRAY2)

(1) Use

- To adjust by varying the starting position of image writing in the sub scanning direction.
- Used when the image copied on the paper fed from tray 2 deviates in the sub scanning direction.
- Used when the PH unit has been replaced.
- After PRN SUB (TRAY1-P) have been adjusted.

(2) Specification

- Adjust so that width A on the test copy produced falls within the specified range.
- Specifications: 10 ± 1.5 mm



(3) Default setting

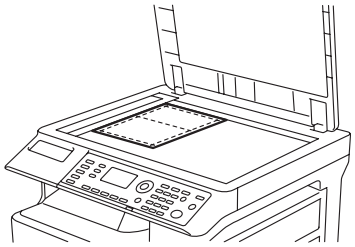
- 100 (0.0 mm)

(4) Setting range

- 80 (-4.0 mm) to 120 (+4.0 mm) (1 step: 0.2 mm)

(5) Procedure

1. Load the tray2 with A4 or Letter plain paper.
2. Load the tray1 with A4 or Letter plain paper.
3. Enter function of the SERVICE MODE.
4. Select [FUNCTION] -> [PRN TEST PATTERN], and press the OK key.
5. Select [TRAY 1] -> [PATTERN 1], and press the OK key.
   This will produce a test pattern.
6. Place the test pattern on the original glass.



7. Select [ADJUST] -> [PRN SUB (TRAY2)] -> [TEST COPY] in the SERVICE MODE, and press the OK key.
   This will produce a test copy.
8. Check to see if width A on the test copy falls within the specified range.
   If width A falls outside the specified range, perform the following steps to make an adjustment.
9. Select [ADJUST] using [▼] key, and press the OK key.
10. Using [▲/▼] key, select the appropriate setting value.
    If width A on the test pattern is longer than the specifications, decrease the setting value.
    If width A on the test pattern is shorter than the specifications, increase the setting value.
11. Press the OK key to validate the setting value.
12. If a single adjustment procedure does not successfully bring width A into the specified range, repeat steps 7 through 11.

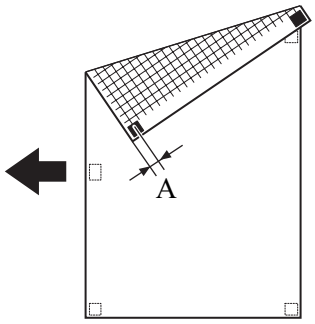
4.4.21 PRN SUB (TRAY3)

(1) Use

- To adjust by varying the starting position of image writing in the sub scanning direction.
- Used when the image copied on the paper fed from tray 3 deviates in the sub scanning direction.
- Used when the PH unit has been replaced.
- After PRN SUB (TRAY1-P) have been adjusted.

(2) Specification

- Adjust so that width A on the test copy produced falls within the specified range.
- Specifications: 10 ± 1.5 mm



(3) Default setting

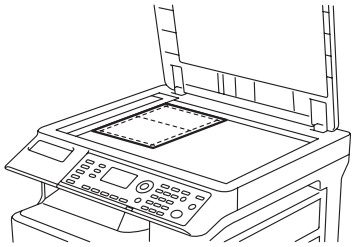
- 100 (0.0 mm)

(4) Setting range

- 80 (-4.0 mm) to 120 (+4.0 mm) (1 step: 0.2 mm)

(5) Procedure

1. Load the tray3 with A4 or Letter plain paper.
2. Load the tray1 with A4 or Letter plain paper.
3. Enter function of the SERVICE MODE.
4. Select [FUNCTION] -> [PRN TEST PATTERN], and press the OK key.
5. Select [TRAY 1] -> [PATTERN 1], and press the OK key.
   This will produce a test pattern.
6. Place the test pattern on the original glass.



7. Select [ADJUST] -> [PRN SUB (TRAY3)] -> [TEST COPY] in the SERVICE MODE, and press the OK key.
   This will produce a test copy.
8. Check to see if width A on the test copy falls within the specified range.
   If width A falls outside the specified range, perform the following steps to make an adjustment.
9. Select [ADJUST] using [▼] key, and press the OK key.
10. Using [▲/▼] key, select the appropriate setting value.
    If width A on the test pattern is longer than the specifications, decrease the setting value.
    If width A on the test pattern is shorter than the specifications, increase the setting value.
11. Press the OK key to validate the setting value.
12. If a single adjustment procedure does not successfully bring width A into the specified range, repeat steps 7 through 11.

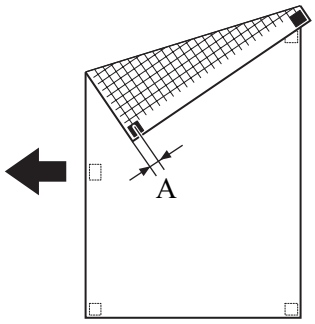
4.4.22 PRN SUB (TRAY4)

(1) Use

- To adjust by varying the starting position of image writing in the sub scanning direction.
- Used when the image copied on the paper fed from tray 4 deviates in the sub scanning direction.
- Used when the PH unit has been replaced.
- After PRN SUB (TRAY1-P) have been adjusted.

(2) Specification

- Adjust so that width A on the test copy produced falls within the specified range.
- Specifications: 10 ± 1.5 mm



(3) Default setting

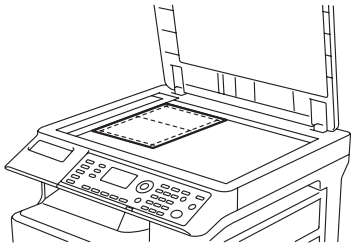
- 100 (0.0 mm)

(4) Setting range

- 80 (-4.0 mm) to 120 (+4.0 mm) (1 step: 0.2 mm)

(5) Procedure

1. Load the tray4 with A4 or Letter plain paper.
2. Load the tray1 with A4 or Letter plain paper.
3. Enter function of the SERVICE MODE.
4. Select [FUNCTION] -> [PRN TEST PATTERN], and press the OK key.
5. Select [TRAY 1] -> [PATTERN 1], and press the OK key.
   This will produce a test pattern.
6. Place the test pattern on the original glass.



7. Select [ADJUST] -> [PRN SUB (TRAY4)] -> [TEST COPY] in the SERVICE MODE, and press the OK key.
   This will produce a test copy.
8. Check to see if width A on the test copy falls within the specified range.
   If width A falls outside the specified range, perform the following steps to make an adjustment.
9. Select [ADJUST] using [▼] key, and press the OK key.
10. Using [▲/▼] key, select the appropriate setting value.
    If width A on the test pattern is longer than the specifications, decrease the setting value.
    If width A on the test pattern is shorter than the specifications, increase the setting value.
11. Press the OK key to validate the setting value.
12. If a single adjustment procedure does not successfully bring width A into the specified range, repeat steps 7 through 11.

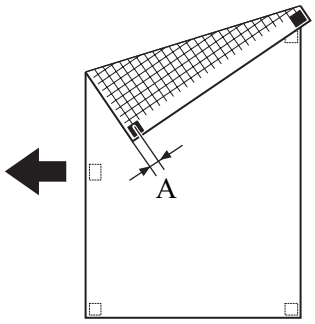
4.4.23 PRN SUB (TRAY5)

(1) Use

- To adjust by varying the starting position of image writing in the sub scanning direction.
- Used when the image copied on the paper fed from tray 5 deviates in the sub scanning direction.
- Used when the PH unit has been replaced.
- After PRN SUB (TRAY1-P) have been adjusted.

(2) Specification

- Adjust so that width A on the test copy produced falls within the specified range.
- Specifications: 10 ± 1.5 mm



(3) Default setting

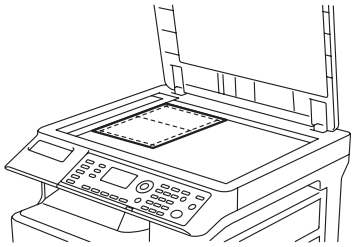
- 100 (0.0 mm)

(4) Setting range

- 80 (-4.0 mm) to 120 (+4.0 mm) (1 step: 0.2 mm)

(5) Procedure

1. Load the tray5 with A4 or Letter plain paper.
2. Load the tray1 with A4 or Letter plain paper.
3. Enter function of the SERVICE MODE.
4. Select [FUNCTION] -> [PRN TEST PATTERN], and press the OK key.
5. Select [TRAY 1] -> [PATTERN 1], and press the OK key.
   This will produce a test pattern.
6. Place the test pattern on the original glass.



7. Select [ADJUST] -> [PRN SUB (TRAY5)] -> [TEST COPY] in the SERVICE MODE, and press the OK key.
   This will produce a test copy.
8. Check to see if width A on the test copy falls within the specified range.
   If width A falls outside the specified range, perform the following steps to make an adjustment.
9. Select [ADJUST] using [▼] key, and press the OK key.
10. Using [▲/▼] key, select the appropriate setting value.
    If width A on the test pattern is longer than the specifications, decrease the setting value.
    If width A on the test pattern is shorter than the specifications, increase the setting value.
11. Press the OK key to validate the setting value.
12. If a single adjustment procedure does not successfully bring width A into the specified range, repeat steps 7 through 11.

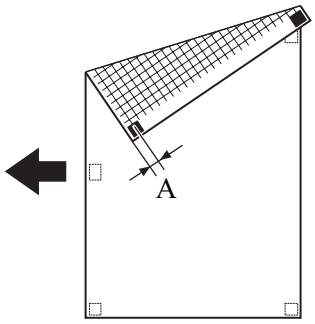
4.4.24 PRN SUB (DUPLEX)

(1) Use

- To adjust by varying the starting position of image writing in the sub scanning direction.
- Used when the image copied on the second side deviates in the sub scanning direction in duplex printing.
- Used when the PH unit has been replaced.
- After PRN SUB (TRAY1-P) have been adjusted.

(2) Specification

- Adjust so that width A on the test copy produced falls within the specified range.
- Specifications: 10 ± 1.5 mm



(3) Default setting

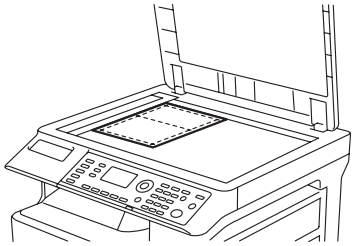
- 100 (0.0 mm)

(4) Setting range

- 80 (-4.0 mm) to 120 (+4.0 mm) (1 step: 0.2 mm)

(5) Procedure

1. Load the tray1 with A4 or Letter plain paper.
2. Enter function of the SERVICE MODE.
3. Select [FUNCTION], [PRN TEST PATTERN] and press the OK key.
4. Select [TRAY 1] -> [PATTERN 1], and press the OK key.
   This will produce a test pattern.
5. Place the test pattern on the original glass.



6. Select [ADJUST] -> [PRN SUB (DUPLEX)] -> [TEST COPY] in the SERVICE MODE, and press the OK key.
   This will produce a test copy.
7. Check to see if width A on the test copy falls within the specified range.
   If width A falls outside the specified range, perform the following steps to make an adjustment.
8. Select [ADJUST] using [▼] key, and press the OK key.
9. Using [▲/▼] key, select the appropriate setting value.
   If width A on the test pattern is longer than the specifications, decrease the setting value.
   If width A on the test pattern is shorter than the specifications, increase the setting value.
10. Press the OK key to validate the setting value.
11. If a single adjustment procedure does not successfully bring width A into the specified range, repeat steps 7 through 11.

4.4.25 CIS MAIN ZOOM

(1) Use

- To adjust variations in machining and installation accuracy of different scanner parts by varying the scanning zoom ratio in the main scanning direction.
- Used when the CIS module has been replaced. (After the CIS module has been adjusted for correct position)

(2) Specification

- Adjust so that the amount of error falls within ±1.0% of the length to be measured.
- Adjust so that the following specifications are met when the length of the scale is 200 mm.
- Zoom Ratio: Full size (x 1.00)
- Specifications: 200 ± 2.0 mm

(3) Default setting

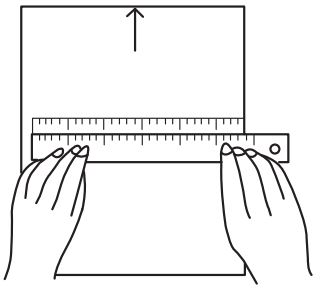
- 100 (0.0 mm)

(4) Setting range

- 85 (-1.5%) to 115 (+1.5%) (1 step: 0.1%)

(5) Procedure

1. Place a scale on the original glass in parallel with the original width scale and make a copy.



2. Measure the length of the scale on the copy. If the amount of error falls outside the specified range, perform the following steps to make an adjustment.
3. Enter adjust of the SERVICE MODE.
4. Select [CIS MAIN ZOOM] of [ADJUST].
5. Using [▲/▼] key, select the appropriate setting value.
   If the length on the copy is longer than the actual one, decrease the setting value.
   If the length on the copy is shorter than the actual one, increase the setting value.
6. Press the OK key to validate the setting value.
7. If a single adjustment procedure does not successfully bring the amount of error into the specified range, repeat steps 3 through 6.

4.4.26 CIS SUB ZOOM

(1) Use

- To adjust variations in machining and installation accuracy of different scanner parts by varying the scanning zoom ratio in the sub scanning direction.
- Used when the CIS module have been replaced.

(2) Specification

- Adjust so that the amount of error falls within ±1.0% of the length to be measured.
- Adjust so that the following specifications are met when the length of the scale is 300 mm.
- Zoom Ratio: Full size (x 1.00)
- Specifications: 300 ± 3.0 mm

(3) Default setting

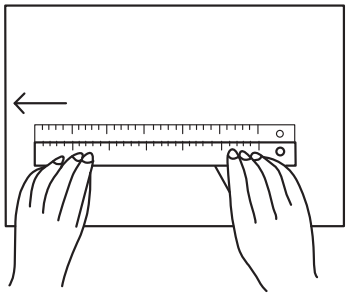
- 100

(4) Setting range

- 85 (-1.5%) to 115 (+1.5%) (1 step: 0.1%)

(5) Procedure

1. Place a scale so that it is at right angles to the original width scale, and copy it.



2. Measure the length of the scale on the copy. If the amount of error falls outside the specified range, perform the following steps to make an adjustment.
3. Enter adjust of the SERVICE MODE.
4. Select [CIS SUB ZOOM] of [ADJUST].
5. Using [▲/▼] key, select the appropriate setting value.
   If the length on the copy is longer than the actual one, decrease the setting value.
   If the length on the copy is shorter than the actual one, increase the setting value.
6. Press the OK key to validate the setting value.
7. If a single adjustment procedure does not successfully bring the amount of error into the specified range, repeat steps 3 through 6.

4.4.27 CIS MAIN REGIST

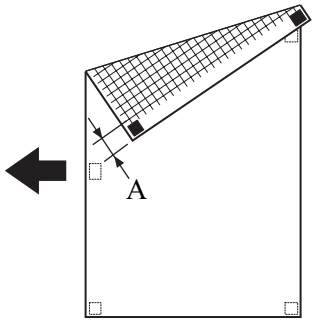
(1) Use

- To adjust variations in machining and installation accuracy of different IR parts by varying the starting position of image scanning in the main scanning direction.
- Used when the PH unit has been replaced. (After PRN MAIN, PRN SUB, and CIS MAIN ZOOM have been adjusted)

- Used when the CIS module has been replaced. (After the CIS module has been adjusted for correct position)

(2) Specification

- Adjust so that deviation between width A on the test pattern produced and that on the copy produced falls within the specified range.
- Specifications: 0 ± 2.0 mm



(3) Default setting

- 100

(4) Setting range

- 20 (-8.0 mm) to 180 (+8.0 mm) (1 step: 0.1 mm)

(5) Procedure

1. Load the tray 1 with A4 or Letter paper.
2. Enter function of the SERVICE MODE.
3. Select [FUNCTION] -> [PRN TEST PATTERN] -> [TRAY1] -> [PATTERN1].
   Then, press the OK key.
   This will produce a test pattern.
4. Place the test pattern produced in step 3 on the original glass and make a copy of it.
5. Place the test pattern (original) on top of the test copy and check for deviation in width A.
   If the deviation in width A falls outside the specified range, perform the following steps to make an adjustment.
6. Select [CIS MAIN REGIST] of [ADJUST].
7. Using [▲/▼] key, select the appropriate setting value.
   If the deviation is longer than the specifications, increase the setting value.
   If the deviation is shorter than the specifications, decrease the setting value.
8. Press the OK key to validate the setting value.
9. If a single adjustment procedure does not successfully bring the deviation into the specified range, repeat steps 5 through 7.

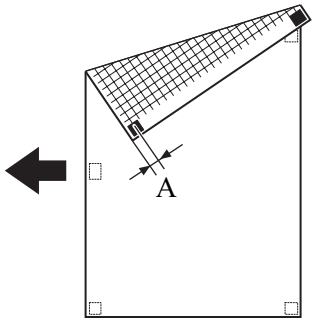
4.4.28 CIS SUB REGIST

(1) Use

- To adjust variations in machining and installation accuracy of different IR parts by varying the starting position of image scanning in the sub scanning direction.
- Used when the PH unit has been replaced. (After PRN MAIN, PRN SUB, and CIS MAIN ZOOM have been adjusted)
- Used when the CIS module has been replaced. (After the CIS module has been adjusted for correct position)

(2) Specification

- Adjust so that deviation between width A on the test pattern produced and that on the copy produced falls within the specified range.
- Specifications: 0 ± 1.5 mm



(3) Default setting

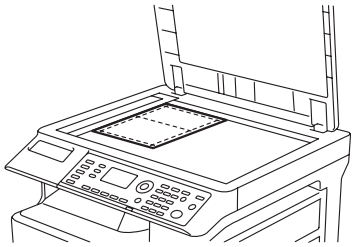
- 100

(4) Setting range

- 60 (-4.0 mm) to 140 (+4.0 mm) (1 step: 0.1 mm)

(5) Procedure

1. Load the tray 1 with A4 paper.
2. Enter function of the SERVICE MODE.
3. Select [FUNCTION] -> [PRN TEST PATTERN] -> [TRAY1] -> [PATTERN1].
   Then, press the OK key.
   This will produce a test pattern.
4. Place the test pattern produced in step 3 on the original glass and make a copy of it.



5. Place the test pattern (original) on top of the copy and check for deviation in width A.
   If the deviation in width A falls outside the specified range, perform the following steps to make an adjustment.
6. Select [CIS SUB REGIST] of [ADJUST].
7. Using [▲/▼] key, select the appropriate setting value.
   If the deviation is longer than the specifications, increase the setting value.
   If the deviation is shorter than the specifications, decrease the setting value.
8. Press the OK key to validate the setting value.
9. If a single adjustment procedure does not successfully bring the deviation into the specified range, repeat steps 5 through 7.

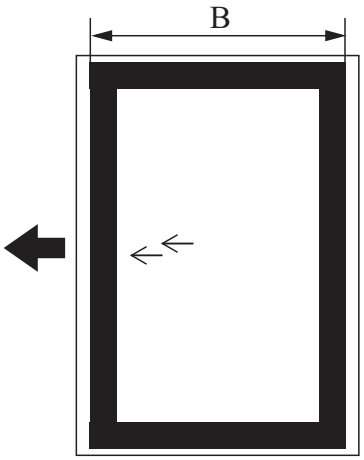
4.4.29 ADF SUB ZOOM

(1) Use

- To adjust variations in machining and installation accuracy of different parts by varying the scanning start position in the sub scanning direction when the Automatic Document Feeder is used.
- Use this feature at the ADF setup.

(2) Specification

- Adjust so that deviation between width B on the test pattern produced and that on the copy produced falls within the specified range.
- Specifications: 190 ± 1.0 mm (±0.5%)



(3) Default setting

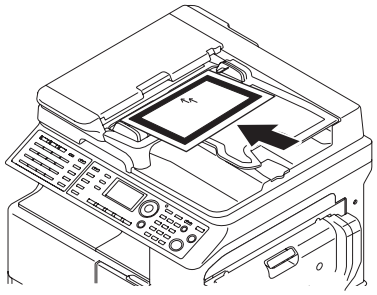
- 100

(4) Setting range

- 90(-1.0%) to 110(+1.0%) (1 step 0.1%)

(5) Procedure

1. Enter Adjust of the Service mode.
2. Select [ADJUST] and press the OK key.
3. Select [ADF SUB ZOOM] and press the OK key.
4. Place the test chart in the ADF.



5. Select [TEST COPY] and press the OK key.
   This will produce a test copy.
6. Measure the width B on the test copy using a scale and check whether the width is within the specified range.
   If the width B falls out of the specified range, perform the following steps to make an adjustment.
7. Select [ADJUST] and press the OK key.
8. Using [▲/▼] key, select the appropriate setting value.
   If the width B on the copy is longer than the specifications, decrease the setting value.
   If the width B on the copy is shorter than the specifications, increase the setting value.
9. Press the OK key to validate the setting value.
10. Make a copy of the test chart again and check the width B.
11. If the width B falls out of the specified range, repeat steps 4 to 10.

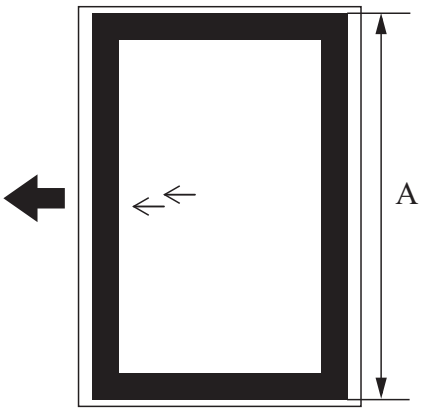
4.4.30 ADF MAIN ZOOM

(1) Use

- To adjust variations in machining and installation accuracy of different parts by varying the scanning start position in the main scanning direction when the Automatic Document Feeder is used.
- Use this feature at the ADF setup.

(2) Specification

- Adjust so that deviation between width A on the test copy produced and that on the copy produced falls within the specified range.
- Specifications: 287 ± 1.4 mm (±0.5%)



(3) Default setting

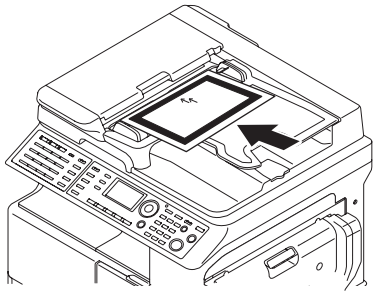
- 100

(4) Setting range

- 90(-1.0%) to 110(+1.0%) (1 step 0.1%)

(5) Procedure

1. Enter Adjust of the Service mode.
2. Select [ADJUST] and press the OK key.
3. Select [ADF MAIN ZOOM] and press the OK key.
4. Place the test chart in the ADF.



5. Select [TEST COPY] and press the OK key.
   This will produce a test copy.
6. Measure the width A on the test copy using a scale and check whether the width is within the specified range.
   If the width A falls out of the specified range, perform the following steps to make an adjustment.
7. Select [ADJUST] and press the OK key.
8. Using [▲/▼] key, select the appropriate setting value.
   If the width A on the copy is longer than the specifications, decrease the setting value.
   If the width A on the copy is shorter than the specifications, increase the setting value.
9. Press the OK key to validate the setting value.
10. Make a copy of the test chart again and check the width A.
11. If the width A falls out of the specified range, repeat steps 4 to 10.

4.4.31 ADF SUB REGIST1

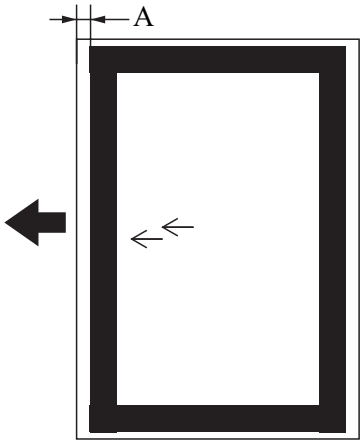
(1) Use

- To adjust variations in machining and installation accuracy of different parts by varying the scanning start position in the sub scanning direction when the Automatic Document Feeder is used. (1-side mode)
  NOTE
  - **This adjustment should be made after the ADF Sub Zoom adjustment.**

- Use this feature at the ADF setup.

(2) Specification

- Make an adjustment so that the width A on the test copy is within the specified range.
- Specifications: 10 ± 2.0 mm



(3) Default setting

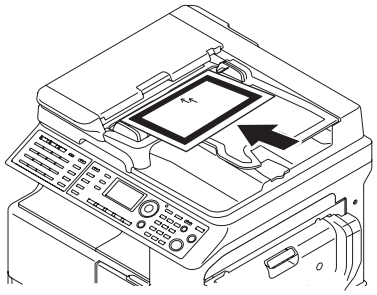
- 100

(4) Setting range

- 50(-5.0%) to 150(+5.0%) (1 step 0.1mm)

(5) Procedure

1. Enter Adjust of the Service mode.
2. Select [ADJUST] and press the OK key.
3. Select [ADF SUB REGIST1] and press the OK key.
4. Place the test chart in the ADF.



5. Select [TEST COPY] and press the OK key.
6. Measure the width A on the test copy using a scale and check whether the width is within the specified range.
   If the width A falls out of the specified range, perform the following steps to make an adjustment.
7. Select [ADJUST] and press the OK key.
8. Using [▲/▼] key, select the appropriate setting value.
   If the width A on the test copy is longer than that on the test chart, increase the setting value.
9. Press the OK key to validate the setting value.
10. Make a copy of the test chart again and check the width A.
11. If the width B falls out of the specified range, repeat steps 4 to 10.

4.4.32 ADF SUB REGIST2

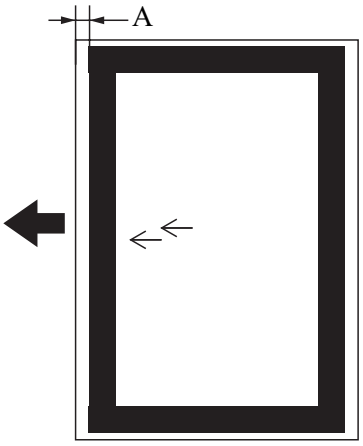
(1) Use

- To adjust variations in machining and installation accuracy of different parts by varying the scanning start position in the sub scanning direction when the Automatic Document Feeder is used. (1-side mode)
  NOTE
  - **This adjustment should be made after the ADF Sub Zoom adjustment.**

- Use this feature at the ADF setup.

(2) Specification

- Make an adjustment so that the width A on the test copy is within the specified range.
- Specifications: 10 ± 2.0 mm



(3) Default setting

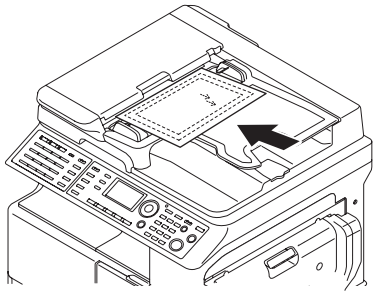
- 100

(4) Setting range

- 50(-5.0%) to 150(+5.0%) (1 step 0.1mm)

(5) Procedure

1. Enter Adjust of the Service mode.
2. Select [ADJUST] and press the OK key.
3. Select [ADF SUB REGIST2] and press the OK key.
4. Place the test chart in the ADF.
   NOTE
   - **Place the test chart in the ADF with its front side facing down.**



5. Select [TEST COPY] and press the OK key.
6. Measure the width A on the test copy using a scale and check whether the width is within the specified range.
   If the width A falls out of the specified range, perform the following steps to make an adjustment.
7. Select [ADJUST] and press the OK key.
8. Using [▲/▼] key, select the appropriate setting value.
   If the width A on the test copy is longer than that on the test chart, increase the setting value.
9. Press the OK key to validate the setting value.
10. Make a copy of the test chart again and check the width A.
11. If the width A falls out of the specified range, repeat steps 4 to 10.

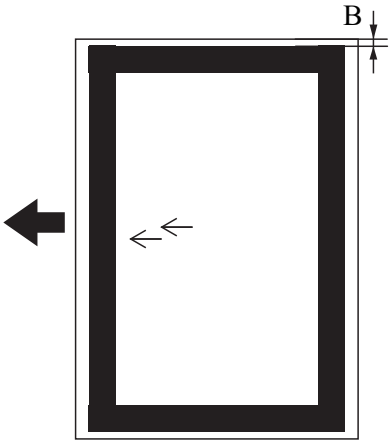
4.4.33 ADF MAIN REGIST1

(1) Use

- To adjust variations in machining and installation accuracy of different parts by varying the scanning start position in the main scanning direction when the Automatic Document Feeder is used. (1-side mode)
- Use this feature at the ADF setup.

(2) Specification

- Adjust so that deviation between width B on the test pattern produced and that on the copy produced falls within the specified range.
- Specifications: 5 ± 2.0 mm



(3) Default setting

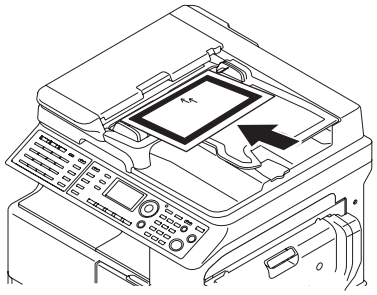
- 100

(4) Setting range

- 50(-5.0mm) to 150(+5.0mm) (1 step 0.1mm)

(5) Procedure

1. Enter Adjust of the Service mode.
2. Select [ADJUST] and press the OK key.
3. Select [ADF MAIN REGIST1] and press the OK key.
4. Place the test chart in the ADF.



5. Select [TEST COPY] and press the OK key.
6. Measure the width B on the test copy using a scale and check whether the width is within the specified range.
   If the width B falls out of the specified range, perform the following steps to make an adjustment.
7. Select [ADJUST] and press the OK key.
8. Using [▲/▼] key, select the appropriate setting value.
   If the width B on the test copy is longer than that on the test chart, decrease the setting value.
9. Press the OK key to validate the setting value.
10. Make a copy of the test chart again and check the width B.
11. If the width B falls out of the specified range, repeat steps 4 to 10.

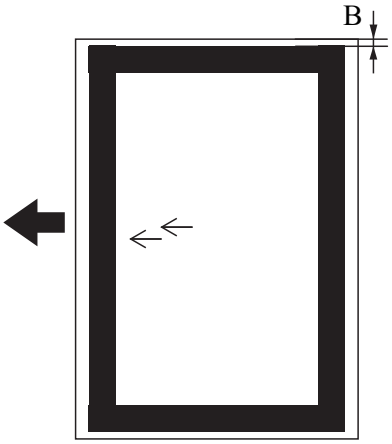
4.4.34 ADF MAIN REGIST2

(1) Use

- To adjust variations in machining and installation accuracy of different parts by varying the scanning start position in the main scanning direction when the Automatic Document Feeder is used. (2-side mode)
- Use this feature at the ADF setup.

(2) Specification

- Adjust so that deviation between width B on the test pattern produced and that on the copy produced falls within the specified range.
- Specifications: 5 ± 2.0 mm



(3) Default setting

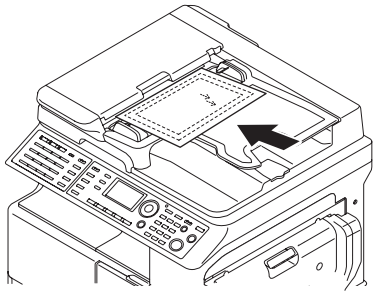
- 100

(4) Setting range

- 50(-5.0mm) to 150(+5.0mm) (1 step 0.1mm)

(5) Procedure

1. Enter Adjust of the Service mode.
2. Select [ADJUST] and press the OK key.
3. Select [ADF MAIN REGIST2] and press the OK key.
4. Place the test chart in the ADF.
   NOTE
   - **Place the test chart in the ADF with its front side facing down.**



5. Select [TEST COPY] and press the OK key.
6. Measure the width B on the test copy using a scale and check whether the width is within the specified range.
   If the width B falls out of the specified range, perform the following steps to make an adjustment.
7. Select [ADJUST] and press the OK key.
8. Using [▲/▼] key, select the appropriate setting value.
   If the width B on the test copy is longer than that on the test chart, decrease the setting value.
9. Press the OK key to validate the setting value.
10. Make a copy of the test chart again and check the width B.
11. If the width B falls out of the specified range, repeat steps 4 to 10.

4.4.35 ADF REG. LOOP1

(1) Use

- To adjust the length of loop formed in the original before the ADF registration roller. (1-side mode)
- When a skew feed, fold, or misfeed of the original occurs. (1-side mode)

(2) Default setting

- 100

(3) Setting range

- 90 to 105

(4) Procedure

1. Enter Adjust of the Service mode.
2. Select [ADJUST] and press the OK key.
3. Select [ADF REG. LOOP1] and press the OK key.
4. Using [▲/▼] key, select the appropriate setting value.
5. Pres the OK key to validate the setting.

4.4.36 ADF REG. LOOP2

(1) Use

- To adjust the length of loop formed in the original before the ADF registration roller. (2-side mode)
- When a skew feed, fold, or misfeed of the original occurs. (2-side mode)

(2) Default setting

- 100

(3) Setting range

- 90 to 105

(4) Procedure

1. Enter Adjust of the Service mode.
2. Select [ADJUST] and press the OK key.
3. Select [ADF REG. LOOP2] and press the OK key.
4. Using [▲/▼] key, select the appropriate setting value.
5. Pres the OK key to validate the setting.

4.4.37 TCR GAIN

(1) Use

- To manually adjust the TCR sensor voltage.
- To set the TCR sensor control voltage again if the voltage determined by TCR AUTO ADJUST is cleared due to the replacement of the MFP control board or memory clear.

(2) Default setting

- 140 (3.624 V).

(3) Setting range

- 90 (2.329 V) to 190 (4.917 V)

(4) Procedure

- The adjusted value of the TCR auto adjust is the setting value.

4.4.38 MODEL SETTING

NOTE

- **Never change this setting.**
- **If it is changed, the Tech. Rep. call (C03FF) will appear.**
- Default setting depend on the marketing area setting.
  23 ppm/21 ppm/19 ppm

4.5 COUNTER

4.5.1 TOTAL COUNTER

(1) Use

- To display the total count value of the selected mode.
  COPY: Total count value in copy mode
  COPY DUP.: Total count value in duplex copy mode
  PRINT: Total count value in PC print mode
  PRINT DUP.: Total count value in duplex PC print mode.
- To check total count value in each mode.
- Counting method is different depending on the settings of [SECURITY], [TOTAL COUNTER] in the service mode.

4.5.2 SIZE COUNTER

(1) Use

- To display the count of the size counter.
- Paper sizes on which counting can be made are different depending on the setting of [SECURITY] , [SIZE COUNTER] in the service mode.
- To clear the count, use [CLEAR DATA] of the SERVICE MODE.

4.5.3 PM COUNTER

(1) Use

- To display the count of the number of times each of different parts of the machine has been used.
- This function is used at the time of maintenance work for the main body and options.
- The count should be cleared when the corresponding PM part is replaced.

(2) Procedure

BYPASS: Each time a page is printed with paper from the bypass tray, the counter increases by one.
TRAY1: Each time a page is printed with paper from the tray 1, the counter increases by one.
TRAY2: Each time a page is printed with paper from the tray 2, the counter increases by one.
TRAY3: Each time a page is printed with paper from the tray 3, the counter increases by one.
TRAY4: Each time a page is printed with paper from the tray 4, the counter increases by one.
TRAY5: Each time a page is printed with paper from the tray 5, the counter increases by one.
ADF FEED: Each time a page is printed with paper from the ADF feed, the counter increases by one.
ADF REVERSE: Each time a page is printed with paper from the ADF reverse, the counter increases by one.
IR: Each time a page is copied with the use of the scanner, the counter increases by one.
OZONE: If the paper length in the sub scanning direction is 216 mm or less, each time a page is printed, the counter increases by one. If the paper length in the sub scanning direction is over 216 mm, each time a page is printed, the counter increases by two.
FUSING: If the paper length in the sub scanning direction is 216 mm or less, each time a page is printed, the counter increases by one. If the paper length in the sub scanning direction is over 216 mm, each time a page is printed, the counter increases by two.
TRANSFER: If the paper length in the sub scanning direction is 216 mm or less, each time a page is printed, the counter increases by one. If the paper length in the sub scanning direction is over 216 mm, each time a page is printed, the counter increases by two.

- To clear the count, use [CLEAR DATA] of the SERVICE MODE.

4.5.4 MAINTENANCE COUNT.

(1) Use

- To display the count of the maintenance counter.
- When the counter reaches "0", maintenance call M1 or the service call will appear, according to the setting on MAINTENANCE COUNT. of SERVICE'S CHOISE.
- To clear the count, use [CLEAR DATA]of the SERVICE MODE.

4.5.5 SUPPLIES COUNTER

(1) Use

- To display the count of the supplies life counter.
- To clear the count, use [CLEAR DATA]of the SERVICE MODE.

(2) Procedure

I/U Life: The value that corresponds to the amount of time for which the PC drum has rotated is calculated and the value is subtracted from the initial counter value of 55,000.

PH Start: Each time the polygon motor is started, the counter increases by one.
PH Turn: The amount of time for which the polygon motor has rotated is monitored and the counter increases by one for every given period of time.

4.5.6 APPLICATIN COUNT.

(1) Use

- To display the count of the number of sheets of paper used for each of different applications.
  COPY PRINT: Number of copies made
  FAX RX PRN.: Number of sheets printed in fax reception jobs
  REPORT PRN.: Number of reports printed
  PC PRINT: Number of printed pages produced from PC
  FAX TX: Number of times that a fax is sent
  MAIL TX: Number of times that an email is sent
- To clear the count, use [CLEAR DATA]of the SERVICE MODE.

4.5.7 SCAN COUNTER

(1) Use

- To display the count of the scan counter.
  SCAN: Total count value in scan mode.
  COLOR SCAN: Total count value in color scan mode.
- The number of scan motions carried out for copying is not counted.
- To clear the count, use [CLEAR DATA] of the SERVICE MODE.

4.5.8 PAPER SIZE COUNTER

(1) Use

- To display the count of the number of sheets of paper used for each following size and type.
  A3/A4/A4 SEF/A4 LEF/B5/A5/FLS/11 x 17/LEGAL/LETTER SEF/LETTER LEF/INVOICE/OTHER/PLAIN/RECYCLE/CARD1/CARD2/P 2-SIDE/R 2-SIDE/C1 2-SIDE/C2 2-SIDE/OHP/ENVELOPE/SPECIAL/1-SIDE
  NOTE
  - **8K size is counted as B4.**
  - **16K size is counted as B5.**
  - **Custom size is counted as OTHER.**
- To clear the count, use [CLEAR DATA]of the SERVICE MODE.

4.5.9 MISFEED COUNTER

(1) Use

- To display the count of the number of paper misfeeds that have occurred at different parts of the machine.
  BYPASS/TRAY1/TRAY2/TRAY3/TRAY4/TRAY5/PICK-UP/TSPT./DUP.(ENTRANCE)/DUP.(FEED)/FUSER/SEPARATOR/ADF(PICK-UP)/ADF(TSPT.)/ADF(EXIT)/ADF(REVERSE)
  BYPASS/TRAY1/FUSER/SEPARATOR
- To clear the count, use [CLEAR DATA]of the SERVICE MODE.

4.5.10 TROUBLE COUNTER

(1) Use

- To display the count of the number of malfunctions detected according to the malfunction code.
- To clear the count, use [CLEAR DATA]of the SERVICE MODE.

4.6 DISPLAY

4.6.1 TONER DENSITY

(1) Use

- To display the current output value of TCR sensor.
- Refer to the following table for actual T/C values.
- Used to check the T/C ratio when the image density is defective.

Display	Detail
|	Toner empty condition
40 (T/C value: 4%)	
|	Toner near empty condition
60 (T/C value: 6%)	normal
|	

4.6.2 FUSER TEMPERATURE

(1) Use

- To display the temperature of the fusing unit (thermistor/1 and thermistor/2).

4.6.3 TRANSCRIPT CURRENT

(1) Use

- To display the transfer current output value (μA).

4.6.4 TCR GAIN

(1) Use

- To display the TCR gain value determined by TCR AUTO ADJUST.

<Conversion formula of TCR gain value to voltage>
TCR control voltage (V) =3.3 x 2 x [TCR gain value] / 256

4.6.5 PROCESS CONTROL

(1) Use

- To display the Vg (Grid V.) and Vb (Bias V.) values.

4.6.6 ENVIRONMENTAL

- To display the current usage environment (temperature, humidity, absolute humidity).

4.6.7 MAIN F/W VER.

(1) Use

- To display the main firmware (MFPB) version information.

4.6.8 ENGINE F/W VER.

(1) Use

- To display the engine firmware (PRCB) version information.

4.6.9 PCL F/W VER.

(1) Use

- To display the PCL firmware version information.

NOTE

- **This is displayed when the PCL/NIC board is installed.**

4.6.10 NIC F/W VER.

(1) Use

- To display the NIC firmware version information.

NOTE

- **This is displayed when the NIC board is installed.**

4.6.11 MAIN RAM SIZE

(1) Use

- To display the main memory size.

4.6.12 SERIAL NO.

(1) Use

- To display the serial number of the machine.

4.6.13 CUSTOMER ID

(1) Use

- To display the customer ID of the machine.

4.7 FUNCTION

4.7.1 PAPER FEED TEST

(1) Use

- To check for correct paper passage of the paper feed and transport system by letting the machine consecutively take up and feed paper without involving actual printing action.
- Here are the details of operation involved in the paper passage motion.
  The scanner does not make any scan motion.
  Paper is fed until the corresponding paper source runs out of paper.
  No counters are activated. (Except PM counter, maintenance counter, supplies counter)
  It cannot be operated at the time of warming up.
  A printing paper source can select on the screen of the function mode.
- Used when a paper misfeed occurs

(2) Procedure

- Select the paper source.
  TRAY1/TRAY2/TRAY3/TRAY4/TRAY5
- Pressing the OK key will start the check.

- Press the Stop key to stop the paper feed test.

4.7.2 PROCESS CHECK

- HV output (for factory setting only) *Should not be used

4.7.3 TCR AUTO ADJUST

(1) Use

1. To make an automatic adjustment of the TCR sensor.
2. Used at setup.
3. Used when developer has been changed.
4. Used when IU has been replaced.

(2) Procedure

NOTE

- **Before starting this adjustment, the toner bottle must be removed.**

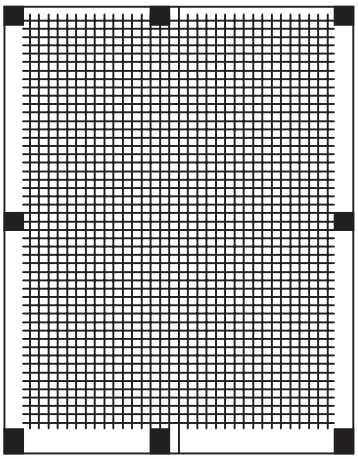
1. Press the OK key to start the adjustment.
2. The adjustment sequence automatically stops as soon as the adjustment is made, and TCR gain value is displayed.
   <Conversion formula of TCR gain value to voltage>
   TCR control voltage (V) =3.3 x 2 x [TCR gain value] / 256

4.7.4 PRN TEST PATTERN

(1) PATTERN1

(a) Use

- To produce a test pattern for image adjustments.
- When skew, registration, or zoom ratio has been adjusted.
- Here are the details of operation involved in the paper passage motion.
  The scanner does not make any scan motion.
  No counters are activated. (Except PM counter, maintenance counter, supplies counter)
  It cannot be operated at the time of warming up.
  A printing paper source can select on the screen of the function mode.
  The writing to a photo conductor is made as A3 size to every paper.
  The erasing of circumference of paper is effective. (Leading edge/trailing edge/vertical edge)



(b) Procedure

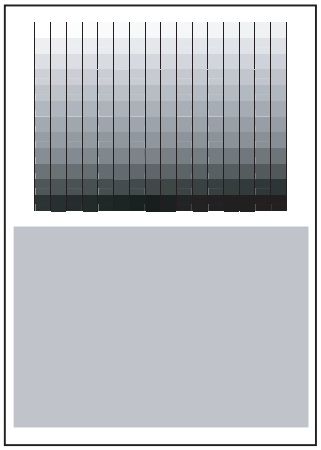
1. Load the A3 or 11 x 17 paper, and select the paper source.
   NOTE
   - **To produce a test pattern, be sure to use the paper of A3 or 11 x 17 sizes.**
     Using paper that is smaller than A3 or 11 x 17 may cause smear on the back side of paper ejected on the output tray. If this problem occurs, feed several sheets of paper through the machine to resolve the problem.
2. Select the type of test pattern.
3. Press the OK key to let the machine produce the test pattern.

(2) PATTERN2

(a) Use

- To produce halftone and gradation test patterns.
- Used when checking for uneven density or uneven pitch.
- Used when checking for gradation reproducibility.
- Here are the details of operation involved in the paper passage motion.
  The scanner does not make any scan motion.
  No counters are activated. (Except PM counter, maintenance counter, supplies counter)
  It cannot be operated at the time of warming up.

A printing paper source can select on the screen of the function mode.
The writing to a photo conductor is made as A3 size to every paper.
The erasing of circumference of paper is effective. (Leading edge/trailing edge/vertical edge)



(b) Procedure

1. Load the A3 or 11 x 17 paper, and select the paper source.
   NOTE
   - **To produce a test pattern, be sure to use the paper of A3 or 11 x 17 sizes.**
     Using paper that is smaller than A3 or 11 x 17 may cause smear on the back side of paper ejected on the output tray. If this problem occurs, feed several sheets of paper through the machine to resolve the problem.
2. Select the type of test pattern.
3. Press the OK key to let the machine produce the test pattern.

4.7.5 ADF FEED TEST

(1) Use

- To check for correct paper passage of the paper take-up and transport system in the ADF alone as a single unit.
- Here are the details of operation involved in the paper passage motion.
  - The Scanner does not make any scan motion.
  - Paper passage operation continues until all pages of the document loaded in the unit have been fed in.
- When a paper misfeed of originals occurs

(2) Procedure

1. Call the SERVICE MODE to the screen.
2. Select [FUNCTION], and press the OK key.
3. Select [ADF FEED TEST], and press the OK key.
4. Load paper in the ADF.
5. Use [▲/▼] key to select a scanning Mode, and press the Start key to start the ADF feed test.
   Press the Stop key to stop the ADF feed test.
   Scanning Mode
   - BW 300dpi, BW 600dpi, COLOR 150dpi, COLOR 300dpi
   - 1-SIDE, 2-SIDE

4.7.6 COPY ADF GLASS

(1) Use

- To check for scratches and dirt on the Original Scanning Glass.
- When a dirty image occurs

(2) Procedure

1. Call the SERVICE MODE to the screen.
2. Select [FUNCTION], and press the OK key.
3. Select [COPY ADF GLASS].
4. Press the OK key to start the Copy ADF Glass Area test.
5. The copier produces two copy samples.
   NOTE
   - **If the image on the copy contains stripes, clean or replace the original scanning glass.**

4.7.7 UPLOAD F/W

- It will be displayed only when the optional FAX kit FK-510 is mounted.

(1) Use

- Download firmware from this machine to remote side, after setup of remote side location.
- Machine will dial automatically and copy the firmware to remote side machine.

(2) Procedure

1. Call the SERVICE MODE to the display.
2. Select [FUNCTION], and press the OK key.
3. Select [UPLOAD F/W], and press the OK key.
4. Enter the remote side destination, and press the ▼ key.
5. Enter the password (4-digits), and press the OK key.
6. Press the Start key.

4.7.8 FAX RES. COPY TEST

- It will be displayed only when the optional FAX kit FK-510 is mounted.

(1) Use

- Print TX page of fax operation, make a copy test of the fax resolution.
- To check whether or not the encoding/decoding process is correct.

(2) Procedure

(a) CIS.FAX

1. Call the SERVICE MODE to the display.
2. Select [FUNCTION], and press the OK key.
3. Select [FAX RES. COPY TEST], and press the OK key.
4. Select [CIS.FAX], and press the OK key.
5. Select [AUTO DETECTION], and press the OK key.
   Or select [MANUAL: XX], and press the ► key. Then, select the scan size and press the OK key.
6. Press the OK key to scan the next original and the Back key to finish the scanning.
7. Start the scanning.

(b) ADF.FAX

1. Call the SERVICE MODE to the display.
2. Select [FUNCTION], and press the OK key.
3. Select [FAX RES. COPY TEST], and press the OK key.
4. Select [ADF.FAX], and press the ► key.
5. Select [1-SIDE] or [2-SIDE], and press the OK key.
6. Set the original on ADF, and press the OK key.
7. Start the scanning.

4.7.9 SCAN TEST

(1) Use

- To check that the exposure lamp turns ON properly and the scanner moves properly.
- Used when the scan motion is faulty.

(2) Procedure

1. Press the OK key to start the scan test.
2. Pressing the Stop key will stop the scan test.

4.7.10 TONER SUPPLY

(1) Use

- 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.

(2) Procedure

1. Press the OK key to start the toner supply function.
2. When the toner density returns to normal or a given period of time elapses after the toner supply is started, the machine automatically stops supplying toner.

4.8 SOFT SWITCH

- It will be displayed only when the optional FAX kit FK-510 is mounted.
- For detail of soft switch, refer to "I.5.1 Description".

Key definition for soft switch

Key	Definition
▼	Soft switch number forward.
▲	Soft switch number backward.
►	Bit No. forward.
◄	Bit No. backward.
1 or 0	Bit No. is changed.
OK	Update soft switch by current setting.
BACK	Exit soft switch setting.

4.9 REPORT

- It will be displayed only when the optional FAX kit FK-510 is mounted.

4.9.1 SERVICE DATA LIST

(1) Use

- Print SERVICE DATA LIST and ERROR LOG HISTORY LIST.
- To check the service data list and the error log history.
- SERVICE DATA LIST includes the following items:
  - MARKETING AREA
  - SHIPMENT DESTINATION
  - SOFT SWITCH
  - COMMUNICATION HISTORY & COUNTER
  - MAILBOX ID & PW
  - RELAY BOX ID & PW
  - ACCOUNT NUMBER
  - ADJUST
  - RX IN MEMORY
  - ADMIN. PASSWORD
  - TOTAL COUNTER COUNT MODE
  - MAIN RAM SIZE
  - ROM ID
- ERROR LOG HISTORY LIST includes the following items (When there is FAX ERROR LOG):

Index	Index number from 0000 to 9999
Error	Error code number
Maker	NSF frame maker code
Tele.	Remote side or TX side telephone number for that transaction

(2) Procedure

1. Call the SERVICE MODE to the display.
2. Select [REPORT], and press the OK key.
3. Select [SERVICE DATA LIST], press the OK key.

4.9.2 ERROR CODE LIST

(1) Use

- Print ERROR CODE LIST.
- To print the error code and error occurrence time.

(2) Procedure

1. Call the SERVICE MODE to the display.
2. Select [REPORT], and press the OK key.
3. Select [ERROR CODE LIST], and press the OK key.

4.9.3 T.30 PROTOCOL LIST

(1) Use

- Print PROTOCOL MONITOR REPORT.
- Print out T.30 or V8 protocol after communication.

SESSION	Session number
FUNCTION	Function name
DESTINATION STATION	Destination Name/Tel. No.
DATE/TIME	Communication Date & Time
PAGE	Total page number for this session
DURATION	Communication using time
MODE	Communication speed and ECM mode
RESULT	Communication result
RING	Recording ring ON/OFF time by “ms” Only for RX function and record last 16 time
TX	T.30 command sent by local fax
RX	T.30 command received from remote fax
DATA	T.30 frame that include address & control & data

(2) Procedure

1. Call the SERVICE MODE to the display.
2. Select [REPORT], and press the OK key.
3. Select [T.30 PROTOCOL LIST], and press the OK key.

4.9.4 SETTING DATA LIST

(1) Use

- To print a list of setting values, adjustment values, counter values and others.
- Used at the end of setup or when a malfunction occurs.
- The following items are recorded;

UTILITY	MACHINE SETTING/Paper Source Setup/CUSTOM SIZE MEMORY/Copy Setting1/Copy Setting2/Dial Registration/Scan Setting/Fax TX Operation/Reporting/Admin. Management/Fax Registration/Fax RX Operation
SERVICE MODE	SERVICE'S CHOICE/ADJUST/COUNTER/ DISPLAY

(2) Procedure

1. Call the SERVICE MODE to the display.
2. Select [REPORT], and press the OK key.
3. Select [SETTING DATA LIST], and press the OK key.

4.10 ADMIN. REGISTRATION

4.10.1 Use

- To set or change the administrator No.
- Use this feature to change the administrator No.
- As a new administrator No. can be set without entering the current administrator No., use this feature when the administrator forgets the administrator No.

4.10.2 Default setting

- “000000”

4.10.3 Procedure

1. Call the SERVICE MODE to the screen.
2. Select [ADMIN. REGISTRATION], and press the OK key.
3. Use the 10-Key Pad to type in the desired type the 6-digit administrator number.
4. Press the OK key to register the administrator number.

4.11 FIXED ZOOM CHANGE

4.11.1 Use

- FIXED ZOOM CHANGE is used to change the fixed zoom ratios.

4.11.2 Procedure

1. Select the particular fixed zoom ratio to be changed.
2. Using the [▲/▼], enter the desired fixed zoom ratio.

4.11.3 Default values and setting range of fixed zoom ratios

(1) Metric

Setting name	Default fixed zoom ratio	Setting range
REDUCTION2	70%	51% to 70%
REDUCTION1	81%	71% to 99%
EXPANSION1	115%	101% to 140%
EXPANSION2	141%	141% to 199%

(2) Taiwan

Setting name	Default fixed zoom ratio	Setting range
REDUCTION2	70%	51% to 70%
REDUCTION1	81%	71% to 99%
EXPANSION1	122%	101% to 140%
EXPANSION2	141%	141% to 199%

(3) Inch

Setting name	Default fixed zoom ratio	Setting range
REDUCTION2	64%	51% to 64%
REDUCTION1	78%	65% to 99%
EXPANSION1	121%	101% to 128%
EXPANSION2	129%	129% to 199%

(4) China

Setting name	Default fixed zoom ratio	Setting range

REDUCTION2	70%	51% to 70%
REDUCTION1	81%	71% to 99%
EXPANSION1	115%	101% to 140%
EXPANSION2	141%	141% to 199%

(5) Latin America (Metric)

Setting name	Default fixed zoom ratio	Setting range
REDUCTION2	70%	51% to 70%
REDUCTION1	78%	71% to 99%
EXPANSION1	115%	101% to 140%
EXPANSION2	141%	141% to 199%

(6) Latin America (Inch)

Setting name	Default fixed zoom ratio	Setting range
REDUCTION2	64%	51% to 64%
REDUCTION1	78%	65% to 99%
EXPANSION1	121%	101% to 128%
EXPANSION2	129%	129% to 199%

4.12 FACTORY TEST

4.12.1 SIGNAL TEST

- This test is for factory adjustment only and should not be used.

4.12.2 RELAY TEST

- This test is for factory adjustment only and should not be used.

4.12.3 DIAL TEST

- This test is for factory adjustment only and should not be used.

4.12.4 VOLUME TEST

- This test is for factory adjustment only and should not be used.

4.12.5 PANEL TEST

(1) Use

- To test the LCD, LEDs and switches on the operation panel for operation.
- When the machine is set into this mode, all LEDs light up 5 sec. and the message "PANEL SWITCH TEST PRESS ANY SWITCH!" appears on the LCD, indicating that the machine has entered the switch test standby state.
- Pressing a key on the operation panel in the switch test standby state causes the LCD to show the name of key pressed.
- Press the Stop key twice to return to the standby screen.

4.12.6 RAM TEST

(1) Use

- Write or read data to/from RAM memory to make sure of normal operation.
- When test finishes and everything is okay, it will display "RAM CHIP IS OK" and automatically clear DRAM. After DRAM clear finish, LCD will display "DRAM IS CLEAR!."

(2) Procedure

- Pressing the OK key will start the check.
- After approx. 30 seconds, "RAM CHIP IS OK" will appear.

4.13 CLEAR DATA

4.13.1 DRAM CLEAR

- It will be displayed only when the optional FAX kit FK-510 is mounted.

(1) Use

- Clear all data in the memory file and free all memory to 100%, the user data are not effect.
- But only clear DRAM data on MFP board not include DRAM data on NIC and Flash ROM backup image data.

NOTE

- **Perform the main switch OFF/ON after Memory clear.**
- **Not include DRAM data on NIC board.**

4.13.2 FLASH ROM CLEAR

- To return the settings of the following functions to their defaults by clearing their current settings.
- The items below are cleared (initialized).

NOTE
- **Before performing [FLASH ROM CLEAR], record the setting values that are initialized by this operation.**
- **To record the setting values, it is helpful to create and print reports and lists.**
- **As the reports and lists do not include some setting values, be sure to record them separately.**
- **After performing [FLASH ROM CLEAR], re-entering data is required based on the recorded setting values.**

4.13.3 MEMORY CLEAR

(1) Use

- To clear the setting values listed on the right, resetting them to the default values.
- The following items are initialized;
  UTILITY
  SERVICE MODE - SERVICE'S CHOICE
  SERVICE MODE - ADJUST
  SERVICE MODE -ADMINISTRATOR NUMBER REGISTRATION
  SERVICE MODE - FIXED ZOOM CHANGE
  SERVICE MODE - SECURITY
  Copy program registration.

NOTE
- **After memory clear has been executed, be sure to turn OFF and ON the power switch.**

(2) Procedure

1. Select [MEMORY CLEAR], and press the OK key.
2. Select [YES], and press the OK key.

NOTE
- **After MEMORY CLEAR has been executed, be sure to turn OFF and ON the power switch.**

4.13.4 TORTAL CLEAR

(1) Use

- To clear the all electronic counters.
- The following counters are cleared;
  SIZE COUNTER
  PM COUNTER
  MAINTENANCE COUNTER
  SUPPLIES COUNTER
  APPLICATION COUNT.
  SCAN COUNTER
  PAPER SIZE COUNTER
  MISFEED COUNTER
  TROUBLE COUNTER

NOTE
- **When turning OFF the power switch after clearing the data, make sure that the message "ACCEPTED" is displayed on the control panel.**
- **After memory clear has been executed, be sure to turn OFF and ON the power switch.**

4.13.5 PM COUNTER

(1) Use

- To clear each of the counts of the PM counter.
  - BYPASS
  - TRAY 1
  - TRAY 2
  - TRAY 3
  - TRAY 4
  - TRAY 5
  - ADF FEED
  - ADF REVERSE
  - IR
  - OZONE
  - FUSING
  - TRANSFER

NOTE
- **When turning OFF the power switch after clearing the data, make sure that the message "ACCEPTED" is displayed on the control panel.**
- **After memory clear has been executed, be sure to turn OFF and ON the power switch.**

4.13.6 MAINTENANCE COUNT.

(1) Use

- To clear the count of the maintenance counter.

NOTE
- **When turning OFF the power switch after clearing the data, make sure that the message "ACCEPTED" is displayed on the control panel.**
- **After memory clear has been executed, be sure to turn OFF and ON the power switch.**

4.13.7 SUPPLIES COUNTER

(1) Use

- To clear the count of the supplies life counter.
  - I/U LIFE : Clear the counter when replacing the imaging unit.
  - PH START : Clear the counter when replacing the PH unit.
  - PH TURN : Clear the counter when replacing the PH unit.

NOTE

- **When turning OFF the power switch after clearing the data, make sure that the message "ACCEPTED" is displayed on the control panel.**
- **After memory clear has been executed, be sure to turn OFF and ON the power switch.**

4.13.8 APPLICATION COUNT.

(1) Use

- To clear each of the counts of the application counter.
  - COPY PRINT
  - FAX RX PRT.
  - REPORT PRT.
  - PC PRINT
  - FAX TX
  - MAIL TX

NOTE

- **When turning OFF the power switch after clearing the data, make sure that the message "ACCEPTED" is displayed on the control panel.**
- **After memory clear has been executed, be sure to turn OFF and ON the power switch.**

4.13.9 SCAN COUNTER

(1) Use

- To clear the count of the scan counter.
  - SCAN
  - COLOR SCAN

NOTE

- **When turning OFF the power switch after clearing the data, make sure that the message "ACCEPTED" is displayed on the control panel.**
- **After memory clear has been executed, be sure to turn OFF and ON the power switch.**

4.13.10 PAPER SIZE COUNTER

(1) Use

- To clear each of the counts of the paper size counter.

NOTE

- **When turning OFF the power switch after clearing the data, make sure that the message "ACCEPTED" is displayed on the control panel.**
- **After memory clear has been executed, be sure to turn OFF and ON the power switch.**

4.13.11 MISFEED COUNTER

(1) Use

- To clear each of the counts of the misfeed counter.

NOTE

- **When turning OFF the power switch after clearing the data, make sure that the message "ACCEPTED" is displayed on the control panel.**
- **After memory clear has been executed, be sure to turn OFF and ON the power switch.**

4.13.12 TROUBLE COUNTER

(1) Use

- To clear each of the counts of the trouble counter.

NOTE

- **When turning OFF the power switch after clearing the data, make sure that the message "ACCEPTED" is displayed on the control panel.**
- **After memory clear has been executed, be sure to turn OFF and ON the power switch.**

4.14 SECURITY

4.14.1 List of SECURITY mode

SECURITY		Ref. page
SECURITY	TOTAL COUNTER COUNT	I.4.14.3 TOTAL COUNTER
	SIZE COUNTER COUNT	I.4.14.4 SIZE COUNTER
	PLUG-IN COUNTER	I.4.14.5 PLUG-IN COUNTER
	MACHINE COUNTER COPY	I.4.14.6 MACHINE COUNTER COPY

4.14.2 Starting/Exiting

(1) Starting procedure

1. Display the Service mode screen.
2. Press the following keys in this order.
   [STOP], [9]
3. The SECURITY MODE menu screen will appear.

(2) Exiting procedure

- Press the Reset key as many times as it is required to display the initial screen.

4.14.3 TOTAL COUNTER

(1) TOTAL COUNTER

(a) Use

- To set the calculational procedure of the total counter.

(b) Procedure

- The default setting is depends on the marketing area.

0: One count-up for each print cycle (Default: Inch, Taiwan and Latin America (inch))

1: Two count-up for each print cycle in the total counter

2: Two count-up for each print cycle in the total counter and the size counter.
(Default: Metric, China and Latin America (Metric))

(c) Count-up table

Size counter count mode	Except setting size			Setting size		
Total counter count mode	Mode 0	Mode 1	Mode 2	Mode 0	Mode 1	Mode 2
Total counter	1			1	2	2
Size counter	0			1	1	2

4.14.4 SIZE COUNTER

(1) SIZE COUNTER

(a) Use

- To set the size of paper to be counted by the size counter.

(b) Procedure

- The default setting is depends on the marketing area.

0: Not counted

1: A3/11 x 17 (Default: Inch, Taiwan, China, Latin America (inch/metric))

2: A3/B4/11x17/LEGAL/8K (Default: Metric)

3: A3/B4/FLS/11x17/LEGAL/8K

- In the case of the custom size paper, when the minimum paper length of the contents of size counter count mode is exceeded, it considers as setting size.
  E.g. in the case of size counter count mode = "2"
  If main scan direction [custom size] is more than 216 mm (Legal width), and sub scan direction [custom size] is more than 356 mm (Legal length), it considers as setting size.

(c) Count-up table

Size counter count mode	Except setting size			Setting size		
Total counter count mode	Mode 0	Mode 1	Mode 2	Mode 0	Mode 1	Mode 2
Total counter	1			1	2	2
Size counter	0			1	1	2

4.14.5 PLUG-IN COUNTER

- Not used.

(1) Default setting

- ENABLE

NOTE

- **Do not change this setting.**

4.14.6 MACHINE COUNTER COPY

(1) Use

1. To select whether to enable or disable copying according to whether the Machine Counter is mounted or not.

(2) Default setting

- ENABLE

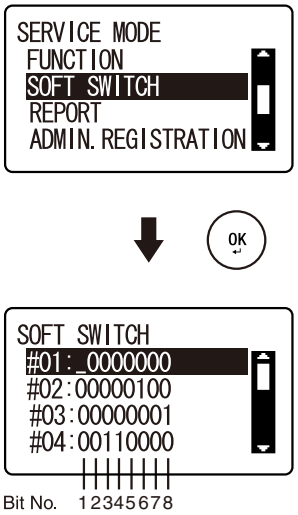
(3) Setting item

- “ENABLE”
- DISABLE

5. SOFT SWITCH SET

5.1 Description

- This machine is equipped with totally 64 soft switches that are used for fax adjustment in order to conform to the standard of each country. The default setting is changeable.
- The default setting of soft switch is automatically changed according to the following settings.
  - The marketing area code is set in the service mode.
  - The marketing area code is set using the RSD utility software.
  - [SERVICE MODE] -> [CLEAR DATA] -> [FLASH ROM CLEAR] or [MEMORY CLEAR] is cleared using the service mode. In this case, the initial settings are determined according to the current marketing area code.
- The bit status can be changed by the following methods.
  - Use soft switch available as a service mode function.
  - Use the RSD software function.



Hex-binary conversion list		HEX															
		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
Bit No.	4 (8)	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
	3 (7)	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
	2 (6)	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
	1 (5)	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1

5.2 Default setting

NOTE

- **A different country may be applicable depending on the communications standard.**
- **The marketing area settings is set in the procedure of [SERVICE MODE] -> [SERVICE'S CHOICE] -> [MARKETING AREA].**

5.2.1 Soft switch list

Soft Switch No.	Bit No.	Designation	Ref. page
#01	-	Reserved	I.5.3.1 SOFT SWITCH: #01
#02	8/7	Time between phase C to phase D signal in V.17	I.5.3.2 SOFT SWITCH: #02
	6	Header TX selection open to user	
	5	Confirm fax No.	
	3/2	Transmit RTN/RTP/MCF signal level criteria	
	1	Sent N.G page	
#03	8	Send out NSF frame with station ID	I.5.3.3 SOFT SWITCH: #03
	7	Number of Pause within phone number	
	6	Re-dial prohibit for no answer	
#04	4	Visible alarm for RTN signal	I.5.3.4 SOFT SWITCH: #04
	3	Audible alarm for RTN signal	
	2/1	Pulse shape	
#05	8/7	Push button ON/OFF timing (PB)	I.5.3.5 SOFT SWITCH: #05
	6/5	Relation between 10 key # & No. of dial pulse	
	4	10 PPS/20 PPS	
	3/2/1	PPS ratio	
#06	5	The time switch line to external phone after dialing the last digits	I.5.3.6 SOFT SWITCH: #06

Soft Switch No.	Bit No.	Designation	Ref. page
#07	8	Dial tone or busy tone detection	I.5.3.7 SOFT SWITCH: #07
	7	PSTN/PBX setting	
	6	PBX dial tone detect	
	5	Dial mode select	
	4/3/2/1	TX level select for PSK/FSK	
#08	7	Detect busy tone after dialing	I.5.3.8 SOFT SWITCH: #08
	6	Sending CED signal after connection	
	4/3/2/1	Redial interval	
#09	5	TSI/CSI append “+”	I.5.3.9 SOFT SWITCH: #09
	2/1	Time from RX DIS signal to send DCS signal	
#10	8	Print out RTN page report	I.5.3.10 SOFT SWITCH: #10
	7	Confirmation report result field	
	6/5	Get gap time between digit for pulse dial	
	3	Received DIS signal within reception	
	2	Transmission time limitation	
	1	Audio alarm after communication fail	
#11	7	Detect dial tone after pre-fix number	I.5.3.11 SOFT SWITCH: #11
	6	Pulse dial allowed to select	
	5	Protocol signal display mode	
#12	8	ECM mode capability	I.5.3.12 SOFT SWITCH: #12
	7/6	V.34 fall back counter for V.34 TX	
	5	Send CTC after 4th PPR	
	3	Send EOR after lowest speed	
	2/1	TCF transmission timing after DCS signal	
#13	8	MR capability for G3	I.5.3.13 SOFT SWITCH: #13
	7/6	Delay time between transaction	
	5	Super fine printing capability for receiving	
	3	DTS mode	
	2	Send DTC signal if RX DIS signal in manual RX mode	
#14	6	Memory size level to RX	I.5.3.14 SOFT SWITCH: #14
	5/4	Impedance	
	3/2/1	Time between V.34 ANSam signal and FSK DIS signal	
#15	1	Remote side no document be polling	I.5.3.15 SOFT SWITCH: #15
#16	2/1	Fax communication coding method	I.5.3.16 SOFT SWITCH: #16
#17	6	CED frequency	I.5.3.17 SOFT SWITCH: #17
	5/4/3	Pause between off hook and CED signal	
	2/1	Inactivity timer [T5]	
#18	6/5	G3 mode training quality level	I.5.3.18 SOFT SWITCH: #18
	4/3/2/1	Redefine re-dial attempts counter	
#19	8/7/6/5	CNG signal level	I.5.3.19 SOFT SWITCH: #19
	4/3/2/1	DTMF high frequency level	
#20	8/7/6	Max. ring off time	I.5.3.20 SOFT SWITCH: #20
	5/4/3/2/1	Redefine redial interval over default setting that base on SW08 bit 1 to 4	
#21	8	NSS signal before DCS	I.5.3.21 SOFT SWITCH: #21
	7/6	CNG sending duration after dialing	
	5	T4 timer	
	4	VOIP (Voice over IP)	
	3	DIS signal length	
	2/1	Increase default T1 timing during calling	
#22	4/3/2/1	CED signal output level	I.5.3.22 SOFT SWITCH: #22
#23	4/3/2/1	DTMF low frequency level	I.5.3.23 SOFT SWITCH: #23
#24	8	Ring cadence	I.5.3.24 SOFT SWITCH: #24
	4/3/2/1	CI signal ignore short off time	
#25	6/5	Delay time to catch line after detect ring	I.5.3.25 SOFT SWITCH: #25
	4/3	Flash key time in on hook key dial	
	2/1	RX gain adjustment	

Soft Switch No.	Bit No.	Designation	Ref. page
#26	8/7	Dial tone detection time before disconnected	I.5.3.26 SOFT SWITCH: #26
#27	-	Reserved	I.5.3.27 SOFT SWITCH: #27
#28	8/7/6/5	Time to dial after dial tone on the line	I.5.3.28 SOFT SWITCH: #28
	4/3/2/1	CED duration time within calling period	
#29	5/4/3/2/1	Time to dial after seize the line when dial tone detection	I.5.3.29 SOFT SWITCH: #29
#30	8/7	Pause delay time within digits	I.5.3.30 SOFT SWITCH: #30
#31	-	Reserved	I.5.3.31 SOFT SWITCH: #31
#32	4/3/2/1	Adjust V.34 RX connection speed threshold	I.5.3.32 SOFT SWITCH: #32
#33	8	Handset detects method in manual dial	I.5.3.33 SOFT SWITCH: #33
	7	V.17 echo protection tone	
	6	V.29 echo protection tone	
	5	Compromise equalize enable (CEQ) in the transmit path (TCEQ)	
	4	Compromise equalize enable (CEQ) in the receiver path (RCEQ)	
#34	-	Reserved	I.5.3.34 SOFT SWITCH: #34
#35	8/7	Dial tone table switch time	I.5.3.35 SOFT SWITCH: #35
	6/5/4	Dial tone frequency upper range index	
	3/2/1	Dial tone frequency low range index	
#36	8	Re-dial attempts continue fail counter	I.5.3.36 SOFT SWITCH: #36
	4/3/2/1	Re-dial attempts fail limitation counter	
#37	7	Auto dial learning for V.34 modem	I.5.3.37 SOFT SWITCH: #37
	6/5/4	RX start symbol rate for V.34 modem	
	3/2/1	TX start symbol rate for V.34 modem	
#38	6/5	V.34 flag number between ECM frame	I.5.3.38 SOFT SWITCH: #38
	4	Phase 2 guard tone power level (V.34)	
	3/2	Host detects ringing status in low frequency or one cycle	
	1	V.8 /V.34 capability	
#39	8	Disable V.34 TX for V.34 modem	I.5.3.39 SOFT SWITCH: #39
	7	Disable V.34 RX for V.34 modem	
	6/5	Flags number in FSK for V.34 modem	
	4	Manual TX mode for V.34 modem	
	3	Switch from V.17 to V.34 if DIS Bit 6 set after received DIS	
	2/1	Delay time in primary channel for V.34 transmit after CFR or MCF signal	
#40	7/6/5	RX start select receiving start speed for V.17	I.5.3.40 SOFT SWITCH: #40
	3/2/1	V.34 RX start speed prohibit V.34 mode when upper speed less	
#41	7/6/5	TX start speed select receiving start speed for V.17	I.5.3.41 SOFT SWITCH: #41
	3/2/1	V.34 TX start speed prohibit V.34 mode when upper speed less	
#42	-	Reserved	I.5.3.42 SOFT SWITCH: #42
#43	-	Reserved	I.5.3.43 SOFT SWITCH: #43
#44	-	Reserved	I.5.3.44 SOFT SWITCH: #44
#45	6	Close network	I.5.3.45 SOFT SWITCH: #45
#46	8	Daylight savings timer	I.5.3.46 SOFT SWITCH: #46
	4	RX print mode	
	3	Default TX mode	
	2	Header for FAX TX	
	1	Print model name on top of TX page if name not register	
#47	6	RX mode	I.5.3.47 SOFT SWITCH: #47
	5	Footer	
#48	8	Activity report	I.5.3.48 SOFT SWITCH: #48
	7	Reservation report	
	6	TX result report	
	5	RX result report	
	4	TX/RX error report	
	3	Error report for I-FAX and N-Scan	
	2	If machine receive error mail (I-FAX), the mail is deleted or kept?	
	1	Broadcast report	
#49	6	Print RX mailbox report method	I.5.3.49 SOFT SWITCH: #49

Soft Switch No.	Bit No.	Designation	Ref. page
	5	Re-dial method if comm. fail	
	4/3/2/1	No. of rings	
#50	8	Transmit or cancel after time out in “Memory TX”	I.5.3.50 SOFT SWITCH: #50
	7	It is possible to register E-mail address in relay box registration	
	6/5/4	Ring on time to ignore ring off time at 1st cycle	
	3/2/1	Ring off time at 1st cycle to approve incoming ring	
#51	6/5	Max pages of T30 monitor report	I.5.3.51 SOFT SWITCH: #51
	4/3	T30 monitor report selection	
	2	Send unsent page mode for memory transmission	
#52	-	Reserved	I.5.3.52 SOFT SWITCH: #52
#53	-	Reserved	I.5.3.53 SOFT SWITCH: #53
#54	8	Report Date/Time type	I.5.3.54 SOFT SWITCH: #54
	7/6	Report Date/Time format	
	5/4	Memory near full capacity for scanning	
#55	8/7/6	DC characteristics	I.5.3.55 SOFT SWITCH: #55
	1	Fast edge pulse dial	
#56	8/7/6/5	Pulse dial setup ($74C)	I.5.3.56 SOFT SWITCH: #56
	4/3/2/1	Pulse dial clear ($74D)	
#57	5	Compensation for loading from bridge capacitor	I.5.3.57 SOFT SWITCH: #57
	3/2/1	Resistance for pulse dialing	
#58	8	Time out from PSK to FSK delay time	I.5.3.58 SOFT SWITCH: #58
#59	6/5/4/3/2/1	Time Between GMT (Greenwich Mean Time)	I.5.3.59 SOFT SWITCH: #59
#60	7	Fax data divide printer	I.5.3.60 SOFT SWITCH: #60
	6	Quick memory TX	
	5	B4/A3 declaration for Ledger	
	4	The width of TX Ledger (8K)	
	3	Print mailbox RX image even password are not correct	
	2	Off hook alarm after communication	
	1	Display destination selection within TX phase C	
#61	4/3/2/1	Max. No. of ring	I.5.3.61 SOFT SWITCH: #61
#62	-	Reserved	I.5.3.62 SOFT SWITCH: #62
#63	8	“#” key definition in PBX mode	I.5.3.63 SOFT SWITCH: #63
	2	Fax TX image adjust	
	1	TX result report with image	
#64	6	Print RX error report in RX side if no any FAX signal detected	I.5.3.64 SOFT SWITCH: #64
	5	10 PPS & 20 PPS selectable by user	

5.2.2 Default soft switch setting for each market area (Market area 1)

Soft Switch No.	Marketing area																													
	Standard								U.S.A								Taiwan								Spain							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#02	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
#03	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1
#04	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0
#05	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
#06	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#07	0	0	0	1	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1
#08	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0	0	0	0	0	0	1	1	1
#09	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
#10	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	1	1	0	1	1	1	1
#11	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#12	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
#13	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0
#14	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	1	0	0	0	0
#15	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0

Soft Switch No.	Marketing area																													
	Standard								U.S.A								Taiwan								Spain							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#16	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0
#17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#18	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#19	1	1	0	1	1	1	1	0	0	0	0	1	1	1	1	0	1	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0
#20	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1
#21	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1
#22	1	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0
#23	1	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0
#24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#25	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#28	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	1	0	1	0
#29	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0
#30	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
#31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#32	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0
#33	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
#34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#35	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	1
#36	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1
#37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#38	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0
#39	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#46	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
#47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#48	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1
#49	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#50	1	0	0	1	0	0	1	0	1	0	0	1	0	0	1	0	1	0	0	1	0	0	1	0	1	0	0	1	0	0	1	0
#51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#54	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
#55	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
#56	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0
#57	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#59	0	0	0	0	1	0	0	0	0	1	0	1	0	1	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0
#60	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0
#61	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0
#62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#63	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

5.2.3 Default soft switch setting for each market area (Market area 2)

Soft Switch No.	Marketing area																													
	Italian								Belgium								Norway								Sweden							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#02	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
#03	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1
#04	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0
#05	0	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1
#06	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#07	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1
#08	0	0	0	0	0	1	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0	1	1	1
#09	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0
#10	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1
#11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#12	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1
#13	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0
#14	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
#15	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#16	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0
#17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#18	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#19	0	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0
#20	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	1	1	1
#21	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1
#22	1	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0
#23	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0
#24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#25	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#28	1	1	1	0	1	0	1	0	1	1	1	0	1	0	1	0	1	1	1	0	1	0	1	0	1	1	1	0	1	0	1	0
#29	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0
#30	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
#31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#32	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0
#33	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
#34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#35	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1
#36	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1
#37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#38	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0
#39	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#46	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
#47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#48	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1
#49	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#50	1	0	0	1	0	0	1	0	1	0	0	1	0	0	1	0	1	0	0	1	0	0	1	0	1	0	0	1	0	0	1	0
#51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#54	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1

Soft Switch No.	Marketing area																													
	Italian								Belgium								Norway								Sweden							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#55	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
#56	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0
#57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#59	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#60	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0
#61	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0
#62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#63	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

5.2.4 Default soft switch setting for each market area (Market area 3)

Soft Switch No.	Marketing area																													
	Netherlands								Finland								Denmark								Switzerland							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#02	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
#03	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1
#04	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0
#05	0	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1
#06	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#07	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1
#08	0	0	0	0	0	1	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0	1	1	1
#09	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0
#10	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1
#11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#12	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1
#13	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0
#14	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
#15	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#16	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0
#17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#18	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#19	0	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0
#20	0	0	0	0	0	0	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1
#21	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1
#22	1	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0
#23	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0
#24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#25	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#28	1	1	1	0	1	0	1	0	1	1	1	0	1	0	1	0	1	1	1	0	1	0	1	0	1	1	1	0	1	0	1	0
#29	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0
#30	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
#31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#32	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0
#33	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
#34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#35	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1
#36	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1
#37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#38	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0
#39	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0

Soft Switch No.	Marketing area																													
	Netherlands								Finland								Denmark								Switzerland							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#46	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
#47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#48	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1
#49	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#50	1	0	0	1	0	0	1	0	1	0	0	1	0	0	1	0	1	0	0	1	0	0	1	0	1	0	0	1	0	0	1	0
#51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#54	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
#55	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
#56	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0
#57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#59	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#60	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0
#61	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0
#62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#63	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

5.2.5 Default soft switch setting for each market area (Market area 4)

Soft Switch No.	Marketing area																													
	Ireland								Portugal								South Africa								Greece							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#02	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
#03	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1
#04	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0
#05	0	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
#06	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#07	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1
#08	0	0	0	0	0	1	1	1	0	0	0	0	0	1	1	1	1	0	0	0	0	1	1	0	0	0	0	0	0	1	1	1
#09	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
#10	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	1	0	0	0	1	1	0	1	1	1	1	0	1	1	1	1
#11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#12	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1
#13	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0
#14	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
#15	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#16	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0
#17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#18	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#19	0	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	1	1	1	0	1	1	1	0	0	1	0	1	1	1	1	0
#20	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1
#21	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1
#22	1	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0
#23	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0
#24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Soft Switch No.	Marketing area																													
	Ireland								Portugal								South Africa								Greece							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#25	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#28	1	1	1	0	1	0	1	0	1	1	1	0	1	0	1	0	1	1	1	0	0	1	0	1	1	1	1	0	1	0	1	0
#29	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0
#30	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	0
#31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#32	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0
#33	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
#34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#35	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	1
#36	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1
#37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#38	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0
#39	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#46	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
#47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#48	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1
#49	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#50	1	0	0	1	0	0	1	0	1	0	0	1	0	0	1	0	1	0	0	1	0	0	1	0	1	0	0	1	0	0	1	0
#51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#54	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
#55	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0
#56	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0
#57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#59	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0
#60	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0
#61	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0
#62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#63	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

5.2.6 Default soft switch setting for each market area (Market area 5)

Soft Switch No.	Marketing area																													
	Israel								Argentina								Germany								France							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#02	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
#03	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1
#04	1	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0
#05	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1
#06	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#07	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1
#08	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0	0	0	0	0	0	1	1	1	0	0	0	0	0	1	1	1
#09	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0

Soft Switch No.	Marketing area																													
	Israel								Argentina								Germany								France					
	Bit No.								Bit No.								Bit No.								Bit No.					
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#10	1	0	0	0	1	1	0	1	1	0	0	0	0	1	0	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1
#11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#12	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1
#13	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0
#14	0	1	0	1	0	0	0	0	0	1	0	0	1	0	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	0	0	0
#15	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#16	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0
#17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#18	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#19	0	1	0	1	1	1	1	0	1	1	0	1	1	1	1	0	1	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0
#20	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1
#21	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1
#22	1	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0
#23	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0
#24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#25	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#28	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	1	0	1	0	1	1	1	0	1	0	1	0
#29	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0
#30	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
#31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#32	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0
#33	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
#34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#35	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1
#36	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1
#37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#38	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0
#39	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#46	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
#47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#48	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1
#49	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#50	1	0	0	1	0	0	1	0	1	0	0	1	0	0	1	0	1	0	0	1	0	0	1	0	1	0	0	1	0	0	1	0
#51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#54	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
#55	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
#56	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0
#57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#59	0	0	1	0	0	0	0	0	0	1	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#60	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0
#61	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0
#62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#63	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1

Soft Switch No.	Marketing area																													
	Israel								Argentina								Germany								France							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

5.2.7 Default soft switch setting for each market area (Market area 6)

Soft Switch No.	Marketing area																													
	United Kingdom								Australia								China								New Zealand							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#02	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
#03	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1
#04	1	0	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0
#05	0	1	0	0	0	0	1	1	0	0	0	0	0	0	1	1	1	1	0	0	0	0	1	1	0	0	0	0	0	1	1	1
#06	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#07	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1
#08	0	0	0	0	0	1	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0	1	1	1
#09	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0
#10	1	1	1	0	1	1	1	1	1	1	1	0	1	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	1	1
#11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
#12	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1
#13	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0
#14	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	0	1	0	0	0	0	1	0	1	0	0	0	0
#15	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#16	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0
#17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#18	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#19	0	1	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0
#20	0	0	0	0	0	0	1	1	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0
#21	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1
#22	1	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0
#23	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0
#24	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#25	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#28	1	1	1	0	1	0	1	0	1	1	1	0	1	0	1	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1
#29	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0
#30	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
#31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#32	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0
#33	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
#34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#35	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1
#36	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1
#37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#38	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0
#39	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
#46	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
#47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#48	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1

Soft Switch No.	Marketing area																													
	United Kingdom								Australia								China								New Zealand							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#49	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
#50	1	0	0	1	0	0	1	0	0	1	0	1	0	0	1	0	1	0	0	1	0	0	1	0	0	1	0	1	0	0	1	0
#51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#54	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
#55	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	0	0
#56	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0
#57	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
#58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#59	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0
#60	0	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0
#61	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	0	0	1	0	0	0	0
#62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#63	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

5.2.8 Default soft switch setting for each market area (Market area 7)

Soft Switch No.	Marketing area																													
	Korea								Czech								Slovakia								Hungary							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#02	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
#03	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1
#04	0	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0
#05	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1
#06	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#07	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1
#08	1	1	0	0	0	1	1	0	0	0	0	0	0	1	1	1	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	1
#09	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0
#10	1	0	0	0	0	1	0	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1
#11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#12	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1
#13	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0
#14	0	1	0	0	1	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
#15	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#16	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0
#17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#18	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#19	0	0	0	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0
#20	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1
#21	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1
#22	1	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0
#23	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0
#24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#25	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#28	1	1	1	0	0	1	0	1	1	1	1	0	1	0	1	0	1	1	1	0	1	0	1	0	1	1	1	0	1	0	1	0
#29	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0
#30	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
#31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#32	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0
#33	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0

Soft Switch No.	Marketing area																													
	Korea								Czech								Slovakia								Hungary							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#35	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1
#36	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1
#37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#38	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0
#39	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#46	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
#47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#48	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1
#49	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#50	1	0	0	1	0	0	1	0	1	0	0	1	0	0	1	0	1	0	0	1	0	0	1	0	1	0	0	1	0	0	1	0
#51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#54	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
#55	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
#56	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0
#57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#59	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#60	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0
#61	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0
#62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#63	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

5.2.9 Default soft switch setting for each market area (Market area 8)

Soft Switch No.	Marketing area																													
	Ukraine								Baltic								West Europe								Slovenia							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#02	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
#03	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1
#04	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0
#05	0	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	1	0	0	0	0	0	1	1	0	1	0	0	0	0	1	1
#06	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#07	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1
#08	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	1	0	0	0	0	0	1	1	0
#09	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0
#10	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1
#11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#12	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	1	0	0	0	0	1
#13	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0
#14	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
#15	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#16	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0
#17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#18	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0

Soft Switch No.	Marketing area																													
	Ukraine								Baltic								West Europe								Slovenia					
	Bit No.								Bit No.								Bit No.								Bit No.					
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#19	0	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0
#20	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1
#21	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1
#22	1	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0
#23	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0
#24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#25	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#28	1	1	1	0	1	0	1	0	1	1	1	0	1	0	1	0	1	1	1	0	1	0	1	0	1	1	1	0	1	0	1	0
#29	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0
#30	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
#31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#32	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0
#33	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
#34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#35	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1
#36	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1
#37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#38	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0
#39	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#46	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
#47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#48	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1
#49	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#50	1	0	0	1	0	0	1	0	1	0	0	1	0	0	1	0	1	0	0	1	0	0	1	0	1	0	0	1	0	0	1	0
#51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#54	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
#55	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0
#56	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0
#57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#59	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#60	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0
#61	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0
#62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#63	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

5.2.10 Default soft switch setting for each market area (Market area 9)

Soft Switch No.	Marketing area																													
	Poland								Romania								Russia								Singapore					
	Bit No.								Bit No.								Bit No.								Bit No.					
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#02	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
#03	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1

Soft Switch No.	Marketing area																													
	Poland								Romania								Russia								Singapore							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#04	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0	0	1	1	0	0	0	0
#05	0	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#06	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#07	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1
#08	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0
#09	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#10	1	1	1	0	1	1	1	1	1	1	1	0	1	1	1	1	1	0	0	0	1	1	0	1	1	0	0	0	0	1	0	1
#11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#12	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#13	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0
#14	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0
#15	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#16	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0
#17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#18	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#19	0	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	1	1	1	1	1	1	1	0	1	1	0	1	1	1	1	0
#20	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0
#21	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1
#22	1	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0
#23	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0
#24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#25	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#28	1	1	1	0	1	0	1	0	1	1	1	0	1	0	1	0	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1
#29	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0
#30	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
#31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#32	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0
#33	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
#34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#35	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1
#36	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1
#37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#38	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0
#39	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#46	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
#47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#48	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1
#49	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#50	1	0	0	1	0	0	1	0	1	0	0	1	0	0	1	0	1	0	0	1	0	0	1	0	1	0	0	1	0	0	1	0
#51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#54	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
#55	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1
#56	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0
#57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Soft Switch No.	Marketing area																													
	Poland								Romania								Russia								Singapore							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#59	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0
#60	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0
#61	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0
#62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#63	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

5.2.11 Default soft switch setting for each market area (Market area 10)

Soft Switch No.	Marketing area																													
	Malaysia								Hong Kong								Philippines								Thailand							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#02	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
#03	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#04	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0
#05	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#06	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#07	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0
#08	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0
#09	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#10	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1
#11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#12	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#13	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0
#14	0	1	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0
#15	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#16	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0
#17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#18	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#19	1	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	1	1	0	1	1	1	1	0	0	0	0	1	1	1	1	0
#20	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1
#21	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1
#22	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0
#23	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0
#24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#25	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#28	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1
#29	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0
#30	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
#31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#32	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0
#33	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
#34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#35	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1
#36	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1
#37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#38	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0
#39	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Soft Switch No.	Marketing area																													
	Malaysia								Hong Kong								Philippines								Thailand							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#46	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
#47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#48	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1
#49	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#50	1	0	0	1	0	0	1	0	1	0	0	1	0	0	1	0	1	0	0	1	0	0	1	0	1	0	0	1	0	0	1	0
#51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#54	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
#55	1	0	0	0	0	0	0	1	1	0	0	0	0	1	0	0	1	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0
#56	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0
#57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#59	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0
#60	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0
#61	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0
#62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#63	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

5.2.12 Default soft switch setting for each market area (Market area 11)

Soft Switch No.	Marketing area																													
	Indonesia								Oman								UAE								Qatar							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#02	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
#03	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#04	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0
#05	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#06	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#07	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0
#08	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0
#09	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#10	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1
#11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#12	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#13	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0
#14	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0
#15	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#16	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0
#17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#18	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#19	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0
#20	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1
#21	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1
#22	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0
#23	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0
#24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#25	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#28	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1

Soft Switch No.	Marketing area																													
	Indonesia								Oman								UAE								Qatar							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#29	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0
#30	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
#31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#32	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0
#33	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
#34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#35	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1
#36	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1
#37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#38	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0
#39	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#46	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
#47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#48	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1
#49	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#50	1	0	0	1	0	0	1	0	1	0	0	1	0	0	1	0	1	0	0	1	0	0	1	0	1	0	0	1	0	0	1	0
#51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#54	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
#55	1	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0
#56	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0
#57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#59	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0
#60	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0
#61	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0
#62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#63	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

5.2.13 Default soft switch setting for each market area (Market area 12)

Soft Switch No.	Marketing area																													
	Bahrain								Kuwait								Saudi Arabia								Brazil							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#02	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
#03	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1
#04	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0
#05	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	1	0	0	0	0	0	0	0
#06	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#07	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0
#08	1	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	1	0	0	0	0	1	1	0
#09	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
#10	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	1	1	0	1	1	1	1	1	0	0	0	0	1	0	1
#11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#12	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1
#13	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0

Soft Switch No.	Marketing area																													
	Bahrain								Kuwait								Saudi Arabia								Brazil							
	Bit No.								Bit No.								Bit No.								Bit No.							
	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
#14	0	1	0	0	1	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0
#15	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#16	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0
#17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#18	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#19	0	0	0	1	1	1	1	0	1	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	1	1	0	1	1	1	1	0
#20	0	0	0	0	0	0	1	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	1	0
#21	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1
#22	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0
#23	0	0	1	0	0	0	0	0	1	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0
#24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#25	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
#26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#28	1	1	1	0	0	1	0	1	1	1	1	0	0	1	0	1	1	1	1	0	1	0	1	0	1	1	1	0	0	1	0	1
#29	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0
#30	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
#31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#32	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	0
#33	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0
#34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#35	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	1
#36	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1
#37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#38	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0
#39	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#44	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#46	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
#47	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#48	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	1
#49	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
#50	1	0	0	1	0	0	1	0	1	0	0	1	0	0	1	0	1	0	0	1	0	0	1	0	1	0	0	1	0	0	1	0
#51	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#54	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1	0	0	0	1	0	1	0	1
#55	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0
#56	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0
#57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#58	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#59	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0
#60	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0
#61	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0
#62	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
#63	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
#64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

5.3 Soft switch definition

5.3.1 SOFT SWITCH: #01

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7			0	
6			0	
5			0	
4			0	0
3			0	
2			0	
1			0	

5.3.2 SOFT SWITCH: #02

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Time between phase C to phase D signal in V.17 Example: Image -> EOP	<*1>	0	2
7			0	
6	Header TX selection open to user	0: No	1	
		"1": Yes		
5	Confirm fax No.	**"0": Not need to input fax number again**	0	
		1: Need to input fax number again		
4	Reserved	Reserved	0	0
3	Transmit RTN/RTP/MCF signal level criteria	<*2>	0	
2			0	
1	Sent N.G page	**"0": Send N.G page and up to 3 times for that page**	0	
		1: Not re-send that N.G page for G3 mode		

- Bit 6:
  If this bit set to "0", the header select function can not change by user, only changeable by serviceman in service mode.
- Bit 3-2:
  In G3 mode, if error line for each page, machine will send RTN instead of RTN, in this case, some machine will resend the same page again. The retry times depend on other end.
- Bit 1:
  N.G indicate our side detected RTN signal from other end. In this case machine can resend the same page up to three or just one time, and this use for G3 mode only.

<*1> Time between phase C to phase D signal in V.17

RX insensitivity	**70 ms**	120 ms	180 ms	60 ms
Bit No. 8	**"0"**	0	1	1
Bit No. 7	**"0"**	1	0	1

<*2> Transmit RTN/RTP/MCF signal level criteria

Percentage of error line level	Send RTN command	**11% or more**	12% or more	13% or more	14% or more
	Send RTP command	**6% to less than 11%**	7% to less than 12%	8% to less than 13%	9% to less than 14%
	Send MCF command	**Less than 6%**	Less than 7%	Less than 8%	Less than 9%
Bit No. 3		**"0"**	0	1	1
Bit No. 2		**"0"**	1	0	1

5.3.3 SOFT SWITCH: #03

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Send out NSF frame with station ID	0: No	1	8
		"1": Yes		
7	Number of Pause within phone number	**"0": No any limitation**	0	
		1: Max. up to 2 "P" within inputted telephone number		
6	Re-dial prohibit for no answer	**"0": Continue to dial**	0	
		1: Not allowed to re-dial if no any FAX signal or detected busy tone after dialing		
5	Reserved	Reserved	0	0
4			0	
3			0	
2			0	

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
1			0	

- Bit 8:
  This bit set to “1”, the answer machine will send machine name by NSF frame after connection.
- Bit 7:
  Can input Pause key to insert pause time between digits, this can put more than one “P” at the end of telephone number to increase calling time (T) after calling.
  In this case can use “P” to increase T1 time during calling to other parties.

5.3.4 SOFT SWITCH: #04

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7			0	
6			0	
5			0	
4	Visible alarm for RTN signal	0: No	1	C
		“1”: Yes - Display message while sending / receiving RTN signal (RTN = Retrain Negative).		
3	Audible alarm for RTN signal	0: No	1	
		“1”: Yes - Alarm for sending or receiving RTN signal.		
2	Pulse shape	<*1>	0	
1			0	

- Bit 4:
  The display message will keep on LCD 3 seconds or until next incoming T30 signal.
- Bit 3:
  The duration of alarm last 3 second after detect negative signal in G3 mode.

<*1> Pulse shape

	Normal	Slow shape	Super slow shape	Reserved
Bit No. 2	**“0”**	0	1	1
Bit No. 1	**“0”**	1	0	1

5.3.5 SOFT SWITCH: #05

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Push button ON/OFF timing (PB)	<*1>	0	0
7			0	
6	Relation between 10 key # & No. of dial pulse	<*2>	0	
5			0	
4	10 PPS/20 PPS	**“0”: 10 PPS**	0	1
		1: 20 PPS		
3	PPS ratio	<*3>	0	
2			0	
1			1	

<*1> Push button ON/OFF timing (PB)

Timing (ms)	**ON: 100**, **OFF: 140**	ON: 70, OFF: 70	ON: 70, OFF: 140	ON: 90, OFF: 90
Bit No. 8	**“0”**	0	1	1
Bit No. 7	**“0”**	1	0	1

<*2> Relation between 10 key # & No. of dial pulse

#1	**1**	2	9	Reserved
#2	**2**	3	8	
#3	**3**	4	7	
#4	**4**	5	6	
#5	**5**	6	5	
#6	**6**	7	4	
#7	**7**	8	3	
#8	**8**	9	2	
#9	**9**	10	1	
#0	**10**	1	10	
Bit No. 6	**“0”**	0	1	1

#1	**1**	2	9	Reserved
#2	**2**	3	8	
#3	**3**	4	7	
#4	**4**	5	6	
#5	**5**	6	5	
#6	**6**	7	4	
#7	**7**	8	3	
#8	**8**	9	2	
#9	**9**	10	1	
#0	**10**	1	10	
Bit No. 5	**"0"**	1	0	1

<*3> PPS ratio

PPS ratio (%)	28	**30**	33	40
Bit No. 3	0	**"0"**	0	0
Bit No. 2	0	**"0"**	1	1
Bit No. 1	0	**"1"**	0	1

5.3.6 SOFT SWITCH: #06

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7			0	
6			0	
5	The time switch line to external phone after dialing the last digits	**"0": 1 sec**	0	
		1: 1.5 sec		
4	Reserved	Reserved	0	0
3			0	
2			0	
1			0	

5.3.7 SOFT SWITCH: #07

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Dial tone or busy tone detection	**"0": Disable**	0	0
		1: Enable - Detect dial tone before dial		
7	PSTN/PBX setting	**"0": PSTN**	0	
		1: PBX - Select PBX line type		
6	PBX dial tone detect	**"0": Not to detect dial tone before pre-fix number**	0	
		1: Detect dial tone before the pre-fix number in PBX mode		
5	Dial mode select	**"0": DTMF - PB**	0	
		1: Pulse - DP		
4	TX level select for PSK/FSK	<*1>	1	8
3			0	
2			0	
1			0	

<*1> TX level select for PSK/FSK

Level (dBm)	-17	-16	-15	-14	-13	-12	-11	-10	**-9**	-8	-7	-6	-5	-4	-3	-2
Bit No. 4	0	0	0	0	0	0	0	0	**"1"**	1	1	1	1	1	1	1
Bit No. 3	0	0	0	0	1	1	1	1	**"0"**	0	0	0	1	1	1	1
Bit No. 2	0	0	1	1	0	0	1	1	**"0"**	0	1	1	0	0	1	1
Bit No. 1	0	1	0	1	0	1	0	1	**"0"**	1	0	1	0	1	0	1

5.3.8 SOFT SWITCH: #08

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Reserved	Reserved	0	6
7	Detect busy tone after dialing	0: Not to detect	1	
		"1": Detect busy tone after dialing		

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
6	Sending CED signal after connection	0: Not to send	1	
		"1": Send CED signal before DIS signal after connection		
5	Reserved	Reserved	0	
4	Redial interval	<*1>	0	1
3			0	
2			0	
1			1	

<*1> Redial interval

Auto dial interval	1, 1, 1, 1, 1, 10, 1, 1, 1	**3, 3, 15, 3, 3**	1, 1, 15	3, 3	1, 1, 1	3, 3, 3	1, 1	3, 3, 3, 3
Bit No. 4	0	**"0"**	0	0	0	0	0	0
Bit No. 3	0	**"0"**	0	0	1	1	1	1
Bit No. 2	0	**"0"**	1	1	0	0	1	1
Bit No. 1	0	**"1"**	0	1	0	1	0	1

Auto dial interval	1, 1, 1, 1	2, 2	5, 5, 5, 5	1, 2, 2, 2	2, 2, 2, 2, 2, 2, 2, 2, 2, 2	2, 2, 10, 2, 2, 2	3, 3, 10, 3, 3, 3, 3	10, 10, 10, 10, 15, 10
Bit No. 4	1	1	1	1	1	1	1	1
Bit No. 3	0	0	0	0	1	1	1	1
Bit No. 2	0	0	1	1	0	0	1	1
Bit No. 1	0	1	0	1	0	1	0	1

5.3.9 SOFT SWITCH: #09

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7			0	
6			0	
5	TSI/CSI append "+"	**"0": Not append "+" before send out TSI/CSI**	0	
		1: Automatically insert "+"		
4	Reserved	Reserved	0	0
3			0	
2	Time from RX DIS signal to send DCS signal	<*1>	0	
1			0	

- Bit 5:
  This bit set to "1", the "+" character will put in the first position on CSI and TSI command.

<*1> Time from RX DIS signal to send DCS signal

Description	**70 ms**	120 ms	180 ms	240 ms
Bit No. 2	**"0"**	0	1	1
Bit No. 1	**"0"**	1	0	1

5.3.10 SOFT SWITCH: #10

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Print out RTN page report	0: Not to print	1	A
		"1": Print out RTN page report after transaction for TX/RX RTN signal		
7	Confirmation report result field	**"0": Print "OK"**	0	
		1: Print "NG" in case of sending or receiving RTN signal		
6	Get gap time between digit for pulse dial	<*1>	1	
5			0	
4	Reserved	Reserved	0	1
3	Received DIS signal within reception	**"0": Repeat sending DIS/DTC again until time out**	0	
		1: Disconnected after sending DCN signal		
2	Transmission time limitation	**"0": No any limitation until document jam**	0	
		1: Limit to 32 minutes from data phase		
1	Audio alarm after communication fail	0: Not to alarm after transaction fail	1	
		"1": Alarm after disconnected		

- Bit 8:
  If this bit set to “1”, machine will print out confirmation report after each transaction.
- Bit 7:
  If this bit set to “1”, the result field will show “NG” instead of “OK” in the confirmation report and activity report or checking the result on the LCD.
- Bit 2:
  This for manual TX only.

<*1> Get gap time between digit for pulse dial

Value (ms)	550	650	**750**	850
Bit No. 6	0	0	**“1”**	1
Bit No. 5	0	1	**“0”**	1

5.3.11 SOFT SWITCH: #11

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7	Detect dial tone after pre-fix number	**“0”: No**	0	
		1: Yes		
6	Pulse dial allowed to select	**“0”: Yes**	0	
		1: Not allowed		
5	Protocol signal display mode	**“0”: Not to display**	0	
		1: Display V8 or T30 command within communication.		
4	Reserved	Reserved	0	0
3			0	
2			0	
1			0	

- Bit 6:
  If this bit set to “1”, not allowed user to select pulse dial, and this function open serviceman to change.
- Bit 5:
  If this bit set to “1”, LCD will show the command between each party, the detail specification see service mode specification.

5.3.12 SOFT SWITCH: #12

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	ECM mode capability	0: No - Also disable V.34 modem capability	1	8
		“1”: Yes		
7	V.34 fall back counter for V.34 TX	<*1>	0	
6			0	
5	Send CTC after 4th PPR	**“0”: Send CTC (Continue To Correct)**	0	
		1: Send EOR (End Of Transmission)		
4	Reserved	Reserved	0	0
3	Send EOR after lowest speed	**“0”: Send DCN (Re-dial)**	0	
		1: Send EOR_xxx [Germany PTT]		
2	TCF transmission timing after DCS signal	<*2>	0	
1			0	

- Bit 7-6:
  If counter equal “1”, machine will down to next lower speed for next data phase.
- Bit 2-1:
  Delay time from FSK mode to PSK mode, this use for G3 mode only, V.34 do not need this setting.

<*1> V.34 fall back counter for V.34 TX

Counter	**1**	2	3	4
Bit No. 7	**“0”**	0	1	1
Bit No. 6	**“0”**	1	0	1

<*2> TCF transmission timing after DCS signal

Description (ms)	**70**	80	90	100
Bit No. 2	**“0”**	0	1	1
Bit No. 1	**“0”**	1	0	1

5.3.13 SOFT SWITCH: #13

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	MR capability for G3	**“0”: Yes**	0	1

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
		1: No		
7	Delay time between transaction	<*1>	0	
6			0	
5	Super fine printing capability for receiving	0: No	1	
		"1": Yes		
4	Reserved	Reserved	0	0
3	DTS mode	**"0": No**	0	
		1: Yes		
2	Send DTC signal if RX DIS signal in manual RX mode	**"0": Yes**	0	
		1: No - Send DIS again		
1	Reserved	Reserved	0	

- Bit 7-6:
  If set to "1", the time between each transaction will become longer, in this case machine will wait more time before start to dial next transaction.

<*1> Delay time between transaction

Description (sec)	**20**	60	120	240
Bit No. 7	**"0"**	0	1	1
Bit No. 6	**"0"**	1	0	1

5.3.14 SOFT SWITCH: #14

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Reserved	Reserved	0	1
7			0	
6	Memory size level to RX	**"0": Base on system configuration**	0	
		1: Up to 128 KB		
5	Impedance	<*1>	1	
4			0	2
3	Time between V.34 ANSam signal and FSK DIS signal	<*2>	0	
2			1	
1			0	

- Bit 6:
  If set to "1", machine will become manual RX mode if available memory size less than 128 K.

<*1> Impedance

Description	600 Ω	Complex	**540 Ω**	(Reserved)
Bit No. 5	0	0	**"1"**	1
Bit No. 4	0	1	**"0"**	1

<*2> Time between V.34 ANSam signal and FSK DIS signal

Timer (ms)	430	440	**450**	460	470	480	490	500
Bit No. 3	0	0	**"0"**	0	1	1	1	1
Bit No. 2	0	0	**"1"**	1	0	0	1	1
Bit No. 1	0	1	**"0"**	1	0	1	0	1

5.3.15 SOFT SWITCH: #15

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7			0	
6			0	
5			0	
4			0	1
3			0	
2			0	
1	Remote side no document be polling	0: Not to generate report	1	
		"1": Generate error report after communication end		

5.3.16 SOFT SWITCH: #16

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7			0	
6			0	
5			0	
4			0	3
3			0	
2	Fax communication coding method	<*1>	1	
1			1	

<*1> Fax communication coding method

Coding method	MMR	MR	MH	**JBIG**
Bit No. 2	0	0	1	**"1"**
Bit No. 1	0	1	0	**"1"**

5.3.17 SOFT SWITCH: #17

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7			0	
6	CED frequency	**"0": 2100 Hz**	0	
		1: 1100 Hz		
5	Pause between off hook and CED signal	<*1>	0	
4			0	0
3			0	
2	Inactivity timer [T5]	<*2>	0	
1			0	

<*1> Pause between off hook and CED signal

Time (T)	**T=1.8 sec to 2.5 sec**	T + 100 ms	T + 200 ms	T + 300 ms	T + 400 ms	T + 500 ms	T + 600 ms	T + 700 ms
Bit No. 5	**"0"**	0	0	0	1	1	1	1
Bit No. 4	**"0"**	0	1	1	0	0	1	1
Bit No. 3	**"0"**	1	0	1	0	1	0	1

<*2> Inactivity timer [T5]

Description	**T5**	T5 + 20 sec	T5 + 40 sec	T5 + 60 sec
Bit No. 2	**"0"**	0	1	1
Bit No. 1	**"0"**	1	0	1

- T5 = 60 ± 5 sec. in ITU-T standard

5.3.18 SOFT SWITCH: #18

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7			0	
6	G3 mode training quality level	<*1>	0	
5			0	
4	Redefine re-dial attempts counter	<*2>	0	2
3			0	
2			1	
1			0	

- Bit 6-5:
  Level 1 training check phases are not so severe than level 2,3,4. Level 2,3,4 can keep higher RX speed communication than level 1 for poor line condition.
- Bit 4-1:
  The redial time will followings bit 1 to 4 if these bit not all clear. Otherwise the redial time will followings bit 1 to 4 on SW08.

<*1> G3 mode training quality level

Definition	**Level 1**	Level 2	Level 3	Level 4
Bit No. 6	**"0"**	0	1	1
Bit No. 5	**"0"**	1	0	1

<*2> Redefine re-dial attempts counter

Counter	0	1	**2**	3	4	5	6	7	8	9	10	Reserved				
Bit No. 4	0	0	**"0"**	0	0	0	0	0	1	1	1	1	1	1	1	1
Bit No. 3	0	0	**"0"**	0	1	1	1	1	0	0	0	0	1	1	1	1
Bit No. 2	0	0	**"1"**	1	0	0	1	1	0	0	1	1	0	0	1	1
Bit No. 1	0	1	**"0"**	1	0	1	0	1	0	1	0	1	0	1	0	1

5.3.19 SOFT SWITCH: #19

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	CNG signal level	<*1>	0	7
7			1	
6			1	
5			1	
4	DTMF high frequency level	<*2>	1	B
3			0	
2			1	
1			1	

<*1> CNG signal level

Level (dBm)	-17	-16	-15	-14	-13	-12	-11	**-10**	-9	-8	-7	-6	-5	-4	-3	-2
Bit No. 8	0	0	0	0	0	0	0	**"0"**	1	1	1	1	1	1	1	1
Bit No. 7	0	0	0	0	1	1	1	**"1"**	0	0	0	0	1	1	1	1
Bit No. 6	0	0	1	1	0	0	1	**"1"**	0	0	1	1	0	0	1	1
Bit No. 5	0	1	0	1	0	1	0	**"1"**	0	1	0	1	0	1	0	1

<*2> DTMF high frequency level

Level (dBm)	-17	-16	-15	-14	-13	-12	-11	-10	-9	-8	-7	**-6**	-5	-4	-3	-2
Bit No. 4	0	0	0	0	0	0	0	0	1	1	1	**"1"**	1	1	1	1
Bit No. 3	0	0	0	0	1	1	1	1	0	0	0	**"0"**	1	1	1	1
Bit No. 2	0	0	1	1	0	0	1	1	0	0	1	**"1"**	0	0	1	1
Bit No. 1	0	1	0	1	0	1	0	1	0	1	0	**"1"**	0	1	0	1

5.3.20 SOFT SWITCH: #20

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Max. ring off time	<*1>	0	6
7			1	
6			1	
5	Redefine redial interval over default setting that base on SW08 bit 1 to 4	<*2>	0	0
4			0	
3			0	
2			0	
1			0	

<*1> Max. ring off time

Timer (sec.)	4	5	6	**7**	8	9	10	13
Bit No. 8	0	0	0	**"0"**	1	1	1	1
Bit No. 7	0	0	1	**"1"**	0	0	1	1
Bit No. 6	0	1	0	**"1"**	0	1	0	1

<*2> Redefine redial interval over default setting that base on SW08 bit 1 to 4

Interval (minute)	**0**	1	2	3	4	5	6	7	8	9	10
Bit No. 5	**"0"**	0	0	0	0	0	0	0	0	0	0
Bit No. 4	**"0"**	0	0	0	0	0	0	0	1	1	1
Bit No. 3	**"0"**	0	0	0	1	1	1	1	0	0	0
Bit No. 2	**"0"**	0	1	1	0	0	1	1	0	0	1
Bit No. 1	**"0"**	1	0	1	0	1	0	1	0	1	0

Interval (minute)	11	12	13	14	15	16	17	18	19	20
Bit No. 5	0	0	0	0	0	1	1	1	1	1

Interval (minute)	11	12	13	14	15	16	17	18	19	20
Bit No. 4	1	1	1	1	1	0	0	0	0	0
Bit No. 3	0	1	1	1	1	0	0	0	0	1
Bit No. 2	1	0	0	1	1	0	0	1	1	0
Bit No. 1	1	0	1	0	1	0	1	0	1	0

Interval (minute)	Reserved										
Bit No. 5	1	1	1	1	1	1	1	1	1	1	1
Bit No. 4	0	0	0	1	1	1	1	1	1	1	1
Bit No. 3	1	1	1	0	0	0	0	1	1	1	1
Bit No. 2	0	1	1	0	0	1	1	0	0	1	1
Bit No. 1	1	0	1	0	1	0	1	0	1	0	1

5.3.21 SOFT SWITCH: #21

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	NSS signal before DCS	0: Not to send NSS signal for self mode in TX mode	1	C
		"1": Send NSS signal if remote side is same model		
7	CNG sending duration after dialing	<*1>	1	
6			0	
5	T4 timer	**"0": 3.0±15% sec. - Normal case**	0	
		1: 4.5±15% sec.		
4	VOIP (Voice over IP)	**"0": Disable**	0	0
		1: Enable		
3	DIS signal length	**"0": Normal length (Bit 1 to 64)**	0	
		1: 4 bytes DIS command. - bit 1 to 32 only		
2	Increase default T1 timing during calling	<*2>	0	
1			0	

- Bit 8:
  Sender machine's name will show on the other party's LCD or print on the report if remote side is the same model.
- Bit 4:
  The T4 timer value varies according to the combination of bit 4 and bit 5.

		Bit 5	
		0	1
Bit 4	0	3.0±15**%** sec.	5.0 sec.
	1	4.5±15**%** sec.	10.0 sec.

- Bit 3:
  Some old machine can not accept DIS command over 4 bytes, and every time will become fail. In this case can set this bit to "1". If this bit set to "1", JBIG and V8 capability will disable automatically.
- Bit 2-1:
  T1 indicate the calling time after dialing, can adjust the T1 time more long by change the default value. The default T1 timer depends on each country regulation.

<*1> CNG sending duration after dialing

Duration (unit=sec)	40	60	**70**	120
Bit No. 7	0	0	**"1"**	1
Bit No. 6	0	1	**"0"**	1

<*2> Increase default T1 timing during calling

Description (sec)	**T1**	T1 + 30	T1 + 40	T1 + 60
Bit No. 2	**"0"**	0	1	1
Bit No. 1	**"0"**	1	0	1

5.3.22 SOFT SWITCH: #22

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7			0	
6			0	
5			0	
4	CED signal output level	<*1>	0	7

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
3			1	
2			1	
1			1	

<*1> CED signal output level

Level (dBm)	-17	-16	-15	-14	-13	-12	-11	**-10**	-9	-8	-7	-6	-5	-4	-3	-2
Bit No. 4	0	0	0	0	0	0	0	**"0"**	1	1	1	1	1	1	1	1
Bit No. 3	0	0	0	0	1	1	1	**"1"**	0	0	0	0	1	1	1	1
Bit No. 2	0	0	1	1	0	0	1	**"1"**	0	0	1	1	0	0	1	1
Bit No. 1	0	1	0	1	0	1	0	**"1"**	0	1	0	1	0	1	0	1

5.3.23 SOFT SWITCH: #23

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7			0	
6			0	
5			0	
4	DTMF low frequency level	<*1>	0	7
3			1	
2			1	
1			1	

<*1> DTMF low frequency level

Level (dBm)	-15	-14	-13	-12	-11	-10	-9	**-8**	-7	-6	-5	-4	-3	-2	-1	0
Bit No. 4	0	0	0	0	0	0	0	**"0"**	1	1	1	1	1	1	1	1
Bit No. 3	0	0	0	0	1	1	1	**"1"**	0	0	0	0	1	1	1	1
Bit No. 2	0	0	1	1	0	0	1	**"1"**	0	0	1	1	0	0	1	1
Bit No. 1	0	1	0	1	0	1	0	**"1"**	0	1	0	1	0	1	0	1

5.3.24 SOFT SWITCH: #24

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Ring cadence	**"0": No**	0	0
		1: Ring detect less than 100 ms		
7	Reserved	Reserved	0	
6			0	
5			0	
4	CI signal ignore short off time	<*1>	0	0
3			0	
2			0	
1			0	

<*1> CI signal ignore short off time

Time (ms)	**-40**	-50	-60	-70	-80	-90	-100	-110	-120	-130	-140	-150	-160	-170	-180	-190
Bit No. 4	**"0"**	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
Bit No. 3	**"0"**	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
Bit No. 2	**"0"**	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
Bit No. 1	**"0"**	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1

5.3.25 SOFT SWITCH: #25

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7			0	
6	Delay time to catch line after detect ring	<*1>	0	
5			0	
4	Flash key time in on hook key dial	<*2>	0	2
3			0	

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
2	RX gain adjustment	<*3>	1	
1			0	

<*1> Delay time to catch line after detect ring

Delay time (sec.)	**0**	1	2	3
Bit No. 6	**"0"**	0	1	1
Bit No. 5	**"0"**	1	0	1

<*2> Flash key time in on hook key dial

Flash time (ms)	**100**	80	250	600
Bit No. 4	**"0"**	0	1	1
Bit No. 3	**"0"**	1	0	1

<*3> RX gain adjustment

	No gain	Up 0.75 dB	**Up 1.5 dB**	Up 2.25 dB
Bit No. 2	0	0	**"1"**	1
Bit No. 1	0	1	**"0"**	1

5.3.26 SOFT SWITCH: #26

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Dial tone detection time before disconnected	<*1>	0	0
7			0	
6	Reserved	Reserved	0	
5			0	
4			0	0
3			0	
2			0	
1			0	

<*1> Dial tone detection time before disconnected

Time (unit=sec)	**10**	15	20	25
Bit No. 8	**"0"**	0	1	1
Bit No. 7	**"0"**	1	0	1

5.3.27 SOFT SWITCH: #27

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7			0	
6			0	
5			0	
4			0	0
3			0	
2			0	
1			0	

5.3.28 SOFT SWITCH: #28

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Time to dial after dial tone on the line	<*1>	1	A
7			0	
6			1	
5			0	
4	CED duration time within calling period	<*2>	0	7
3			1	
2			1	
1			1	

- Bit 4-1:
  The CED duration time level for automatic transmission.

<*1> Time to dial after dial tone on the line

Time (ms)	0	100	200	300	400	500	600	700	800	900	**1000**	1100	1200	1300	1400	1500
Bit No. 8	0	0	0	0	0	0	0	0	1	1	**"1"**	1	1	1	1	1
Bit No. 7	0	0	0	0	1	1	1	1	0	0	**"0"**	0	1	1	1	1
Bit No. 6	0	0	1	1	0	0	1	1	0	0	**"1"**	1	0	0	1	1
Bit No. 5	0	1	0	1	0	1	0	1	0	1	**"0"**	1	0	1	0	1

<*2> CED duration time within calling period

Time (ms)	0	100	200	300	400	500	600	**700**	800	900	1000	1100	1200	1300	1400	1500
Bit No. 4	0	0	0	0	0	0	0	**"0"**	1	1	1	1	1	1	1	1
Bit No. 3	0	0	0	0	1	1	1	**"1"**	0	0	0	0	1	1	1	1
Bit No. 2	0	0	1	1	0	0	1	**"1"**	0	0	1	1	0	0	1	1
Bit No. 1	0	1	0	1	0	1	0	**"1"**	0	1	0	1	0	1	0	1

5.3.29 SOFT SWITCH: #29

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Reserved	Reserved	0	1
7			0	
6			0	
5	Time to dial after seize the line when dial tone detection (Unit= 200 msec)	<*1>	1	4
4			0	
3			1	
2			0	
1			0	

<*1> Time to dial after seize the line when dial tone detection

Time (sec)	0	0.2	0.4	0.6	0.8	1.0	1.2	1.4	1.6	1.8	2.0	2.2	2.4	2.6	2.8	3.0
Bit No. 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bit No. 4	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
Bit No. 3	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
Bit No. 2	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
Bit No. 1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1

Time (sec)	3.2	3.4	3.6	3.8	**4.0**	4.2	4.4	4.6	4.8	5.0	5.2	5.4	5.6	5.8	6.0	6.2
Bit No. 5	1	1	1	1	**"1"**	1	1	1	1	1	1	1	1	1	1	1
Bit No. 4	0	0	0	0	**"0"**	0	0	0	1	1	1	1	1	1	1	1
Bit No. 3	0	0	0	0	**"1"**	1	1	1	0	0	0	0	1	1	1	1
Bit No. 2	0	0	1	1	**"0"**	0	1	1	0	0	1	1	0	0	1	1
Bit No. 1	0	1	0	1	**"0"**	1	0	1	0	1	0	1	0	1	0	1

5.3.30 SOFT SWITCH: #30

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Pause delay time within digits Ex. 002Pxxxxxx	<*1>	0	4
7			1	
6	Reserved	Reserved	0	
5			0	
4			0	0
3			0	
2			0	
1			0	

<*1> Pause delay time within digits

Time (sec)	2.0	**2.5**	3.0	3.5
Bit No. 8	0	**"0"**	1	1
Bit No. 7	0	**"1"**	0	1

5.3.31 SOFT SWITCH: #31

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Reserved	Reserved	0	0

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
7			0	
6			0	
5			0	
4			0	0
3			0	
2			0	
1			0	

5.3.32 SOFT SWITCH: #32

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7			0	
6			0	
5			0	
4	Adjust V.34 RX connection speed threshold	<*1>	1	D
3			1	
2			0	
1			1	

<*1> Adjust V.34 RX connection speed threshold

Speed	High			->			Highest
Value	0000H (No affect)	FF00H	FE00H	FD00H	FC00H	FB00H	FA00H	F900H
Bit No. 4	0	0	0	0	0	0	0	0
Bit No. 3	0	0	0	0	1	1	1	1
Bit No. 2	0	0	1	1	0	0	1	1
Bit No. 1	0	1	0	1	0	1	0	1

Speed	Low			->			Lowest
Value	0000H (No affect)	0100H	0200H	0300H	0400H	**0500H**	0600H	0700H
Bit No. 4	1	1	1	1	1	**"1"**	1	1
Bit No. 3	0	0	0	0	1	**"1"**	1	1
Bit No. 2	0	0	1	1	0	**"0"**	1	1
Bit No. 1	0	1	0	1	0	**"1"**	0	1

5.3.33 SOFT SWITCH: #33

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Handset detects method in manual dial	**"0": Set H relay to high**	0	4
		1: Set H relay to low during detect handset status		
7	V.17 echo protection tone	0: Off	1	
		"1": On		
6	V.29 echo protection tone	**"0": Off**	0	
		1: On		
5	Compromise equalize enable (CEQ) in the transmit path (TCEQ)	**"0": No**	0	
		1: Yes		
4	Compromise equalize enable (CEQ) in the receiver path (RCEQ)	**"0": No**	0	0
		1: Yes		
3	Reserved	Reserved	0	
2			0	
1			0	

- Bit 5-4:
  V.17, V.29 and V.27 only.

5.3.34 SOFT SWITCH: #34

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7			0	
6			0	
5			0	
4			0	0
3			0	
2			0	
1			0	

5.3.35 SOFT SWITCH: #35

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Dial tone table switch time	<*1>	1	9
7			0	
6	Dial tone frequency upper range index	<*2>	0	
5			1	
4			0	0
3	Dial tone frequency low range index	<*3>	0	
2			0	
1			0	

<*1> Dial tone table switch time

Time (sec)	1	2	**3**	4.5
Bit No. 8	0	0	**"1"**	1
Bit No. 7	0	1	**"0"**	1

<*2> Dial tone frequency upper range index

Frequency range (Hz)	375 to 462	310 to 380	**462 to 580**	570 to 630	300 to 370	Reserved		
Bit No. 6	0	0	**"0"**	0	1	1	1	1
Bit No. 5	0	0	**"1"**	1	0	0	1	1
Bit No. 4	0	1	**"0"**	1	0	1	0	1

<*3> Dial tone frequency low range index

Frequency range (Hz)	**375 to 462**	310 to 380	462 to 580	570 to 630	300 to 370	Reserved		
Bit No. 3	**"0"**	0	0	0	1	1	1	1
Bit No. 2	**"0"**	0	1	1	0	0	1	1
Bit No. 1	**"0"**	1	0	1	0	1	0	1

5.3.36 SOFT SWITCH: #36

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Re-dial attempts continue fail counter	0: No any limitation	1	8
		"1": limit up to bit 1 to 4		
7	Reserved	Reserved	0	
6			0	
5			0	
4	Re-dial attempts fail limitation counter	<*1>	1	A
3			0	
2			1	
1			0	

- Bit 8:
  The redial fail counter will plus 1 for each auto dialing, unless user interruption or after finish communication. If the counter over the setting in bit 1 to 4 and Bit set to 1, then the machine will stop to dial unless user interruption or entry communication phase.

<*1> Re-dial attempts fail limitation counter

Counter	0	1	2	3	4	5	6	7	8	9	**10**	11	12	13	14	15
Bit No. 4	0	0	0	0	0	0	0	0	1	1	**"1"**	1	1	1	1	1
Bit No. 3	0	0	0	0	1	1	1	1	0	0	**"0"**	0	1	1	1	1
Bit No. 2	0	0	1	1	0	0	1	1	0	0	**"1"**	1	0	0	1	1

Counter	0	1	2	3	4	5	6	7	8	9	**10**	11	12	13	14	15
Bit No. 1	0	1	0	1	0	1	0	1	0	1	**"0"**	1	0	1	0	1

5.3.37 SOFT SWITCH: #37

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7	Auto dial learning for V.34 modem	**"0": Yes - Skip V.34 handshaking with remote side**	0	
		1: No - Retry from V.8 handshake		
6	RX start symbol rate for V.34 modem	<*1>	0	
5			0	
4			0	0
3	TX start symbol rate for V.34 modem		0	
2			0	
1			0	

<*1> RX start symbol rate for V.34 modem, TX start symbol rate for V.34 modem

Symbol rate (sym/s)	**3429**	3200	3000	2800	2400	Reserved		
Max. speed (kbps)	**33.6**	31.2	26.4	24.0	21.6			
Bit No. 6 (3)	**"0"**	0	0	0	1	1	1	1
Bit No. 5 (2)	**"0"**	0	1	1	0	0	1	1
Bit No. 4 (1)	**"0"**	1	0	1	0	1	0	1

5.3.38 SOFT SWITCH: #38

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Reserved	Reserved	0	2
7			0	
6	V.34 flag number between ECM frame	<*1>	1	
5			0	
4	Phase 2 guard tone power level (V.34)	**"0": Normal power level**	0	1
		1: -7 db of normal power level		
3	Host detects ringing status in low frequency or one cycle	<*2>	0	
2			0	
1	V.8 /V.34 capability	0: No	1	
		"1": Yes		

<*1> V.34 flag number between ECM frame

Flags number	1	2	**3**	15
Bit No. 6	0	0	**"1"**	1
Bit No. 5	0	1	**"0"**	1

<*2> Host detects ringing status in low frequency or one cycle

Time (ms)	**16**	24	36	48
Bit No. 3	**"0"**	0	1	1
Bit No. 2	**"0"**	1	0	1

5.3.39 SOFT SWITCH: #39

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Disable V.34 TX for V.34 modem	**"0": No**	0	0
		1: Yes		
7	Disable V.34 RX for V.34 modem	**"0": No**	0	
		1: Yes		
6	Flags number in FSK for V.34 modem	<*1>	0	
5			0	
4	Manual TX mode for V.34 modem	**"0": V.8 - Start handshake from V.8**	0	1
		1: V.17		
3	Switch from V.17 to V.34 if DIS Bit 6 set after received DIS	**"0": Yes - Start V.8 handshaking. but only first time**	0	
		1: No - Continue start with V.17		

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
2	Delay time in primary channel for V.34 transmit after CFR or MCF signal	<*2>	0	
1			1	

<*1> Flags number in FSK for V.34 modem

Flags number	**1**	2	3	4
Bit No. 6	**"0"**	0	1	1
Bit No. 5	**"0"**	1	0	1

<*2> Delay time in primary channel for V.34 transmit after CFR or MCF signal

Delay time (ms)	100	**200**	300	500
Bit No. 2	0	**"0"**	1	1
Bit No. 1	0	**"1"**	0	1

5.3.40 SOFT SWITCH: #40

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7	RX start select receiving start speed for V.17	<*1>	0	
6			0	
5			0	
4	Reserved	Reserved	0	0
3	V.34 RX start speed prohibit V.34 mode when upper speed less	<*2>	0	
2			0	
1			0	

<*1> RX start select receiving start speed for V.17

Speed (bps)	**V.17**	V.17	V.17	V.17	V.29	V.29	V.27	V.27 ter
	14400	12000	9600	7200	9600	7200	4800	2400
Bit No. 7	**"0"**	0	0	0	1	1	1	1
Bit No. 6	**"0"**	0	1	1	0	0	1	1
Bit No. 5	**"0"**	1	0	1	0	1	0	1

<*2> V.34 RX start speed prohibit V.34 mode when upper speed less

Speed (bps)	**V.34**	V.34	V.34	V.34	V.34	V.34	V.34	V.34
	33600	31200	28800	26400	24000	21600	19200	16800
Bit No. 3	**"0"**	0	0	0	1	1	1	1
Bit No. 2	**"0"**	0	1	1	0	0	1	1
Bit No. 1	**"0"**	1	0	1	0	1	0	1

5.3.41 SOFT SWITCH: #41

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7	TX start speed select receiving start speed for V.17	<*1>	0	
6			0	
5			0	
4	Reserved	Reserved	0	0
3	V.34 TX start speed prohibit V.34 mode when upper speed less	<*2>	0	
2			0	
1			0	

<*1> TX start speed select receiving start speed for V.17

Speed (bps)	**V.17**	V.17	V.17	V.17	V.29	V.29	V.27	V.27 ter
	14400	12000	9600	7200	9600	7200	4800	2400
Bit No. 7	**"0"**	0	0	0	1	1	1	1
Bit No. 6	**"0"**	0	1	1	0	0	1	1
Bit No. 5	**"0"**	1	0	1	0	1	0	1

<*2> V.34 TX start speed prohibit V.34 mode when upper speed less

Speed (bps)	**V.34**	V.34	V.34	V.34	V.34	V.34	V.34	V.34
	33600	31200	28800	26400	24000	21600	19200	16800
Bit No. 3	**"0"**	0	0	0	1	1	1	1

Speed (bps)	**V.34**	V.34	V.34	V.34	V.34	V.34	V.34	V.34
	33600	31200	28800	26400	24000	21600	19200	16800
Bit No. 2	**"0"**	0	1	1	0	0	1	1
Bit No. 1	**"0"**	1	0	1	0	1	0	1

5.3.42 SOFT SWITCH: #42

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7			0	
6			0	
5			0	
4			0	0
3			0	
2			0	
1			0	

5.3.43 SOFT SWITCH: #43

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7			0	
6			0	
5			0	
4			0	0
3			0	
2			0	
1			0	

5.3.44 SOFT SWITCH: #44

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7			0	
6			0	
5			0	
4			0	0
3			0	
2			0	
1			0	

5.3.45 SOFT SWITCH: #45

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7			0	
6	Close network	**"0": Off**	0	
		1: On		
5	Reserved	Reserved	0	
4			0	0
3			0	
2			0	
1			0	

5.3.46 SOFT SWITCH: #46

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Daylight savings timer	**"0": No**	0	0

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
		1: Yes		
7	Reserved	Reserved	0	
6			0	
5			0	
4	RX print mode	0: RX one page then print one page. (PRINT RX)	1	A
		"1": Start to print after receiving all pages. (MEMORY RX)		
3	Default TX mode	**"0": Memory TX**	0	
		1: ADF TX		
2	Header for FAX TX	0: Off	1	
		"1": On - Transmit header at top of each page		
1	Print model name on top of TX page If name not register	**"0": No**	0	
		1: Yes		

- Bit 2:
  Some country such as U.S.A PTT regulation, must be send header at top of each page.
- Bit 1:
  If machine name not registered, the model name will print at the top of each receiving page. (base on custom ID)

5.3.47 SOFT SWITCH: #47

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7			0	
6	RX mode	**"0": Auto RX mode**	0	
		1: Manual RX mode		
5	Footer	**"0": Off**	0	
		1: On - Print footer information at each of received page		
4	Reserved	Reserved	0	0
3			0	
2			0	
1			0	

- Bit 5:
  The footer shows machine number, receiving time, remote side TSI number, session and page number. The details show on the report specification.

5.3.48 SOFT SWITCH: #48

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Activity report	0: No	1	8
		"1": Yes		
7	Reservation report	**"0": No**	0	
		1: Yes		
6	TX result report	**"0": No**	0	
		1: Yes		
5	RX result report	**"0": No**	0	
		1: Yes		
4	TX/RX error report	0: No	1	9
		"1": Yes (During communication have error in TX or RX, the machine printed error report)		
3	Error report for I-FAX and N-Scan	**"0": No**	0	
		1: Yes		
2	If machine receive error mail (I-FAX), the mail is deleted or kept?	**"0": Delete (the mail will be deleted on POP3 server)**	0	
		1: Keep (the mail will be kept on POP3 server)		
1	Broadcast report	0: Not to print	1	
		"1": Print		

5.3.49 SOFT SWITCH: #49

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7			0	
6	Print RX mailbox report method	**"0": Base on RX RESULT REPORT setting**	0	
		1: Always printing		
5	Re-dial method if comm. fail	**"0": Re-dial again**	0	
		1: Base on re-dial time interval		
4	No. of rings	<*1>	0	1
3			0	
2			0	
1			1	

<*1> No. of rings

No. of rings	1	**2**	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Bit No. 4	0	**"0"**	0	0	0	0	0	0	1	1	1	1	1	1	1	1
Bit No. 3	0	**"0"**	0	0	1	1	1	1	0	0	0	0	1	1	1	1
Bit No. 2	0	**"0"**	1	1	0	0	1	1	0	0	1	1	0	0	1	1
Bit No. 1	0	**"1"**	0	1	0	1	0	1	0	1	0	1	0	1	0	1

5.3.50 SOFT SWITCH: #50

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Transmit or cancel after time out in "Memory TX"	**"0": Cancel and print out report**	0	4
		1: Transmission		
7	It is possible to register E-mail address in relay box registration	0 : Disable (any E-mail address could not be registries in relay box)	1	
		"1" : Enable (any E-mail address could be registries in relay box)		
6	Ring on time to ignore ring off time at 1st cycle	<*1>	0	
5			0	
4			1	
3	Ring off time at 1st cycle to approve incoming ring	<*2>	0	9
2			0	
1			1	

- Bit 8:
  Can select cancel this job and print out report or start to send in case of time when memory full condition occurs.
- Bit 7:
  If F-NIC was install, this bit was usable in relay box. If bit was set, any E-mail address could be registered in relay box. If bit was reset, any E-mail address could not be registered in relay box.

<*1> Ring on time to ignore ring off time at 1st cycle

Timer	100 ms	**150 ms**	200 ms	300 ms	1 s
Bit No. 6	0	**"0"**	0	0	1
Bit No. 5	0	**"0"**	1	1	0
Bit No. 4	0	**"1"**	0	1	0

<*2> Ring off time at 1st cycle to approve incoming ring

Timer	100 ms	**200 ms**	500 ms	1 s	1.5 s
Bit No. 3	0	**"0"**	0	0	1
Bit No. 2	0	**"0"**	1	1	0
Bit No. 1	0	**"1"**	0	1	0

5.3.51 SOFT SWITCH: #51

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7			0	
6	Max pages of T30 monitor report	<*1>	0	
5			0	
4	T30 monitor report selection	<*2>	0	0
3			0	

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
2	Send unsent page mode for memory transmission	**"0": From error page**	0	
		1: From start page		
1	Reserved	Reserved	0	

<*1> Max pages of T30 monitor report

Description	**1**	5	10	No limitation
Bit No. 6	**"0"**	0	1	1
Bit No. 5	**"0"**	1	0	1

<*2> T30 monitor report selection

Description	**Not to print**	Print report for each transaction	Print report while reporting error	Not used
Bit No. 4	**"0"**	0	1	1
Bit No. 3	**"0"**	1	0	1

5.3.52 SOFT SWITCH: #52

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7			0	
6			0	
5			0	
4			0	0
3			0	
2			0	
1			0	

5.3.53 SOFT SWITCH: #53

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7			0	
6			0	
5			0	
4			0	0
3			0	
2			0	
1			0	

5.3.54 SOFT SWITCH: #54

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Report Date/Time type	0: Digits format	1	A
		"1": Alpha numeric format		
7	Report Date/Time format	<*1>	0	
6			1	
5	Memory near full capacity for scanning	<*2>	0	
4			1	8
3	Reserved	Reserved	0	
2			0	
1			0	

<*1> Report Date/Time format

- When bit No.8 is "1".

Date/Time	2008. MAR. 25	**MAR. 25. 2008**	25. MAR. 2008
Bit No. 7	0	**"0"**	1
Bit No. 6	0	**"1"**	0

- When bit No.8 is "0".

Date/Time	2008. 11. 25	**11. 25. 2008**	25. 11. 2008
Bit No. 7	0	**"0"**	1
Bit No. 6	0	**"1"**	0

<*2> Memory near full capacity for scanning

Description (KB)	256	**512**	1024	1536
Bit No. 5	0	**"0"**	1	1
Bit No. 4	0	**"1"**	0	1

5.3.55 SOFT SWITCH: #55

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	DC characteristics	<*1>	0	0
7			0	
6			0	
5	Reserved	Reserved	0	
4			0	1
3			0	
2			0	
1	Fast edge pulse dial	0: No	1	
		"1": Yes		

<*1> DC characteristics

Value	**DC1**	DC2	DC3	DC4	DC0_1	DC0_2	DC0_3	DC0_4
Bit No. 8	**"0"**	0	0	0	1	1	1	1
Bit No. 7	**"0"**	0	1	1	0	0	1	1
Bit No. 6	**"0"**	1	0	1	0	1	0	1

5.3.56 SOFT SWITCH: #56

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Pulse dial setup ($74C)	<*1>	0	0
7			0	
6			0	
5			0	
4	Pulse dial clear ($74D)	<*2>	1	9
3			0	
2			0	
1			1	

<*1> Pulse dial setup

Value (ms)	**0**	10	20	30	40	50	60	70	80	90	Reserved					
Bit No. 8	**"0"**	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
Bit No. 7	**"0"**	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
Bit No. 6	**"0"**	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
Bit No. 5	**"0"**	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1

<*2> Pulse dial clear

Value (ms)	0	10	20	30	40	50	60	70	80	**90**	Reserved					
Bit No. 4	0	0	0	0	0	0	0	0	1	**"1"**	1	1	1	1	1	1
Bit No. 3	0	0	0	0	1	1	1	1	0	**"0"**	0	0	1	1	1	1
Bit No. 2	0	0	1	1	0	0	1	1	0	**"0"**	1	1	0	0	1	1
Bit No. 1	0	1	0	1	0	1	0	1	0	**"1"**	0	1	0	1	0	1

5.3.57 SOFT SWITCH: #57

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7			0	
6			0	
5	Compensation for loading from bridge capacitor	**"0": Loading**	0	
		1: Not loading		

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
4	Reserved	Reserved	0	0
3	Resistance for pulse dialing	<*1>	0	
2			0	
1			0	

<*1> Resistance for pulse dialing

Value (ohm)	**100**	200	300	400	500	600	700	800
Bit No. 3	**"0"**	0	0	0	1	1	1	1
Bit No. 2	**"0"**	0	1	1	0	0	1	1
Bit No. 1	**"0"**	1	0	1	0	1	0	1

5.3.58 SOFT SWITCH: #58

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Time out from PSK to FSK delay time	**"0": 6 sec.**	0	0
		1: 30 sec.		
7	Reserved	Reserved	0	0
6			0	
5			0	
4			0	0
3			0	
2			0	
1			0	

- Bit 8:
  This is the delay time for PSK signal after sending MCF or PPR command. The timer depends on each country regulation.

5.3.59 SOFT SWITCH: #59

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Reserved	Reserved	0	1
7			0	
6	Time Between GMT (Greenwich Mean Time)	<*1>	0	
5			1	
4			0	0
3			0	
2			0	
1			0	

- Bit 6-1:
  This value must be entered correctly, or E-mail headers will be wrong. A good reference web site may be found at http://greenwichmeantime.com
  Available ranges are:12 to -12, in half hour increments. The default setting is zero.

<*1> Time Between GMT

Time between mean time	Greenwich mean time + T									
	+00:00	+00:30	+01:00	+01:30	+02:00	+02:30	+03:00	+03:30	+04:00	+04:30
Bit No. 6	0	0	0	0	0	0	0	0	0	0
Bit No. 5	0	0	0	0	0	0	0	0	0	0
Bit No. 4	0	0	0	0	0	0	0	0	1	1
Bit No. 3	0	0	0	0	1	1	1	1	0	0
Bit No. 2	0	0	1	1	0	0	1	1	0	0
Bit No. 1	0	1	0	1	0	1	0	1	0	1

Time between mean time	Greenwich mean time + T									
	+05:00	+05:30	+06:00	+06:30	+07:00	+07:30	**+08:00**	+08:30	+09:00	+09:30
Bit No. 6	0	0	0	0	0	0	**"0"**	0	0	0
Bit No. 5	0	0	0	0	0	0	**"1"**	1	1	1
Bit No. 4	1	1	1	1	1	1	**"0"**	0	0	0
Bit No. 3	0	0	1	1	1	1	**"0"**	0	0	0
Bit No. 2	1	1	0	0	1	1	**"0"**	0	1	1
Bit No. 1	0	1	0	1	0	1	**"0"**	1	0	1

Time between mean time	Greenwich mean time + T									
	+10:00	+10:30	+11:00	+11:30	+12:00	-00:30	-01:00	-01:30	-02:00	-02:30
Bit No. 6	0	0	0	0	0	1	1	1	1	1
Bit No. 5	1	1	1	1	1	0	0	0	0	0
Bit No. 4	0	0	0	0	1	0	0	0	0	0
Bit No. 3	1	1	1	1	0	0	0	0	1	1
Bit No. 2	0	0	1	1	0	0	1	1	0	0
Bit No. 1	0	1	0	1	0	1	0	1	0	1

Time between mean time	Greenwich mean time + T									
	-03:00	-03:30	-04:00	-04:30	-05:00	-05:30	-06:00	-06:30	-07:00	-07:30
Bit No. 6	1	1	1	1	1	1	1	1	1	1
Bit No. 5	0	0	0	0	0	0	0	0	0	0
Bit No. 4	0	0	1	1	1	1	1	1	1	1
Bit No. 3	1	1	0	0	0	0	1	1	1	1
Bit No. 2	1	1	0	0	1	1	0	0	1	1
Bit No. 1	0	1	0	1	0	1	0	1	0	1

Time between mean time	Greenwich mean time + T									Reserved						
	-08:00	-08:30	-09:00	-09:30	-10:00	-10:30	-11:00	-11:30	-12:00							
Bit No. 6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Bit No. 5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Bit No. 4	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1
Bit No. 3	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	1
Bit No. 2	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	1
Bit No. 1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1

5.3.60 SOFT SWITCH: #60

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Reserved	Reserved	0	6
7	Fax data divide printer (A3 -> A4; B4 -> B5, A4 -> A5)	0: Enable, RX capability up to B4 or A3	1	
		"1": Disable, RX capability is A4		
6	Quick memory TX	0: Ineffective	1	
		"1": Effective		
5	B4/A3 declaration for Ledger	**"0": A3 size**	0	
		1: B4 size		
4	The width of TX Ledger (8K)	**"0": A3 size**	0	0
		1: B4 size		
3	Print mailbox RX image even password are not correct	**"0": No**	0	
		1: Yes		
2	Off hook alarm after communication	**"0": Alarm**	0	
		1: Not alarm after communication		
1	Display destination selection within TX phase C	**"0": Local name or telephone number**	0	
		1: Remote telephone number		

- Bit 5:
  If this bit set to "0", machine will indicate A3 printing capability in DIS command if machine have Ledger paper.
- Bit 4:
  If this bit set to "0", the width of Ledger as handle as A3 size, but the zoom ratio is not perform. If this bit set to "1", the width of Ledger as handle as B4. However, when the transmission is performed at the same zoom ratio, an image will be lost. Therefore transmission is started after reducing the width of the image.
- Bit 3:
  If this bit set to "1", machine will print out the incoming page even if password is not correct.

5.3.61 SOFT SWITCH: #61

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7			0	
6			0	
5			0	
4	Max. No. of ring	<*1>	1	F

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
3			1	
2			1	
1			1	

<*1> Max. No. of ring

No. of rings	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	**16**
Bit No. 4	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	**"1"**
Bit No. 3	0	0	0	0	1	1	1	1	0	0	0	0	1	1	1	**"1"**
Bit No. 2	0	0	1	1	0	0	1	1	0	0	1	1	0	0	1	**"1"**
Bit No. 1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	**"1"**

5.3.62 SOFT SWITCH: #62

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7			0	
6			0	
5			0	
4			0	0
3			0	
2			0	
1			0	

5.3.63 SOFT SWITCH: #63

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	"#" key definition in PBX mode	0: "#" is internal key, machine (PSTN) default is external	1	8
		"1": "#" is external key, machine (PBX) default is internal		
7	Reserved	Reserved	0	
6			0	
5			0	
4			0	0
3			0	
2	Fax TX image adjust	**"0": Normal**	0	0
		1: Special handle		
1	TX result report with image	**"0": Yes**	0	
		1: No		

- Bit 8:
  If this bit set to "1", the # key is use to access PSTN line after dial the pre-fix number. If this bit set to "0", the # key is use to access PBX line instead of PSTN line.
- Bit 1:
  This bit set to "1", the first page image will not append at the bottom of error report or OK report.

5.3.64 SOFT SWITCH: #64

Bit No.	Designation	Function	Initial setting	
			Bit	HEX
8	Reserved	Reserved	0	0
7			0	
6	Print RX error report in RX side if no any FAX signal detected	**"0": No**	0	
		1: Yes		
5	10 PPS & 20 PPS selectable by user	**"0": No**	0	
		1: Yes		
4	Reserved	Reserved	0	0
3			0	
2			0	
1			0	

- Bit 6:
  If this bit set to "1", machine do not print put RX error report if no detect any FAX signal from the other party.
- Bit 5:

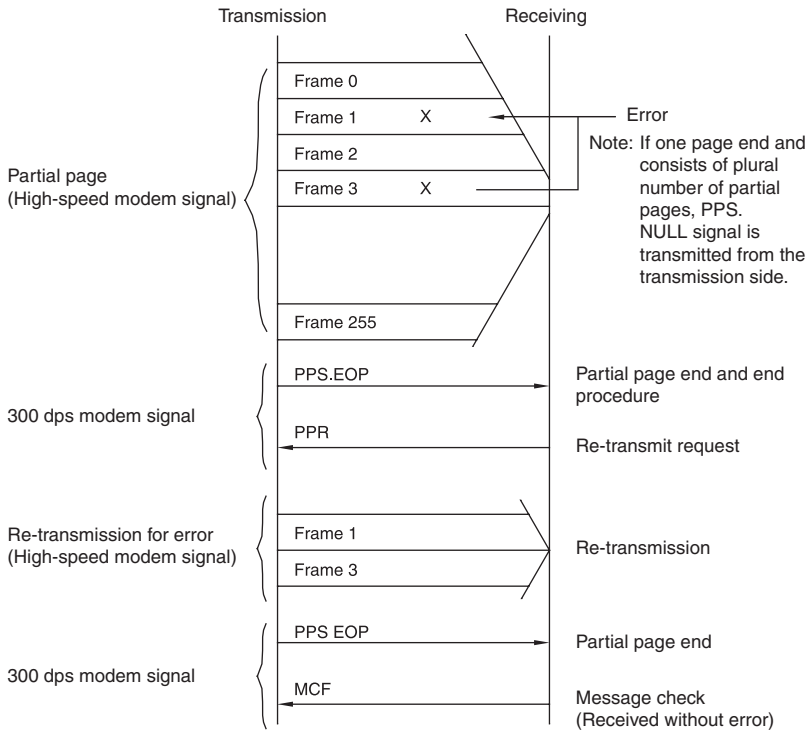
Can not open by user to change PPS if this bit set to “0”.

6. FAX PROTOCOLS

6.1 G3 ECM (G3 Error Correction Mode)

- G3 ECM is the error correction system newly recommended by consultative committee of International telephone & telegraph of 1988.
- By G3 ECM, documents are divided into blocks (called partial page) for transmission. If any error takes place in any frame (one partial page consists of 256 frames at a maximum) on a partial page, the receiving party generates the retransmit request with erroneous frame numbers.

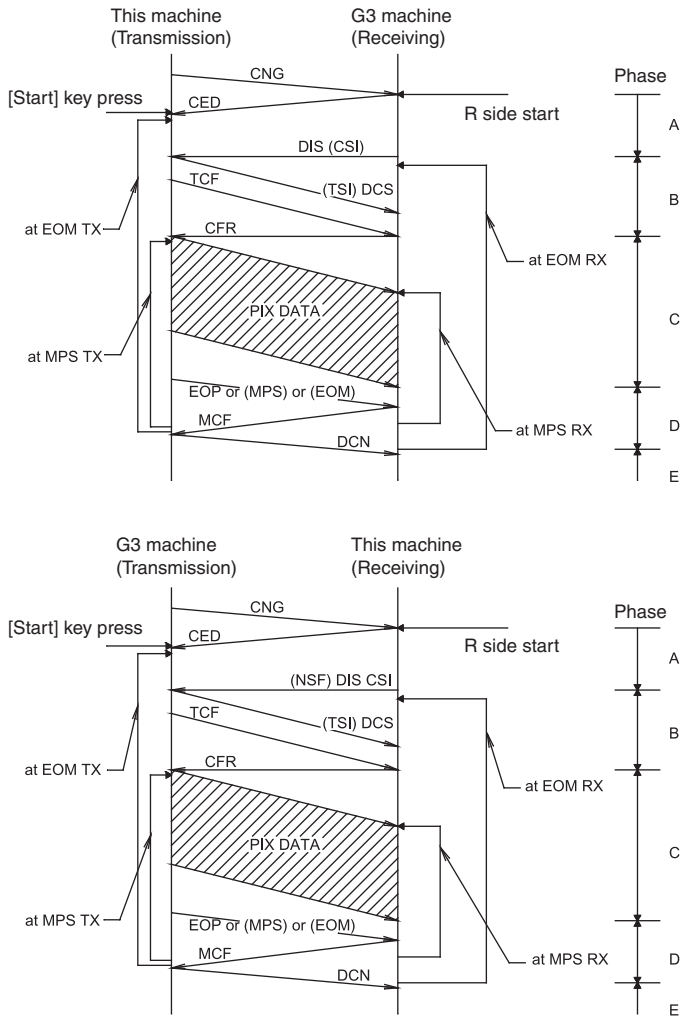
Here is an example where frame 1 and frame 3 are subjected to error:



6.2 Line control

6.2.1 Procedure of G3 mode communication

- Basic communications diagram of G3 mode.



Drawing: Line Control

6.3 Table of reference code

Code	Function
CFR	Confirmation to Receive. 1850 Hz or 1650 Hz 3 sec.
CIG	Calling Station Identification.
CRP	Command Repeat.
CSI	Called Subscriber Identification.
DCN	Disconnect.
DCS	Digital Identification Signal.
DIS	Digital Transmit Command.
DTC	Digital Transmit Command.
EOM	End of Message. 1,100 Hz.
EOP	End of Procedure.
FTT	Failure to Train.
MCF	Message Confirmation. 1,650 Hz or 1,850 Hz.
MPS	Multi-Page Signal.
NCS	Non-Standard Facilities Command.
NCF	Non-Standard Facilities.
NSS	Non-Standard Facilities Set-up.
PIN	Procedural Interrupt Negative.
PIP	Procedural Interrupt Positive.
PRI-EOM	Procedure Interrupt-End of Message (COM).
PRI-MPS	Procedure Interrupt-Multi page Signal (MPS).
PRI-EOP	Procedure Interrupt-End of Procedure (EOP).
RTN	Retrain Negative.

Code	Function
RTP	Retrain Positive.
TSI	Transmitting Station Identification.

6.4 How to analyze the T30 protocol monitor

- DCS or DIS
- HEX Data as printed on page.
- Example: V.17 Communication

PROTOCOL MONITOR REPORT

NAME: ABC
TEL:886 3 4733507
DATE: APR.23'04 12:20

SESSION	FUNCTION	NO	DESTINATION STATION	DATE	TIME	PAGE	DURATION	MODE	RESULT
0001	TX	01	ABC 22345678901234567890	DEC.02	15:00	008	00h00min00s	ECM-12	OK

RING	DATA
ON Time (ms)	1200 1200 1200 1200 1200 1200 1200 1200 1200 1200 1200 1200 1200 1200 1200 1200 1200
OFF Time (ms)	3000 3000 3000 3000 3000 3000 3000 3000 3000 3000 3000 3000 3000 3000 3000 3000 3000

TX	RX

DATA

FF 13 83 00 46 88 00 ..

- FIF (Facsimile Information Field)
- FCF (Facsimile Control Field) = 83: DCS, 80: DIS
- Means Last Control Field.
- Means address

- FIF (Facsimile Information Field)

HEX	1																2													
	0				0				4				6				8				8				0				0			
Data Bit	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Bit No.	8	7	6	5	4	3	2	1	16	15	14	13	12	11	10	9	24	23	22	21	20	19	18	17	32	31	30	29	28	27	26	25
Note	↑ ↑ ↑ ↑ ↑ Bit No.11= 1, Bit No.12=0 7200 bps Bit No.15= 1 R8 x 7.7 Lines/mm (Fine Mode) Bit No.19= 0, Bit No.20=1 Unlimited Paper Length																															

- Hex-Binary Conversion List

Hex	Binary				Hex	Binary				Hex	Binary				Hex	Binary			
0	0	0	0	0	4	0	1	0	0	8	1	0	0	0	C	1	1	0	0
1	0	0	0	1	5	0	1	0	1	9	1	0	0	1	D	1	1	0	1
2	0	0	1	0	6	0	1	1	0	A	1	0	1	0	E	1	1	1	0
3	0	0	1	1	7	0	1	1	1	B	1	0	1	1	F	1	1	1	1

- DIS (DTC) / DCS Bit Allocation Table of FIF (Facsimile Information Field)

Bit No.	Designation	DIS/DTC	DCS
1	"0"= Invalid "1"= Store-and-forward switching Internet fax simple mode		
2	Set to "0"		
3	"0"= Invalid "1"= Real-time Internet fax		
4	Set to "0"		
5	Set to "0"		
6	"0"= Invalid "1"= V.8 capabilities		Invalid
7	Flame size	"0" = 256 octets preferred "1"= 64 octets preferred	Invalid
8	Set to "0"		

Bit No.	Designation	DIS/DTC	DCS
9	"0"= Invalid "1"= Ready to transmit a facsimile document (polling)		Set to "0"
10	"0"= Invalid "1"= Receiver fax operation		
11	Data signalling rate	<*1>	
12			
13			
14			
15	"0"= Invalid "1"= R8 × 7.7 lines/mm and/or 200 × 200 pels/25.4 mm		
16	"0"= Invalid "1"= Two-dimensional coding capability		"0"= Invalid "1"= Two-dimensional coding
17	Recording width capabilities	<*2>	
18			
19	Recording length capability	<*3>	
20			
21	Minimum scan line time capability at the receive	<*4>	
22			
23			
24	Extension field	"0"= Without "1"= With	
25	Reserved		
26	"0"= Invalid "1"= Un-compressed mode		
27	"0"= Invalid "1"= ECM		
28	Set to "0"		Frame size 0: 256 octets Frame size 1: 64 octets
29	Set to "0"		
30	Set to "0"		
31	"0"= Invalid "1"= T.6 coding capability		"0"= Invalid "1"= T.6 coding enabled
32	Extend field	"0"= Without "1"= With	
33	"0"= Invalid "1"= Field not valid capability		
34	"0"= Invalid "1"= Multiple selective polling capability		Set to "0"
35	"0"= Invalid "1"= Polling sub address transmission (DTC) by Polled Sub Address (DIS)/ PSA		Set to "0"
36	"0"= Invalid "1"= T.43 coding		
37	"0"= Invalid "1"= Plane interleave		
38	Set to "0"		
39	Set to "0"		
40	Extend field	"0"= Without "1"= With	
41	"0"= Invalid "1"= R8 x 15.4 lines/mm		
42	"0"= Invalid "1"= 300 x 300 pels/25.4 mm		
43	"0"= Invalid "1"= R16 x 15.4 lines/mm and/or 400 x 400 pels/25.4 mm		
44	"0"= Invalid "1"= Inch based resolution preferred		Resolution type selection "0"= metric based resolution "1"= inch based resolution
45	"0"= Invalid "1"= Metric based resolution preferred		Do not care
46	Minimum scan line time capability for higher resolutions.	"0": T 15.4 = T 7.7 "1": T 15.4 = 1/2 T 7.7	Do not care
47	"0"= Invalid		Set to "0"

Bit No.	Designation	DIS/DTC	DCS
	"1"= Selective polling (DIS)/ Selective polling transmission (DTC)		
48	Extend field	0: Without 1: With	
49	"0"= Invalid "1"= Sub Addressing capability		"0"= Invalid "1"= Sub Addressing transmission
50	"0"= Invalid "1"= Password/ Sender Identification capability (DIS)/ Password transmission (DTC)		"0"= Invalid "1"= Sender Identification transmission
51	"0"= Invalid "1"= Ready to transmit a data file (polling)		Set to "0"
52	Set to "0"		
53	"0"= Invalid "1"= Binary File Transfer (BFT)		
54	"0"= Invalid "1"= Document Transfer Mode (DTM)		
55	"0"= Invalid "1"= EDIFACT Transfer (EDI)		
56	Extend field	0: Without 1: With	
57	"0"= Invalid "1"= Basic Transfer Mode (BTM)		
58	Set to "0"		
59	"0"= Invalid "1"= Ready to transmit a character or mixed mode document (polling)		Set to "0"
60	"0"= Invalid "1"= Character mode		
61	Set to "0"		
62	"0"= Invalid "1"= Mixed mode		
63	Set to "0"		
64	Extend field	"0"= Without "1"= With	
65	"0"= Invalid "1"= Processable mode 26		
66	"0"= Invalid "1"= Digital network capability		
67	Duplex and half duplex capabilities	"0"= Half duplex operation only "1"= Duplex and half duplex operation	"0"= Half duplex operation only "1"= Duplex operation
68	"0"= Invalid "1"= JPEG coding		
69	"0"= Invalid "1"= Full color mode		
70	Set to "0"		"0"= Invalid "1"= Preferred Huffman tables
71	"0"= Invalid "1"= 12 bit/pixel/element		
72	Extend field	"0"= Without "1"= With	
73	"0"= Invalid "1"= No sampling (1:1:1)		
74	"0"= Invalid "1"= Nonstandard radiation light		
75	"0"= Invalid "1"= Nonstandard is mute range		
76	"0"= Invalid "1"= North American Letter (215.9 mm × 279.4 mm) capacity		"0"= Invalid "1"= North American Letter (215.9 mm × 279.4 mm)
77	"0"= Invalid "1"= North American Legal (215.9 mm × 355.6 mm) capacity		"0"= Invalid "1"= North American Legal (215.9 mm × 355.6 mm)
78	"0"= Invalid "1"= Single layer sequential encoding, basic capacity		"0"= Invalid "1"= Single layer sequential encoding, basic
79	"0"= Invalid "1"= Single layer sequential encoding, optional L0 capacity		"0"= Invalid "1"= Single layer sequential encoding, optional L0
80	Extend field	"0"= Without	

Bit No.	Designation	DIS/DTC	DCS
		"1"= With	
81	"0"= Invalid "1"= HKM key management capacity		"0"= Invalid "1"= HKM key management selection
82	"0"= Invalid "1"= RSA key management capacity		"0"= Invalid "1"= RSA key management selection
83	"0"= Invalid "1"= Override mode capacity		"0"= Invalid "1"= Override mode function
84	"0"= Invalid "1"= HFX40 code capacity		"0"= Invalid "1"= HFX40 code selection
85	"0"= Invalid "1"= Alternative code number 2 capacity		"0"= Invalid "1"= Alternative code number 2 selection
86	"0"= Invalid "1"= Alternative code number 3 capacity		"0"= Invalid "1"= Alternative code number 3 selection
87	"0"= Invalid "1"= HFX40-1 hashing capacity		"0"= Invalid "1"= HFX40-1 hashing selection
88	Extend field	"0"= Without "1"= With	
89	"0"= Invalid "1"= Alternative hashing system number 2 capacity		"0"= Invalid "1"= Alternative hashing system number 2 selection
90	"0"= Invalid "1"= Alternative hashing system number 3 capacity		"0"= Invalid "1"= Alternative hashing system number 3 selection
91	Reserved		
92	"0"= Invalid "1"= T.44 (Mixed raster content) mode		
93	"0"= Invalid "1"= T.44 (Mixed raster content) mode		
94	"0"= Invalid "1"= T.44 (Mixed raster content) mode		
95	"0"= Invalid "1"= Page length maximum strip size for T.44 (Mixed raster content)		
96	Extend field	"0"= Without "1"= With	
97	"0"= Invalid "1"= Color/mono-color multi-value 300 pixels x 300 pixels or 400 pixels x 400 pixels / 25.4 mm		
98	"0"= Invalid "1"= R4 x 3.85 lines/mm and/or 100 pixels x 100 pixels / 25.4 mm for color/mono-color multi-value		
99	"0"= Invalid "1"= Single phase C BFT negotiation capacity		
100	Set to "0"		
101	Set to "0"		
102	Set to "0"		
103	Set to "0"		
104	Extend field	"0"= Without "1"= With	

<*1> Data signalling rate

Bit No.				Data signalling rate	
14	13	12	11	DIS/DTC	DCS
0	0	0	0	V.27 ter fall-back mode	2400 bit/s, rec. V.27ter
0	0	0	1	Rec. V.29	9600 bit/s, rec. V.29
0	0	1	0	Rec. V.27 ter	4800 bit/s, rec. V.27ter
0	0	1	1	Rec. V.27 ter and V.29	7200 bit/s, rec. V.29
0	1	0	0	Not used	Invalid
0	1	0	1	Not used	Reserved
0	1	1	0	Reserved	Invalid
0	1	1	1	Reserved	
1	0	0	0	Not used	14,400 bit/s, rec. V.17
1	0	0	1	Not used	9,600 bit/s, rec. V.17
1	0	1	0	Reserved	12,000 bit/s, rec. V.17
1	0	1	1	Rec. V.27 ter, V.29, V33 and V.17	7,200 bit/s, rec. V.17
1	1	0	0	Not used	Reserved
1	1	0	1	Not used	Reserved

Bit No.				Data signalling rate	
14	13	12	11	DIS/DTC	DCS
1	1	1	0	Reserved	
1	1	1	1	Reserved	

<*2> Recording width capabilities

Bit No.		Data signalling rate	
18	17	DIS/DTC	DCS
0	0	Scan line length 215 mm ± 1%	
0	1	Scan line length 215 mm ± 1% and scan line length 255 mm ± 1%	Scan line length 255 mm ± 1%
1	0	Scan line length 215 mm ± 1% and scan line length 255 mm ± 1% and scan line length 303 mm ± 1%	Scan line length 303 mm ± 1%
1	1	Invalid	

<*3> Recording length capability

Bit No.		Recording length capability	
20	19	DIS/DTC	DCS
0	0	A4 (297 mm)	
0	1	A4 (297 mm) and B4 (364 mm)	B4 (364 mm)
1	0	Unlimited	
1	1	Invalid	

<*4> Minimum scan line time capability at the receive

Bit No.			Minimum scan line time capability	
23	22	21	DIS/DTC	DCS
0	0	0	20 ms at 3.85 1/mm: T 7.7 = T 3.85	20 ms
0	0	1	5 ms at 3.85 1/mm: T 7.7 = T 3.85	5 ms
0	1	0	10 ms at 3.85 1/mm: T 7.7 = T 3.85	10 ms
0	1	1	20 ms at 3.85 1/mm: T 7.7 = 1/2 T 3.85	
1	0	0	40 ms at 3.85 1/mm: T 7.7 = T 3.85	40 ms
1	0	1	40 ms at 3.85 1/mm: T 7.7 = 1/2 T 3.85	
1	1	0	10 ms at 3.85 1/mm: T 7.7 = 1/2 T 3.85	
1	1	1	0 ms at 3.85 1/mm: T 7.7 = T 3.85	0 ms

7. MECHANICAL ADJUSTMENT PF-507

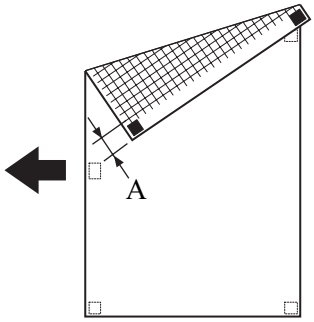
7.1 Paper reference position (PF-507)

7.1.1 Use

- Use this feature when the image on the copy is shifted in the main scanning direction.
- Used when the PH unit has been replaced.

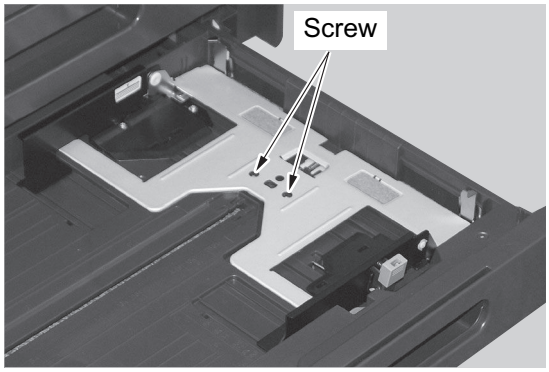
7.1.2 Specification

- Make an adjustment so that the width A on the test copy is within the specified range.
- Specification: 20 ± 2.0 mm (A4), 11.2 mm± 2.0 mm (Letter)

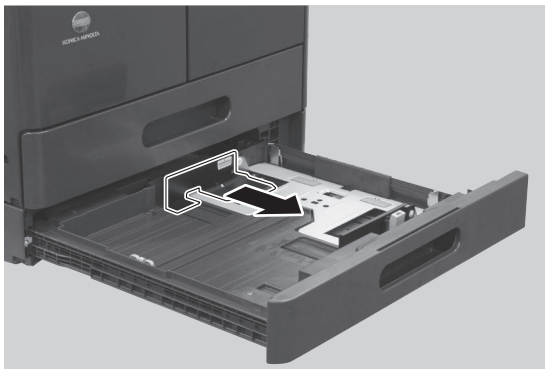


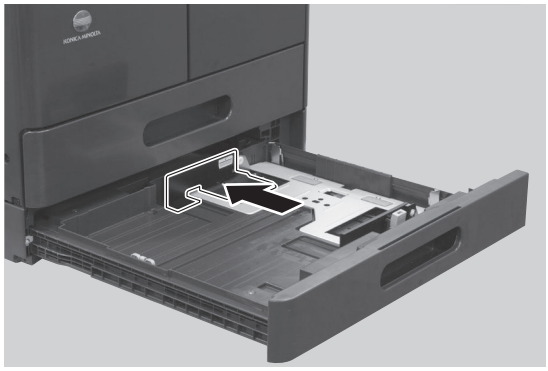
7.1.3 Procedure

1. Load the tray 2 with A4 or Letter plain paper.
2. Enter function of the SERVICE MODE.
3. Select [FUNCTION] -> [PRN TEST PATTERN], and press the OK key.
4. Select [TRAY 2] -> [PATTERN 1], and press the OK key.
   This will produce a test pattern.
5. Check whether the width A on the test pattern falls within the specified range.
   If the width A falls out of the specified range, perform the following steps to make an adjustment.



6. Slide the paper feed tray out and remove the paper.
7. Loosen two screws.
8. While checking the marks on the paper feed tray, move the rear paper guide plate and tighten the loosened screws.
   - If the width A is longer than the specifications, move the paper guide plate to the front.





9. Make a test print and check the amount of misalignment.

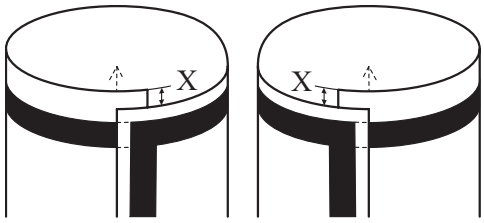
- If the width A is shorter than the specifications, move the paper guide plate to the rear.

8. MECHANICAL ADJUSTMENT DF-625

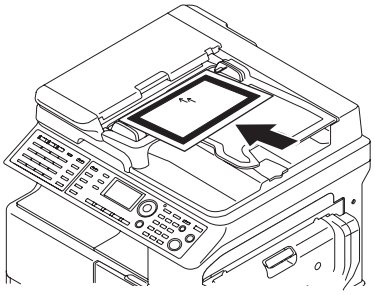
8.1 Adjusting skew feed (DF-625)

8.1.1 Use

1. Check how the edges of the chart are misaligned.
   The amount of the deviation of the chart will be X.

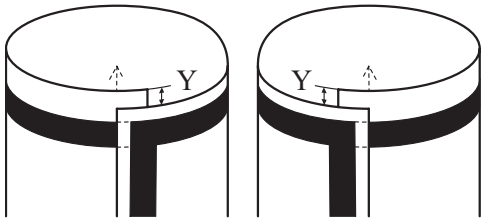


Deviation in + (plus) Deviation in - (minus)



2. Place the chart in the document feed tray (with the side having an arrow facing up).

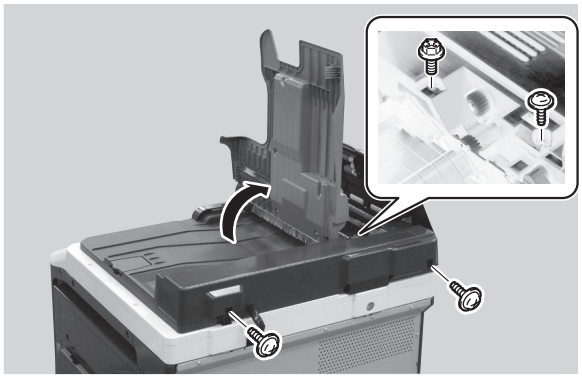
3. Make copies 5 times repeatedly in single side mode.
4. Fold all 5 sample copies as illustrated and check for any deviation.
   Deviation on the sample will be Y.
5. Obtain the difference between the deviation of the chart and the deviation of the sample.
   - Difference of the deviation = Y – X
   - Specification: 0±2.0 mm
6. If the difference of the deviation does not fall within the specified range, perform the following adjustment.



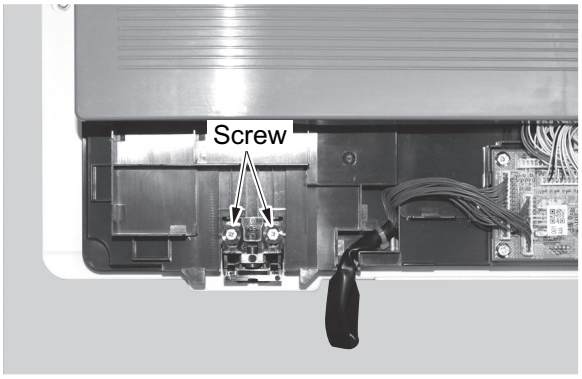
Deviation in + (plus) Deviation in - (minus)

7. Open the top cover.

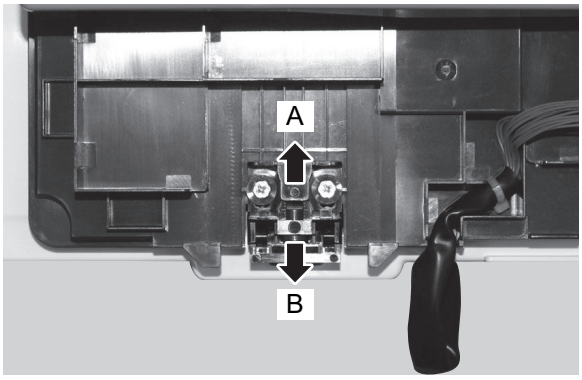




8. Raise the document feed tray. Remove 4 screws and remove the rear cover.



9. Loosen the indicated 2 screws and adjust the reverse automatic document feeder performing the steps described below.



10. Move the reverse automatic document feeder in the direction of the arrow to adjust its position using the marks as a guide.
NOTE
- **If the difference of the deviations is a positive number, move it to the direction A.**
- **If the difference of the deviation is a negative number, move it to the direction B.**

11. Tighten the screws loosened in step 9.
12. Attach the removed rear cover. (4 screws)
13. Closed the document feed tray.

J REWRITING OF FIRMWARE

1. Rewriting of firmware

1.1 Outline

The following types of firmware can be rewritten. To rewrite firmware, MFP and PC must be connected using the USB cable and the updater must be started from PC. Depending on the combination of boards, the required types of firmware is different.

Main FW, NIC FW, PCL FW

Combination of boards	Required firmware
MFP board	Copier FW (Main FW)
MFP board + NIC board	Copier FW (Main FW) , NIC FW
MFP board + PCL board	Copier FW (Main FW) , PCL FW
MFP board + FAX board	Fax FW (Main FW)
MFP board + FAX board + NIC board	Fax FW (Main FW) , NIC FW
MFP board + FAX board + PCL/NIC board	Fax FW (Main FW) , PCL FW

Engine FW

Product name	Required firmware file
bizhub 235	A3PE-XXX-XXX-XXX-XXX.bin
bizhub 215	
bizhub 195	A3R2-XXX-XXX-XXX-XXX.bin

1.2 Preparation

NOTE

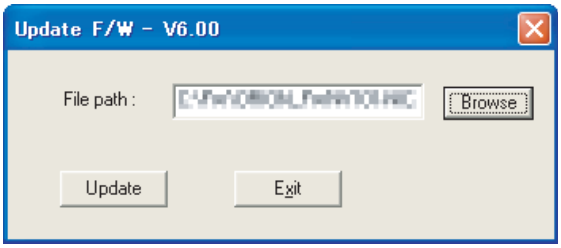
- **Before rewriting the firmware, install the Printer drivers (GDI/PCL Driver) on the host computer used for the firmware rewrite.**
- **Before rewriting the firmware, copy the firmware rewriting tool, "UpdateFW.exe " and “UpdateFW.ini” to the host computer used for the firmware rewrite.**
- **When rewriting multiple types of firmware, you can rewrite them in a desired order.**

1.3 Rewriting method

1. Connect the machine and PC using the USB cable.
2. Copy the firmware rewriting tool and rewriting program in any arbitrary directory of the PC.
3. Double-click "UpdateFW.exe".



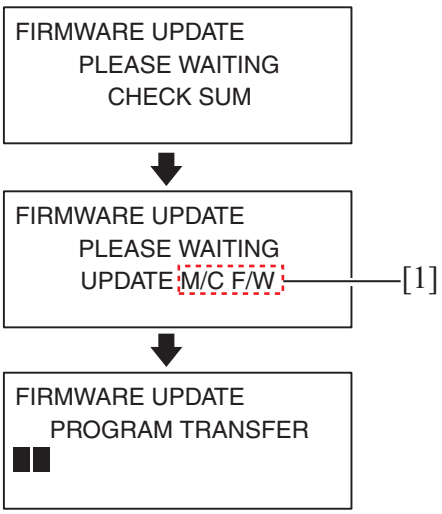
4. Click [Browse] and select File path, "XXXXX.bin".
5. Click [Update].



6. Firmware rewriting starts.
7. Check the display for status of the firmware rewriting sequence.

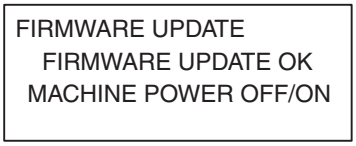
NOTE

- **Do not turn off the copier while its firmware is being rewritten.**

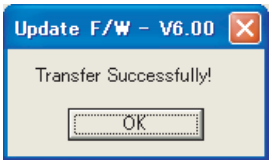


- The area shown as [1] indicates the type of firmware.

8. When the following message appears in the display, it indicates that rewriting of the firmware has been completed.



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

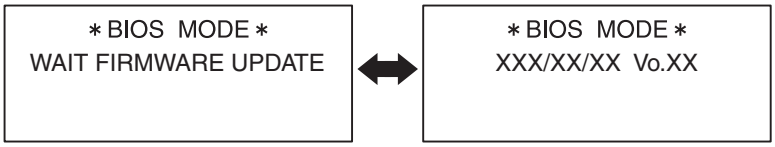


10. Turn OFF and ON the power switch of the machine, and confirm the firmware version.
I.4.6.7 MAIN F/W VER., I.4.6.8 ENGINE F/W VER., I.4.6.9 PCL F/W VER., I.4.6.10 NIC F/W VER.
11. To rewrite multiple types of firmware, repeat steps 3 to 10.

2. Procedure when upgrading the firmware has failed

- Perform the procedure described below if normal firmware update fails, if MFP does not start properly after update, or if you rewrite BIOS FW.

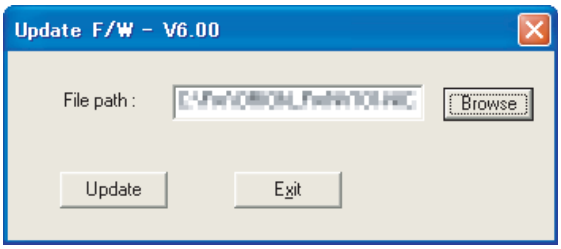
1. While pressing the [Function] key and the [Utility] keys on the control panel at the same time on MFP, turn the power ON.
2. Check to make sure that [BIOS MODE] is displayed on the control panel.



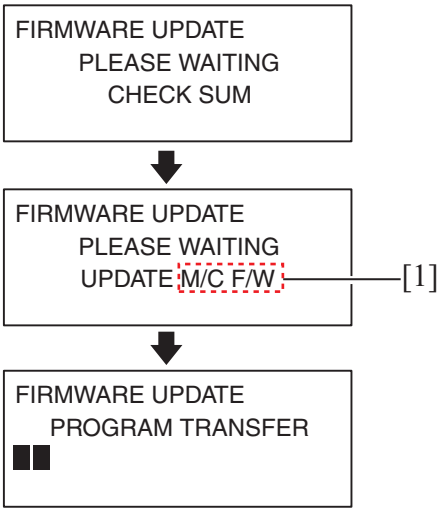
3. Connect the machine and PC using the USB cable.
4. Copy the firmware rewriting tool (“UpdateFW.exe”, “UpdateFW.ini”) and rewriting program in any arbitrary directory of the PC.
5. Double-click "UpdateFW.exe".



6. Click [Browse] and select File path, "XXXXX.bin".
7. Click [Update].



8. Firmware rewriting starts.
9. Check the display for status of the firmware rewriting sequence.
   NOTE
   - **Do not turn off the copier while its firmware is being rewritten.**

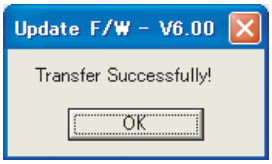


   - The area shown as [1] indicates the type of firmware.

10. When the following message appears in the display, it indicates that rewriting of the firmware has been completed.

FIRMWARE UPDATE
FIRMWARE UPDATE OK
MACHINE POWER OFF/ON

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



12. Turn OFF and ON the power switch of the machine, and confirm the firmware version.
I.4.6.7 MAIN F/W VER., I.4.6.8 ENGINE F/W VER.

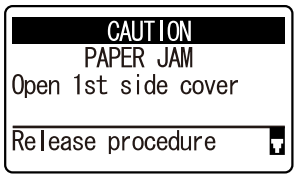
K TROUBLESHOOTING

1. JAM DISPLAY

1.1 Misfeed display

1.1.1 Misfeed display

- When a paper misfeed occurs, the error lights up steadily and the display gives a corresponding message.



Display message	Misfeed/paper location	Ref. page
Open 1st side cover	Tray 1 paper feed section	K.1.3.2 Misfeed at tray1 paper feed section
	Bypass tray paper feed section *1	K.1.3.3 Misfeed at the bypass tray paper feed section
	Tray 2 paper feed section *2	K.1.3.4 Misfeed at tray2 paper feed section
	Image transfer section	K.1.3.5 Misfeed at the image transfer section
	Fusing section	K.1.3.6 Misfeed at the fusing section
	Duplex paper feed section	K.1.3.7 Misfeed at the duplex paper feed section
Open duplex cover	Duplex transport section *3	K.1.3.8 Misfeed at the duplex transport section
Open 3rd side cover	Tray 3 paper feed section *4	K.1.3.9 Misfeed at the tray 3 paper feed section
Open 4th side cover	Tray 4 paper feed section *5	K.1.3.10 Misfeed at the tray 4 paper feed section
Open 5th side cover	Tray 5 paper feed section *6	K.1.3.11 Misfeed at the tray 5 paper feed section
Open doc. feed cover	Document feed section *7	K.1.3.12 Misfeed at the document feed section
	Document transport section *7	K.1.3.13 Misfeed at the document transport section
	Document exit section *7	K.1.3.14 Misfeed at the document exit section

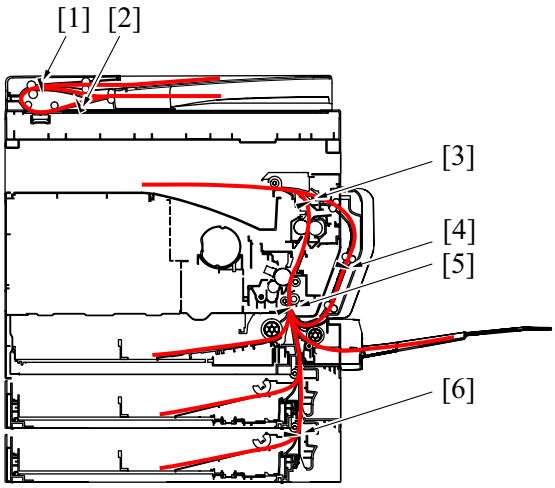
- *1: Only when the multi bypass tray (MB-505) is mounted.
- *2: Only when the tray 2 paper feeder unit (PF-507) is mounted.
- *3: Only when the automatic duplex unit (AD-509) is mounted.
- *4: Only when the tray 3 paper feeder unit (PF-507) is mounted.
- *5: Only when the tray 4 paper feeder unit (PF-507) is mounted.
- *6: Only when the tray 5 paper feeder unit (PF-507) is mounted.
- *7: Only when the reverse automatic document feeder (DF-625) is mounted.

1.1.2 Display resetting procedure

- Open the corresponding cover or door, clear the sheet of paper misfed, and close the cover or door.

1.2 Sensor layout

1.2.1 Main body + PF-507 + AD-509 + DF-625 + MB-505



[1]	Document registration sensor (PS8)	[2]	Document exit sensor (PS10)
[3]	Exit sensor (PS3)	[4]	Transport sensor (PS2)
[5]	Registration sensor (PS1)	[6]	Paper feed sensor (PS2)

1.3 Solution

1.3.1 Initial check items

- When a paper misfeed occurs, first perform the following initial checks.

Check item	Action
Does paper meet product specifications?	Replace paper.
Is the paper curled, wavy, or damp?	• Replace paper. • Instruct user on the proper paper storage.
Is a foreign object present along the paper path, or is the paper path deformed or worn?	Clean the paper path or replace the part on the paper path if necessary.
Are the paper separator fingers dirty, deformed, or worn?	• Clean the defective paper separator finger. • Replace the defective paper separator finger.
Are rolls/rollers dirty, deformed, or worn?	• Clean the defective roll/roller. • Replace the defective roll/roller.
Are the paper size and the detected paper size by the edge guide are matching?	Adjust the edge guide to match the paper size.
Are the actuators operating correctly?	• Correct the defective actuator. • Replace the defective actuator.
Is the paper size setting correct?	Reset the paper size as necessary

1.3.2 Misfeed at tray1 paper feed section

(1) Contents

JAM type	Detection timing	Relevant electrical components
Tray1 paper feed section misfeed detection	If the paper feed from the tray 1 fails, the machine retries twice. However, the registration sensor (PS1) does not turn ON even after the lapse of a given period of time after the two retries.	• Registration sensor (PS1) • Tray1 paper feed clutch (CL2) • Main motor (M1) • MFP board (MFPB)
Size error detection	The registration sensor (PS1) does not turn OFF even after the lapse of a given period of time after the PS1 turns ON.	
Paper left at the tray1 paper feed section	While feeding the paper from the tray 1, the paper misfeed or malfunction occurred or the paper is left by opening the door or the cover, and the registration sensor (PS1) does not turn ON.	

(2) Procedure

Step	Operation	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Initial check items	—	—
2	Check the connector between M1-MFPB P006 for proper connection and correct as necessary.	—	—
3	Check the M1 connector for proper drive coupling and correct as necessary.	—	—
4	Check the connector between PS1-relay CN24-MFPB P009 for proper connection and correct as necessary.	—	—
5	Check the connector between CL2-relay CN8-MFPB P009 for proper connection and correct as necessary.	—	—
6	PS1 sensor check	MFPB P009-9 (ON)	4-F
7	CL2 operation check	MFPB P009-4 (REM)	3-E
8	M1 operation check	MFPB P006-7 (LOCK)	22-B
9	Replace MFPB.	—	—

- **Link to the wiring diagram (N.1. bizhub 235/215/195 (1/2))**
- **Link to the wiring diagram (N.2. bizhub 235/215/195 (2/2))**

1.3.3 Misfeed at the bypass tray paper feed section

(1) Contents

JAM Type	Detection timing	Relevant electrical components
Manual bypass tray paper feed section misfeed detection	If the paper feed from the bypass tray fails, the machine retries twice. However, the registration sensor (PS1) does not turn ON even after the lapse of a given period of time after the two retries.	• Registration sensor (PS1) • Bypass paper feed clutch (CL1) • Main motor (M1) • MFP board (MFPB)
Size error detection	The registration sensor (PS1) does not turn OFF even after the lapse of a given period of time after the PS1 turns ON.	
Paper left at the manual bypass tray paper feed section	While feeding the paper from the manual bypass tray, the paper misfeed or malfunction occurred or the paper is left by opening the door or the cover, and the registration sensor (PS1) does not turn ON.	

(2) Procedure

Step	Operations	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Initial check items	—	—
2	Check the connector between M1-MFPB P006 for proper connection and correct as necessary.	—	—
3	Check the M1 connector for proper drive coupling and correct as necessary.	—	—
4	Check the connector between PS1-relay CN24-MFPB P009 for proper connection and correct as necessary.	—	—
5	Check the connector between CL1-relay CN3-relay CN6-MFPB P008 for proper connection and correct as necessary.	—	—
6	PS1 sensor check	MFPB P009-9 (ON)	4-F
7	CL1 operation check	MFPB P008-10 (REM)	3-H
8	M1 operation check	MFPB P006-7 (LOCK)	22-B
9	Replace MFPB.	—	—

- **Link to the wiring diagram (N.1. bizhub 235/215/195 (1/2))**
- **Link to the wiring diagram (N.2. bizhub 235/215/195 (2/2))**

1.3.4 Misfeed at tray2 paper feed section

(1) Contents

JAM type	Detection timing	Relevant electrical components
Tray2 paper feed section misfeed detection	If the paper feed from the tray 2 fails, the machine retries once. However, the registration sensor (PS1) does not turn ON even after the lapse of a given period of time after the retries.	• Registration sensor (PS1) • Tray1 paper feed clutch (CL2) • Main motor (M1) • MFP board (MFPB)
Size error detection	The registration sensor (PS1) does not turn OFF even after the lapse of a given period of time after the PS1 turns ON.	
Paper left at the tray2 paper feed section	While feeding the paper from the tray 2, the paper misfeed or malfunction occurred or the paper is left by opening the door or the cover, and the registration sensor (PS1) does not turn ON.	

(2) Procedure

Step	Operation	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Initial check items	—	—
2	Check the connector between M1-MFPB P006 for proper connection and correct as necessary.	—	—
3	Check the M1 connector for proper drive coupling and correct as necessary.	—	—
4	Check the connector between PS1-relay CN24-MFPB P009 for proper connection and correct as necessary.	—	—
5	Check the connector between CL2-relay CN8-MFPB P009 for proper connection and correct as necessary.	—	—
6	PS1 sensor check	MFPB P009-9 (ON)	4-F
7	CL2 operation check	MFPB P009-4 (REM)	3-E
8	M1 operation check	MFPB P006-7 (LOCK)	22-B
9	Replace MFPB.	—	—

- **Link to the wiring diagram (N.1. bizhub 235/215/195 (1/2))**
- **Link to the wiring diagram (N.2. bizhub 235/215/195 (2/2))**

1.3.5 Misfeed at the image transfer section

(1) Contents

JAM Type	Detection timing	Relevant electrical components
Paper image transfer section misfeed detection	• The exit sensor (PS3) does not turn ON even after the lapse of a given period of time after the registration sensor (PS1) turns ON. • The registration sensor (PS1) does not turn OFF even after the lapse of a given period of time after the PS1 turns ON. • The registration sensor (PS1) turns OFF before the lapse of a given period of time after the PS1 turns ON. • While the main motor (M1) is rotating, the machine cannot detect that the registration sensor (PS1) does not Keep ON continuously for the given period of time.	• Registration sensor (PS1) • Exit sensor (PS3) • Registration clutch (CL1) • Main motor (M1) • MFP board (MFPB)
Size error detection	The registration sensor (PS1) does not turn ON even after the lapse of a given period of time after the PS1 turns OFF.	

JAM Type	Detection timing	Relevant electrical components
Detection of paper left in image transfer section	• The registration sensor (PS1) turns ON and exit sensor (PS3) turns ON at timing when the power switch is turned ON, the door and/or cover is opened and closed, or a paper misfeed or malfunction is reset. • While feeding the paper, paper misfeed or malfunction occurred or the paper is left by opening the door or the cover, and the exit sensor (PS3) does not turn ON even though the registration sensor (PS1) turns ON.	

(2) Procedure

Step	Operation	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Initial check items	—	—
2	Check the connector between M1-MFPB P006 for proper connection and correct as necessary.	—	—
3	Check the M1 connector for proper drive coupling and correct as necessary.	—	—
4	Check the connector between PS1-relay CN24-MFPB P009 for proper connection and correct as necessary.	—	—
5	Check the connector between PS3-relay CN19-MFPB P004 for proper connection and correct as necessary.	—	—
6	Check the connector between CL1-relay CN7-MFPB P009 for proper connection and correct as necessary.	—	—
7	PS1 sensor check	MFPB P009-9 (ON)	4-F
8	PS3 sensor check	MFPB P004-4 (ON)	14-A
9	CL1 operation check	MFPB P009-2 (REM)	3-E
10	M1 operation check	MFPB P006-7 (LOCK)	22-B
11	Replace MFPB.	—	—

- **Link to the wiring diagram (N.1. bizhub 235/215/195 (1/2))**
- **Link to the wiring diagram (N.2. bizhub 235/215/195 (2/2))**

1.3.6 Misfeed at the fusing section

(1) Contents

JAM Type	Detection timing	Relevant electrical components
Fusing section misfeed detection	The exit sensor (PS3) does not turn OFF even after the lapse of a given period of time after the registration sensor (PS1) turns OFF.	• Registration sensor (PS1) • Exit sensor (PS3) • Registration clutch (CL1) • Main motor (M1) • MFP board (MFPB)
Detection of paper left in fusing section	• The exit sensor (PS3) turns ON at timing when the power switch is turned ON, the door and/or cover is opened and closed, or a paper misfeed or malfunction is reset. • While feeding the paper, paper misfeed or malfunction occurred or the paper is left by opening the door or the cover, and the exit sensor (PS3) turns ON. • While feeding the paper, paper misfeed or malfunction occurred or the paper is left due to opening the door or the cover after the exit sensor (PS3) turns OFF.	

(2) Procedure

Step	Operation	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Initial check items	—	—
2	Check the connector between M1-MFPB P006 for proper connection and correct as necessary.	—	—
3	Check the M1 connector for proper drive coupling and correct as necessary.	—	—
4	Check the connector between PS1-relay CN24-MFPB P009 for proper connection and correct as necessary.	—	—
5	Check the connector between PS3-relay CN19-MFPB P004 for proper connection and correct as necessary.	—	—
6	Check the connector between CL1-relay CN7-MFPB P009 for proper connection and correct as necessary.	—	—
7	PS1 sensor check	MFPB P009-9 (ON)	4-F
8	PS3 sensor check	MFPB P004-4 (ON)	14-A
9	CL1 operation check	MFPB P009-2 (REM)	3-E
10	M1 operation check	MFPB P006-7 (LOCK)	22-B

Step	Operation	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
11	Replace MFPB.	—	—

- **Link to the wiring diagram (N.1. bizhub 235/215/195 (1/2))**
- **Link to the wiring diagram (N.2. bizhub 235/215/195 (2/2))**

1.3.7 Misfeed at the duplex paper feed section

(1) Contents

JAM Type	Detection timing	Relevant electrical components
Duplex paper feed section misfeed detection	The registration sensor (PS1) does not turn ON even after the lapse of given period of time after the switchback motor (M4) started rotating in reverse direction.	• Transport sensor (PS2) • Registration sensor (PS1) • Switchback motor (M4) • AD motor (M1) • MFP board (MFPB) • AD drive board (ADDB)
Detection of paper left in duplex paper feed section	After restart feeding the paper, paper misfeed or malfunction occurred or the paper is oft due to opening the door or the cover, and the registration sensor (PS1) does not turn ON even though the transport sensor (PS2) turns ON.	

(2) Procedure

Step	Operation	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Initial check items	—	—
2	Check the connector between M4-MFPB P015 for proper connection and correct as necessary.	—	—
3	Check the M4 connector for proper drive coupling and correct as necessary.	—	—
4	Check the connector between M1-relay CN31-MFPB P016 for proper connection and correct as necessary.	—	—
5	Check the M1 connector for proper drive coupling and correct as necessary.	—	—
6	Check the connector between PS1-relay CN31-MFPB P016 for proper connection and correct as necessary.	—	—
7	Check the connector between PS2-relay CN31-MFPB P016 for proper connection and correct as necessary.	—	—
8	PS1 sensor check	MFPB P009-9 (ON)	4-F
9	PS2 sensor check	ADDB PB01-3 (ON)	2-C
10	M4 operation check	MFPB P015-1 to 4	22-C
11	M1 operation check	ADDB PB02-1 to 4	2-D
12	Replace ADDB.	—	—
13	Replace MFPB.	—	—

- **Link to the wiring diagram (N.1. bizhub 235/215/195 (1/2))**
- **Link to the wiring diagram (N.2. bizhub 235/215/195 (2/2))**
- **Link to the wiring diagram (N.5. AD-509)**

1.3.8 Misfeed at the duplex transport section

(1) Contents

JAM Type	Detection timing	Relevant electrical components
Duplex transport section misfeed detection	The transport sensor (PS2) does not turn ON even after the lapse of a given period of time after the exit sensor (PS3) turns OFF.	• Exit sensor (PS3) • Transport sensor (PS2) • AD motor (M1) • MFP board (MFPB) • AD drive board (ADDB)
Detection of paper left in duplex transport section	• The transport sensor (PS2) turns ON at timing when the power switch is turned ON, the door and/or cover is opened and closed, or a paper misfeed or malfunction is reset. • After restart feeding the paper, paper misfeed or malfunction occurred or the paper is left due to opening the door or the cover, and the transport sensor (PS2) does not turn ON.	

(2) Procedure

Step	Operation	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Initial check items	—	—
2	Check the connector between M1-relay CN31-MFPB P016 for proper connection and correct as necessary.	—	—
3	Check the M1 connector for proper drive coupling and correct as necessary.	—	—

Step	Operation	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
4	Check the connector between PS3-relay CN19-MFPB P004 for proper connection and correct as necessary.	—	—
5	Check the connector between PS2-relay CN31-MFPB P016 for proper connection and correct as necessary.	—	—
6	PS3 sensor check	MFPB P004-4 (ON)	14-A
7	PS2 sensor check	ADDB P015-1 to 4	2-C
8	M1 operation check	ADDB PB02-1 to 4	2-D
9	Replace ADDB.	—	—
10	Replace MFPB.	—	—

- **Link to the wiring diagram (N.2. bizhub 235/215/195 (2/2))**
- **Link to the wiring diagram (N.5. AD-509)**

1.3.9 Misfeed at the tray 3 paper feed section

(1) Contents

JAM Type	Detection timing	Relevant electrical components
Tray 3 paper feed section misfeed detection	If the paper feed from the tray 3 fails, the machine retries twice. However, the paper feed sensor (PS2) of the tray 3 does not turn ON even after the lapse of a given period of time after the two retries.	• Registration sensor (PS1) • Paper feed sensor (PS2) • Registration clutch (CL1) • Main motor (M1) • MFP board (MFPB)
Size error detection	The paper feed sensor (PS2) of the tray 3 does not turn OFF even after the lapse of a given period of time after the PS2 turns ON.	
Detection of paper left in tray 3 paper feed section	• The paper feed sensor (PS2) of the tray 3 turns ON at timing when the power switch is turned ON, the door and/or cover is opened and closed, or a paper misfeed or malfunction is reset. • When feeding the paper from the tray 3, paper misfeed or malfunction occurred, or the paper is left due to opening the door or the cover, and the paper feed sensor (PS2) of the tray 3 does not turn ON. • When feeding the paper from the tray 3, paper misfeed or malfunction occurred, or the paper is left due to opening the door or the cover, and the registration sensor (PS1) does not turn ON even though the paper feed sensor (PS2) of the tray 3 turns ON.	

(2) Procedure

Step	Operation	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Initial check items	—	—
2	Check the connector between M1-MFPB P006 for proper connection and correct as necessary.	—	—
3	Check the M1 connector for proper drive coupling and correct as necessary.	—	—
4	Check the connector between PS1-relay CN24-MFPB P009 for proper connection and correct as necessary.	—	—
5	Check the connector between PS2-relay CN32-MFPB P017 for proper connection and correct as necessary.	—	—
6	Check the connector between CL1-relay CN7-MFPB P009 for proper connection and correct as necessary.	—	—
7	PS1 sensor check	MFPB P009-9 (ON)	4-F
8	PS2 sensor check	PFDB PC02-12 (ON)	2-C
9	CL1 sensor check	MFPB P009-2 (REM)	3-E
10	M1 operation check	MFPB P006-7 (LOCK)	22-B
11	Replace MFPB.	—	—

- **Link to the wiring diagram (N.1. bizhub 235/215/195 (1/2))**
- **Link to the wiring diagram (N.2. bizhub 235/215/195 (2/2))**
- **Link to the wiring diagram (N.4. PF-507)**

1.3.10 Misfeed at the tray 4 paper feed section

(1) Contents

JAM Type	Detection timing	Relevant electrical components
Tray 4 paper feed section misfeed detection	If the paper feed from the tray 4 fails, the machine retries twice. However, the paper feed sensor (PS2) of the tray 4 does not turn ON even after the lapse of a given period of time after the two retries.	• Registration sensor (PS1) • Tray3/tray4 paper feed sensor (PS2) • Registration clutch (CL1) • Main motor (M1) • MFP board (MFPB)
Size error detection	The paper feed sensor (PS2) of the tray 4 does not turn OFF even after the lapse of a given period of time after the PS2 turns ON.	

Detection of paper left in tray 4 paper feed section	• The paper feed sensor (PS2) of the tray 4 turns ON at timing when the power switch is turned ON, the door and/or cover is opened and closed, or a paper misfeed or malfunction is reset. • When feeding the paper from the tray 4, paper misfeed or malfunction occurred, or the paper is left due to opening the door or the cover, and the paper feed sensor (PS2) of the tray 4 does not turn ON. • When feeding the paper from the tray 4, paper misfeed or malfunction occurred, or the paper is left due to opening the door or the cover, and the paper feed sensor (PS2) of the tray 3 does not turn ON even though the paper feed sensor (PS2) of the tray 4 turns ON.	

(2) Procedure

Step	Operation	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Initial check items	—	—
2	Check the connector between M1-MFPB P006 for proper connection and correct as necessary.	—	—
3	Check the M1 connector for proper drive coupling and correct as necessary.	—	—
4	Check the connector between PS1-relay CN24-MFPB P009 for proper connection and correct as necessary.	—	—
5	Check the connector between PS2-relay CN32-MFPB P017 for proper connection and correct as necessary.	—	—
6	Check the connector between CL1-relay CN7-MFPB P009 for proper connection and correct as necessary.	—	—
7	PS1 sensor check	MFPB P009-9 (ON)	4-F
8	PS2 sensor check	PFDB PC02-12 (ON)	2-C
9	CL1 sensor check	MFPB P009-2 (REM)	3-E
10	M1 operation check	MFPB P006-7 (LOCK)	22-B
11	Replace MFPB.	—	—

- **Link to the wiring diagram (N.1. bizhub 235/215/195 (1/2))**
- **Link to the wiring diagram (N.2. bizhub 235/215/195 (2/2))**
- **Link to the wiring diagram (N.4. PF-507)**

1.3.11 Misfeed at the tray 5 paper feed section

(1) Contents

JAM Type	Detection timing	Relevant electrical components
Tray 5 paper feed section misfeed detection	If the paper feed from the tray 5 fails, the machine retries twice. However, the paper feed sensor (PS2) of the tray 5 does not turn ON even after the lapse of a given period of time after the two retries.	• Registration sensor (PS1) • Tray 4/tray 5 paper feed sensor (PS2) • Registration clutch (CL1) • Main motor (M1) • MFP board (MFPB)
Size error detection	The paper feed sensor (PS2) of the tray 5 does not turn OFF even after the lapse of a given period of time after the PS2 turns ON.	
Detection of paper left in tray 5 paper feed section	• The paper feed sensor (PS2) of the tray 5 turns ON at timing when the power switch is turned ON, the door and/or cover is opened and closed, or a paper misfeed or malfunction is reset. • When feeding the paper from the tray 5, paper misfeed or malfunction occurred, or the paper is left due to opening the door or the cover, and the paper feed sensor (PS2) of the tray 5 does not turn ON. • When feeding the paper from the tray 5, paper misfeed or malfunction occurred, or the paper is left due to opening the door or the cover, and the paper feed sensor (PS2) of the tray 4 does not turn ON even though the paper feed sensor (PS2) of the tray 5 turns ON.	

(2) Procedure

Step	Operation	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Initial check items	—	—
2	Check the connector between M1-MFPB P006 for proper connection and correct as necessary.	—	—
3	Check the M1 connector for proper drive coupling and correct as necessary.	—	—
4	Check the connector between PS1-relay CN24-MFPB P009 for proper connection and correct as necessary.	—	—

Step	Operation	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
5	Check the connector between PS2-relay CN32-MFPB P017 for proper connection and correct as necessary.	—	—
6	Check the connector between CL1-relay CN7-MFPB P009 for proper connection and correct as necessary.	—	—
7	PS1 sensor check	MFPB P009-9 (ON)	4-F
8	PS2 sensor check	PFDB PC02-12 (ON)	2-C
9	CL1 sensor check	MFPB P009-2 (REM)	3-E
10	M1 operation check	MFPB P006-7 (LOCK)	22-B
11	Replace MFPB.	—	—

- **Link to the wiring diagram (N.1. bizhub 235/215/195 (1/2))**
- **Link to the wiring diagram (N.2. bizhub 235/215/195 (2/2))**
- **Link to the wiring diagram (N.4. PF-507)**

1.3.12 Misfeed at the document feed section

(1) Contents

JAM Type	Detection timing	Relevant electrical components
Document feed section misfeed detection	The document transport sensor (PS8) does not turn ON even after the lapse of a given period of time after the document feed clutch (CL1) has turned ON.	• Document transport sensor (PS8) • Document feed clutch (CL1) • DF motor (M1) • DF control board (DFCB)
Detection of paper left in document feed section	The document feed sensor (PS7) turns ON at timing when the power switch is turned ON, the door and/or cover is opened and closed, or a paper misfeed or malfunction is reset.	

(2) Procedure

Step	Operation	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Initial check items	—	—
2	Check the connector between M1-MFPB P106 for proper connection and correct as necessary.	—	—
3	Check the M1 connector for proper drive coupling and correct as necessary.	—	—
4	Check the connector between PS8- MFPB P106 for proper connection and correct as necessary.	—	—
5	Check the connector between CL1- MFPB P106 for proper connection and correct as necessary.	—	—
6	PS8 sensor check	DFCB CN8-8 (ON)	5-H
7	CL1 operation check	DFCB CN3-1 to 2	5-A
8	M1 operation check	DFCB CN10-1 to 4	6-L
9	Replace DFCB.	—	—

- **Link to the wiring diagram (N.3. DF-625)**

1.3.13 Misfeed at the document transport section

(1) Contents

JAM Type	Detection timing	Relevant electrical components
Document transport section misfeed detection	• The document transport sensor (PS9) does not turn ON even after the lapse of a given period of time after the document registration clutch (CL2) has turned ON. • The document registration sensor (PS8) does not turn ON even after the lapse of a given period of time after the switchback clutch (CL3) has turned ON.	• Document registration sensor (PS8) • Document transport sensor (PS9) • Document registration clutch (CL2) • DF motor (M1) • DF control board (DFCB)
Size error detection	• The document transport sensor (PS9) does not turn OFF even after the lapse of a given period of time after the PS9 turns OFF. • The document transport sensor (PS9) turns OFF before the lapse of given period of time after the PS9 turns ON.	
Detection of paper left in document transport section	• The document registration sensor (PS8) turns ON at timing when the power switch is turned ON, the door and/or cover is opened and closed, or a paper misfeed or malfunction is reset. • The document transport sensor (PS9) turns ON at timing when the power switch is turned ON, the door and/or cover is opened and closed, or a paper misfeed or malfunction is reset.	

(2) Procedure

Step	Operation	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Initial check items	—	—
2	Check the connector between M1-MFPB P106 for proper connection and correct as necessary.	—	—
3	Check the M1 connector for proper drive coupling and correct as necessary.	—	—
4	Check the connector between PS8-MFPB P106 for proper connection and correct as necessary.	—	—
5	Check the connector between PS9- MFPB P106 for proper connection and correct as necessary.		
6	Check the connector between CL2- MFPB P106 for proper connection and correct as necessary.	—	—
7	PS8 sensor check	DFCB CN8-8 (ON)	5-H
8	PS9 sensor check	DFCB CN9-5 (ON)	7-J
9	CL2 operation check	DFCB CN4-1 to 2	5-B
10	M1 operation check	DFCB CN10-1 to 4	6-L
11	Replace DFCB.	—	—

- **Link to the wiring diagram (N.3. DF-625)**

1.3.14 Misfeed at the document exit section

(1) Contents

JAM Type	Detection timing	Relevant electrical components
Document exit section misfeed detection	• The document exit sensor (PS10) does not turn ON even after the lapse of a given period of time after the document transport sensor (PS9) turns ON. • The document exit sensor (PS10) does not turn OFF even after the lapse of a given period of time after the document transport sensor (PS9) turns OFF.	• Document transport sensor (PS9) • Document exit sensor (PS10) • DF motor (M1) • DF control board (DFCB)
Detection of paper left in document exit section	The document exit sensor (PS10) turns ON at timing when the power switch is turned ON, the door and/or cover is opened and closed, or a paper misfeed or malfunction is reset.	

(2) Procedure

Step	Operation	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Initial check items	—	—
2	Check the connector between M1-MFPB P106 for proper connection and correct as necessary.	—	—
3	Check the M1 connector for proper drive coupling and correct as necessary.	—	—
4	Check the connector between PS9- MFPB P106 for proper connection and correct as necessary.	—	—
5	Check the connector between PS10- MFPB P106 for proper connection and correct as necessary.	—	—
6	PS9 sensor check	DFCB CN9-5 (ON)	7-J
7	PS10 sensor check	DFCB CN9-8 (ON)	5-K
8	M1 operation check	DFCB CN10-1 to 4	6-L
9	Replace DFCB.	—	—

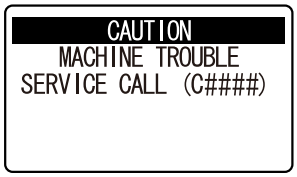
- **Link to the wiring diagram (N.3. DF-625)**

2. MALFUNCTION CODE

2.1 Trouble code

2.1.1 Trouble code

- The copier'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.



2.1.2 Trouble code list

Code	Item	Description
C0211	Bypass tray up/down failure	• While the bypass lift sensor (PS2) is in the OFF state after the power is turned ON, output is finished, or a paper jam is cleared, PS2 is not turned ON within the given time after the bypass pick-up solenoid (SD1) has been turned ON. Then SD1 is turned ON again, but PS2 cannot be turned ON within the given time. • When the bypass lift sensor (PS2) is in the ON state, PS2 is not turned OFF within the given time after the bypass pick-up solenoid (SD1) has been turned ON.
C03FF	Faulty model setting	"Model Setting" of "Adjust" available from the Service mode is incorrectly set.
C2351	Fusing cooling fan motor malfunction	The fan lock signal remains HIGH for a predetermined continuous period of time while the Fusing cooling fan motor (FM1) is turning.
C2557	Abnormally low toner density detected TCR sensor board	• The T/C ratios detected by the TCR sensor board (TCRSB) are below the threshold for the detection of abnormally low T/C ratio for three successive times. However, if a toner empty condition is detected, this abnormality is not detected.
C2558	Abnormally high toner density detected TCR sensor board	• The T/C ratios detected by the TCR sensor board (TCRSB) are above the threshold for the detection of abnormally high T/C ratio for three successive times. • The connector between MFPB to TCRSB is disconnected.
C255C	TCR sensor board adjustment failure	When [SERVICE MODE] -> [FUNCTION] -> [TCR AUTO ADJUST] is performed, the difference between the TCR sensor output voltage determined by TCR AUTO ADJUST and the standard voltage is greater than the threshold value.
C2702	Abnormal image transfer voltage (HV)	The image transfer voltage remains more than 100 V continuously for a given period of time while the drum remains stationary.
C3451	Warming-up failure	The thermistor/1 (TH1) detected that the temperature of the surface of the fusing roller did not reach the specified level even after the lapse of given period of time has passed during warm-up.
C3452	Warming-up failure (sub)	The thermistor/2 (TH2) detected that the temperature of the surface of the fusing roller did not reach the specified level even after the lapse of given period of time has passed during warm-up.
C3751	Abnormally high fusing temperature (main)	The temperature detected by the thermistor/1 (TH1) is over the specified temperature for more than the specified period of time after power is turned ON.
C3752	Abnormally high fusing temperature (sub)	The temperature detected by the thermistor/2 (TH2) is over the specified temperature for more than the specified period of time after power is turned ON.
C3851	Abnormally low fusing temperature (main)	The temperature detected by the thermistor/1 (TH1) is below the specified temperature for more than the specified period of time.
C3852	Abnormally low fusing temperature (sub)	The temperature detected by the thermistor/2 (TH2) is below the specified temperature for more than the specified period of time.
C4001	Faulty HSYNC (SOS)	• The SOS sensor does not detect a rising edge of SOS within a given period of time after the polygon motor has started turning and a laser output has been started. • The SOS sensor detects no falling edges of SOS while VIA (image area control) is ON.
C4101	Polygon motor rotation malfunction	• A HIGH polygon motor lock signal is not detected within a given period of time that begins 0.5 sec. after the polygon motor has started turning. • A LOW polygon motor lock signal is detected for a continuous given period of time while the rotation of the polygon motor remains stabilized.
C5102	Main motor malfunction	The main motor (M1) lock signal remains HIGH for a continuous 1-sec. period after 1-sec. after the main motor has started turning.
C5351	Cooling fan motor malfunction	The fan lock signal remains HIGH for a predetermined continuous period of time while the Cooling fan motor (FM2) is turning.
C6101	Scanner home detection failure	When the power switch is turned ON or a scan operation is completed, detecting the home position fails.
C9401	IR exposure lamp malfunction	When the power switch is turned ON or a scan operation is completed, the light quantity is checked and the shading compensation is performed. At this time, trouble is detected.
CC151	Flash ROM error	• The copier determines that there is an error if writing to the flash ROM fails during upgrading of the firmware.

Code	Item	Description
		• When the power switch is turned ON, the error indicator lights up steadily and a corresponding message appears on the display. • If this error message appears, no operations can then be performed. It is not possible to upgrade the firmware from a PC connected through USB connection, either.
CC153	Engine flash ROM error	Data of flash ROM of the engine control system is determined to be faulty.
CC163	Engine connection failure	• The controller can not communicate with the engine control system. • Incorrect engine firmware is installed.
CD301	EEPROM error	Contact the responsible people of KMBT before taking some countermeasures.

2.2 Trouble resetting procedure

2.2.1 Trouble resetting procedure

Code	Item	Procedure
C0211	Bypass tray up/down failure	Turn OFF and ON the power switch.
C03FF	Faulty model setting	Make the correct setting for “MODEL SETTING” of “ADJUST” available from the Service mode.
C2351	Cooling fan motor malfunction	Turn OFF and ON the power switch.
C2557	Abnormally low toner density detected TCR sensor board	
C2558	Abnormally high toner density detected TCR sensor board	
C255C	TCR sensor board adjustment failure	
C2702	Abnormal image transfer voltage (HV)	
C3451	Warming-up failure	Turn ON the power switch with the Clear/Stop key held down.
C3452	Warming-up failure (sub)	
C3751	Abnormally high fusing temperature (main)	
C3752	Abnormally high fusing temperature (sub)	
C3851	Abnormally low fusing temperature (main)	
C3852	Abnormally low fusing temperature (sub)	
C4001	Faulty HSYNC (SOS)	Turn OFF and ON the power switch.
C4101	Polygon motor rotation malfunction	
C5102	Main motor malfunction	
C5351	Fusing cooling fan motor malfunction	
C6101	Scanner home detection failure	
C9401	IR exposure lamp malfunction	
CC151	Flash ROM error	
CC153	Engine flash ROM error	
CC163	Engine connection failure	
CD301	EEPROM error	

2.3 Solution

2.3.1 C0211

(1) Contents

Trouble code	Trouble type	Relevant electrical components
C0211	Bypass tray up/down failure	• Main motor (M1) • Bypass paper feed clutch (CL1) • Bypass pick-up solenoid (SD1) • MFP board (MFPB)

(2) Procedure

Step	Operations	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Check the connector between M1-MFPB P006 for proper connection and correct as necessary.	—	—
2	Check M1 for correct drive coupling and correct as necessary.	—	—
3	Check the connector between CL1-relay CN3-relay CN6-MFPB P008 for proper connection and correct as necessary.	—	—
4	CL1 operation check.	MFPB P008-10 (REM)	3-H

Step	Operations	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
5	Check the connector between SD1-relay CN4-relay CN6-MFPB P008 for proper connection and correct as necessary.	—	—
6	M1 operation check.	MFPB P006-7 (LOCK)	22-B
7	SD1 operation check.	MFPB P008-12 (REM)	3-H
8	Change MFPB.	—	—

- **Link to the wiring diagram (N.1. bizhub 235/215/195 (1/2))**
- **Link to the wiring diagram (N.2. bizhub 235/215/195 (2/2))**

2.3.2 C2351

(1) Contents

Trouble code	Trouble type	Relevant electrical components
C2351	Fusing cooling fan motor malfunction	• Fusing cooling fan motor (FM1) • MFP board (MFPB)

(2) Procedure

Step	Operations	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Check the connector between FM1-relay CN42-relay CN13-MFPB P013 for proper connection and correct as necessary.	-	-
2	Check the fan for possible overload and correct as necessary.	-	-
3	FM1 operation check.	MFPB P013-5(REM)	14-E
4	Change MFPB.	-	-

- **Link to the wiring diagram (N.2. bizhub 235/215/195 (2/2))**

2.3.3 C2557, C2558, C255C

(1) Contents

Trouble code	Trouble type	Relevant electrical components
C2557	Abnormally low toner density detected TCR sensor board	• TCR sensor board (TCRSB) • MFP board (MFPB)
C2558	Abnormally high toner density detected TCR sensor board	
C255C	TCR sensor board adjustment failure	

(2) Procedure

Step	Operations	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Check to see if developer is available.	—	—
2	Check the connector between TCRSB-relay CN14-MFPB P010 for proper connection and correct as necessary.	—	—
3	Change TCRSB.	—	—
4	Change MFPB.	—	—

2.3.4 C2702

(1) Contents

Trouble code	Trouble type	Relevant electrical components
C2702	Abnormal image transfer voltage (HV)	• Transfer roller unit • High voltage unit (HV1) • MFP board (MFPB)

(2) Procedure

Step	Operations	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Check the transfer roller unit for installation.	—	—
2	Change HV1.	—	—
3	Change MFPB.	—	—

2.3.5 C3451, C3452, C3751, C3752, C3851, C3852

(1) Contents

Trouble code	Trouble type	Relevant electrical components
C3451	Warming-up failure	• Fusing unit • Right door switch (S2) • DC power supply (DCPU) • MFP board (MFPB)
C3452	Warming-up failure (sub)	
C3751	Abnormally high fusing temperature (main)	
C3752	Abnormally high fusing temperature (sub)	
C3851	Abnormally low fusing temperature (main)	
C3852	Abnormally low fusing temperature (sub)	

(2) Procedure

Step	Operations	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Check the fusing unit for correct installation.	—	—
2	Check the open/close operation of the right door.	—	—
3	Check the fusing unit, DCPU and MFPB for proper connection and correct or change as necessary.	—	—
4	Change fusing unit.	—	—
5	Change MFPB.	—	—
6	Change DCPU.	—	—

2.3.6 C4001, C4101

(1) Contents

Trouble code	Trouble type	Relevant electrical components
C4001	Faulty HSYNC (SOS)	• PH unit • MFP board (MFPB)
C4101	Polygon motor rotation malfunction	

(2) Procedure

Step	Operations	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Turn OFF and ON the power switch.	—	—
2	Check the connector between PH unit-MFPB P001, P002 for proper connection and correct as necessary.	—	—
3	Change PH unit.	—	—
4	Change MFPB.	—	—

2.3.7 C5102

(1) Contents

Trouble code	Trouble type	Relevant electrical components
C5102	Main motor malfunction	• Main motor (M1) • MFP board (MFPB) • DC power supply (DCPU)

(2) Procedure

Step	Operations	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Check the connector between M1-MFPB P006 for proper connection and correct as necessary.	—	—
2	Check M1 for correct drive coupling and correct as necessary.	—	—
3	M1 operation check.	MFPB P006-7 (LOCK)	22-B
4	Change MFPB.	—	—
5	Change DCPU.	—	—

- **Link to the wiring diagram (N.2. bizhub 235/215/195 (2/2))**

2.3.8 C5351

(1) Contents

Trouble code	Trouble type	Relevant electrical components
C5351	Cooling fan motor malfunction	• Cooling fan motor (FM2) • MFP board (MFPB)

(2) Procedure

Step	Operations	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Check the connector between FM2-relay CN27-MFPB P013 for proper connection and correct as necessary.	—	—
2	Check the fan for possible overload and correct as necessary.	—	—
3	FM2 operation check.	MFPB P013-5 (REM)	14-E
4	Change MFPB.	—	—

- **Link to the wiring diagram (N.2. bizhub 235/215/195 (2/2))**

2.3.9 C6101

(1) Contents

Trouble code	Trouble type	Relevant electrical components
C6101	Scanner home detection failure	• Scanner motor (M3) • CIS module (CIS) • MFP board (MFPB)

(2) Procedure

Step	Operations	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Turn OFF and ON the power switch.	—	—
2	Check the connector between M3-MFPB P101 for proper connection and correct as necessary.	—	—
3	Check M3 for correct drive coupling and correct as necessary.	—	—
4	Check the connector between CIS-MFPB P102 for proper connection and correct as necessary.	—	—
5	M3 operation check	MFPB P101-1 to 4	10-A
6	Change M3.	—	—
7	Change CIS	—	—
8	Change MFPB.	—	—

- **Link to the wiring diagram (N.1. bizhub 235/215/195 (1/2))**

2.3.10 C9401

(1) Contents

Trouble code	Trouble type	Relevant electrical components
C9401	IR exposure lamp malfunction	• CIS module (CIS) • MFP board (MFPB)

(2) Procedure

Step	Operations	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Turn OFF and ON the power switch.	—	—
2	Check the connector between CIS-MFPB P102 for proper connection and correct as necessary.	—	—
3	Change CIS	—	—
4	Change MFPB.	—	—

2.3.11 CC151, CC153

(1) Contents

Trouble code	Trouble type	Relevant electrical components
CC151	Flash ROM error	MFP board (MFPB)
CC153	Engine flash ROM error	

(2) Procedure

Step	Operations	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Check the MFPB connectors for proper connection and correct as necessary.	—	—
2	Identify the specific firmware that is responsible for the error.	—	—
3	Perform upgrading of the firmware.	—	—
4	Change MFPB.	—	—

2.3.12 CC163

(1) Contents

Trouble code	Trouble type	Relevant electrical components
CC163	Engine connection failure	Printer control board (PRCB)

(2) Procedure

Step	Operations	WIRING DIAGRAM	
		Control signal	Location (Electrical components)
1	Turn OFF and ON the power switch.	—	—
2	Check whether the correct engine firmware is installed. If not, rewrite the firmware. J.1. Rewriting of firmware	-	-
3	Check the MFPB connectors for proper connection and correct as necessary.	—	—
4	Change MFPB.	—	—

3. POWER SUPPLY TROUBLE

3.1 The copier does not turn ON

Step	Check	Result	Action
1	A malfunction code appears when the power switch is turned ON.	YES	• Go to step 2.
		NO	• Go to step 3.
2	The malfunction is temporarily reset when the power switch is turned OFF and ON with the Clear/Stop key held down.	YES	• Perform the troubleshooting procedure according to the malfunction code.
3	Power supply voltage check <Check procedure> Check voltage across pins of DC power supply (DCPU) when the power switch is turned ON. Voltage across CN1DCPU-1 and CN1DCPU-2 • Power switch OFF: AC0 V • Power switch ON: Rated AC voltage	NO	• Check wall outlet for voltage. • Check power cord for continuity. • Check power switch.
4	Check of output of DC24 V to MFPB <Check procedure> Check voltage across a MFPB pin and GND when the power switch is turned ON. Voltage across P005MFPB-1 and GND • Power switch OFF: DC0 V • Power switch ON: DC24 V Voltage across P005MFPB-3 and GND • Power switch OFF: DC0 V • Power switch ON: DC24 V	NO	• Check front door switch (S3). • Check right door switch (S2). • Change DC power supply (DCPU).
5	Check of output of DC 3.3 V to MFPB <Check procedure> Check voltage across a MFPB pin and GND when the power switch is turned ON. Voltage across P005MFPB-7, 8 and GND • Power switch OFF: DC0 V • Power switch ON: DC3.3 V	NO	• Change DC power supply (DCPU).
6	Check of output of DC3.3 V to control panel <Check procedure> Check voltage across a MFPB pin and GND when the power switch is turned ON. Voltage across P103MFPB-17,18,19 and GND	NO	• Change MFP board (MFPB). • Change DC power supply (DCPU).
	• Power switch OFF: DC0 V • Power switch ON: DC3.3 V	YES	• Change control panel.

4. IMAGE QUALITY PROBLEM

4.1 How to identify problematic part

4.1.1 Outline

- In this chapter, troubleshooting is divided into "initial checks" and "troubleshooting procedures classified by image failures."
- If any image failure has occurred, first make the initial checks, then proceed to the corresponding image failure troubleshooting procedure.

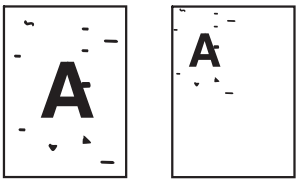
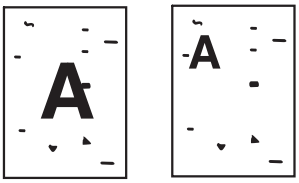
4.1.2 Initial check items

- Determine if the failure is attributable to a basic cause or causes.

Section	Step	Check	Result	Action
Paper	1	Paper meets product specifications.	NO	• Instruct user to use paper that meets specifications and is recommended.
	2	Paper is damp.	YES	• Change paper for one that is dry. • Then, instruct user to use paper that meets specifications and in how to store paper.
Original	3	Original is placed correctly.	NO	• Reposition original.
	4	Original is written in light pencil.	YES	• Instruct user to use original with appropriate image density.
	5	Original is transparent (OHP film, etc.).	YES	• Instruct user to use originals that meet specifications.
	6	Original glass is dirty or scratchy.	YES	• Clean original glass. • Change original glass.
PM parts	7	The PM parts relating to image formation have reached the end of cleaning/replacement cycles.	YES	• Clean PM parts. • Change PM parts.
Adjustment items	8	Adjustment item in which re-adjustment is made to improve the image faulty.	YES	• Re-adjustment

4.1.3 Identification of the faulty system

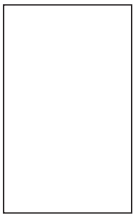
- Determine if the failure is attributable to an input system (scanner) or output system (printer).

Check	Result	Action
Copy made at a reduced ratio 	Full-size/Reduced 	Input system (scanner)
	Full-size/Reduced 	Output system (printer)

4.2 Solution

4.2.1 Scanner section: Blank copy

1. Typical faulty images



2. Troubleshooting procedure

Step	Check	Result	Action
1	CIS module (CIS) connector is loose.	YES	• Reconnect.
2	MFP board (MFPB) connector P102 is loose.	YES	• Reconnect.
		NO	• Change MFPB.
			• Change CIS.

4.2.2 Scanner section: Black copy

1. Typical faulty images



2. Troubleshooting procedure

Step	Check	Result	Action
1	Exposure lamp turns ON when the power switch is turned ON.	NO	• Go to step 3.
2	Exposure lamp is abnormally lit (flickers or abnormally dark) when the power switch is turned ON.	NO	• Go to step 4.
3	CIS module (CIS) connector is loose.	YES	• Reconnect.
4	MFP board (MFPB) connector P102 is loose.	YES	• Reconnect.
		NO	• Change MFPB.
			• Change CIS.

4.2.3 Scanner section: Low image density

1. Typical faulty images

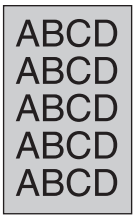


2. Troubleshooting procedure

Step	Check	Result	Action
1	Shading sheet reading portion (the portion on the backside of the original glass to which original width scale is affixed) is dirty.	YES	• Clean.
2	CIS module (CIS) connector is loose.	YES	• Reconnect.
3	MFP board (MFPB) connector P102 is loose.	YES	• Reconnect.
		NO	• Change MFPB.
			• Change CIS.

4.2.4 Scanner section: Foggy background or rough image

1. Typical faulty images

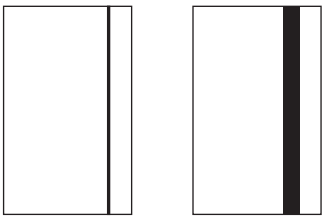


2. Troubleshooting procedure

Step	Check	Result	Action
1	Original glass is dirty.	YES	• Clean.
2	CIS module components (lens, lamp) are dirty.	YES	• Clean.
3	CIS module (CIS) connector is loose.	YES	• Reconnect.
4	MFP board (MFPB) connector P102 is loose.	YES	• Reconnect.
		NO	• Change MFPB.
			• Change CIS.

4.2.5 Scanner section: Black streaks or bands

1. Typical faulty images



2. Troubleshooting procedure

Step	Check	Result	Action
1	Original glass is dirty, scratchy, worn, or damaged.	YES	• Clean or change.
2	Shading sheet reading portion (the portion on the backside of the original glass to which original width scale is affixed) is dirty.	YES	• Clean.
3	CIS module components (lens, lamp, sensor) are dirty, scratchy, worn, or damaged.	YES	• Clean or change.
4	CIS module (CIS) connector is loose.	YES	• Reconnect.
5	MFP board (MFPB) connector P102 is loose.	YES	• Reconnect.
		NO	• Change MFPB.
			• Change CIS.

4.2.6 Scanner section: Black spots

1. Typical faulty images



2. Troubleshooting procedure

Step	Check	Result	Action
1	Original glass is dirty or scratchy.	YES	• Clean.
2	CIS module components (lens, lamp, sensor) are dirty, scratchy, worn, or damaged.	YES	• Clean or change.

Step	Check	Result	Action
3	CIS module (CIS) connector is loose.	YES	• Reconnect.
4	MFP board (MFPB) connector P102 is loose.	YES	• Reconnect.
		NO	• Change MFPB.
			• Change CIS.

4.2.7 Scanner section: White streaks or bands

1. Typical faulty images



2. Troubleshooting procedure

Step	Check	Result	Action
1	Original glass is dirty, scratchy, worn, or damaged.	YES	• Clean or change.
2	Shading sheet reading portion (the portion on the backside of the original glass to which original width scale is affixed) is dirty.	YES	• Clean.
3	CIS module components (lens, lamp, sensor) are dirty, scratchy, worn, or damaged.	YES	• Clean or change.
4	CIS module (CIS) connector is loose.	YES	• Reconnect.
5	MFP board (MFPB) connector P102 is loose.	YES	• Reconnect.
		NO	• Change MFPB.
			• Change CIS.

4.2.8 Scanner section: Uneven image density

1. Typical faulty images

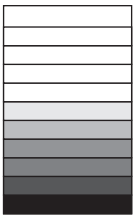


2. Troubleshooting procedure

Step	Check	Result	Action
1	Original glass is dirty, scratchy, worn, or damaged.	YES	• Clean or change.
2	Shading sheet reading portion (the portion on the backside of the original glass to which original width scale is affixed) is dirty.	YES	• Clean.
3	Exposure lamp is abnormally lit (flickers or abnormally dark) when the power switch is turned ON.	NO	• Go to step 5.
4	CIS module components (lens, lamp, sensor) are dirty, scratchy, worn, or damaged.	YES	• Clean or change.
5	CIS module (CIS) connector is loose.	YES	• Reconnect.
6	MFP board (MFPB) connector P102 is loose.	YES	• Reconnect.
		NO	• Change MFPB.
			• Change CIS.

4.2.9 Scanner section: Gradation reproduction failure

1. Typical faulty images



2. Troubleshooting procedure

Step	Check	Result	Action
1	Original glass is dirty, scratchy, worn, or damaged.	YES	• Clean or change.
2	Shading sheet reading portion (the portion on the backside of the original glass to which original width scale is affixed) is dirty.	YES	• Clean.
3	Exposure lamp is abnormally lit (flickers or abnormally dark) when the power switch is turned ON.	NO	• Go to step 5.
4	CIS module components (lens, lamp, sensor) are dirty, scratchy, worn, or damaged.	YES	• Clean or change.
5	CIS module (CIS) connector is loose.	YES	• Reconnect.
6	MFP board (MFPB) connector P102 is loose.	YES	• Reconnect.
		NO	• Change MFPB.
			• Change CIS.

4.2.10 Scanner section: Periodically uneven image

1. Typical faulty images

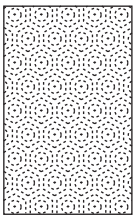


2. Troubleshooting procedure

Step	Check	Result	Action
1	The back side of original glass is dirty, scratchy, worn, or damaged.	YES	• Clean or change.
2	Scanner motor (M3) is securely fastened using the dedicated fixing screws.	NO	• Secure in position.
3	Scanner motor (M3) drive mechanism is dirty or damaged.	YES	• Clean or change.
4	Scanner drive mechanism pulley is dirty with foreign matter, scratchy, deformed, worn, or damaged.	YES	• Remove foreign matter or change.
5	Scanner rails are dirty with foreign matter, scratchy, deformed, worn, or damaged.	YES	• Clean or change.
6	CIS module moves smoothly. <Check procedure> Gently move the scanner by hand to check for smooth operation.	NO	• Reinstall CIS.
7	CIS module (CIS) connector is loose.	YES	• Reconnect.
8	MFP board (MFPB) connector P102 is loose.	YES	• Reconnect.
		NO	• Change MFPB.

4.2.11 Scanner section: Moire

1. Typical faulty images

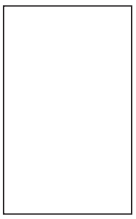


2. Troubleshooting procedure

Step	Check	Result	Action
1	Moire distortions recur even after the orientation of original has been changed.	NO	• Change the original mode (select one other than that resulted in moire).
2	Moire distortions recur even after the original mode has been changed.	NO	• Change the original image mode.
3	Moire distortions recur even when the zoom ratio is changed.	NO	• Change the zoom ratio setting.
4	The problem has been eliminated through the checks of step up 3.	NO	• Adjust CIS MAIN ZOOM and CIS SUB ZOOM I.4.4.25 CIS MAIN ZOOM I.4.4.26 CIS SUB ZOOM

4.2.12 Printer section: Blank copy

1. Typical faulty images



2. Troubleshooting procedure

Step	Check	Result	Action
1	Imaging unit is installed correctly.	NO	• Reinstall.
2	Connector between the imaging unit and copier is dirty.	YES	• Clean.
3	PH shutter (located along the laser path between the PH unit and drum) is not in correct position or malfunctions.	YES	• Correct or reinstall.
4	Connectors P001MFPB and P002MFPB in PH unit come off or lift.	YES	• Reconnect.
5	Transfer roller unit is installed correctly.	NO	• Reinstall.
6	Transfer current contact is dirty, broken, or bent.	YES	• Clean, correct, or change.
7	Developing bias contact is dirty, broken, or bent.	YES	• Clean, correct, or change.
8	High voltage unit (HV1) connectors is loose.	YES	• Reconnect.
9	The following voltage is supplied from the MFP board (MFPB).	YES	• Change IU.
	<Check procedure>		• Change PH unit.
	Check that there is 24 V developing across the MFP board pin and GND when the power switch is turned ON (during a copy cycle or a standby state).		• Change high voltage unit (HV1).
		NO	• Change MFPB.

4.2.13 Printer section: Black copy

1. Typical faulty images



2. Troubleshooting procedure

Step	Check	Result	Action
1	Drum charge corona grid mesh and comb electrode are loose.	YES	• Reinstall.
2	Drum charge corona contact is dirty, scratchy, folded, bent, or damaged.	YES	• Correct or change.
3	Grid bias contact is dirty, folded, or bent.	YES	• Clean, correct, or change.
4	Drum ground contact is dirty, scratchy, bent, or damaged.	YES	• Clean, correct, or change.
5	High voltage unit (HV1) connectors is loose.	YES	• Reconnect.
6	The PH unit cable is loose.	YES	• Reconnect.
7	The following voltage is supplied from the MFP board (MFPB).	YES	• Change IU.
	<Check procedure>		• Change PH unit.
	Check that there is 24 V developing across the MFP board pin and GND when the power switch is turned ON (during a copy cycle or a standby state).		• Change high voltage unit (HV1).
		NO	• Change MFPB.

4.2.14 Printer section: Low image density

1. Typical faulty images



2. Troubleshooting procedure

Step	Check	Result	Action
1	The image changes when "TONER SUPPLY" in SERVICE MODE is executed.	YES	• Replenish the supply of toner using "TONER SUPPLY".
2	The image changes when "ID ADJUST" and "VG ADJUST" are executed.	YES	• Readjust. I.4.3.6 ID ADJUST I.4.3.7 VG ADJUST
3	Image transfer current contact is dirty, folded, or bent.	YES	• Clean, correct, or change.
4	Developing bias contact is dirty, folded, or bent.	YES	• Clean, correct, or change.
5	High voltage unit (HV1) connectors is loose.	YES	• Reconnect.
6	TCR sensor board (TCRSB) is dirty with foreign matter (such as paper dust) other than developer.	YES	• Clean.
7	Is a power voltage supplied across MFPB P010-relay CN14-TCRSB?	NO	• Change TCR sensor board (TCRSB) and then change developer.
	<Check procedure>		
	Check voltage across the MFP board pin and GND when the power switch is turned ON.		
8	The following voltage is supplied from the MFP board (MFPB).	YES	• Change Imaging Unit.
	<Check procedure>		• Change high voltage unit (HV1).
	Check that there is 24 V developing across the MFP board pin and GND when the power switch is turned ON (during a copy cycle or a standby state).	NO	• Change MFPB.

4.2.15 Printer section: Foggy background or rough image

1. Typical faulty images

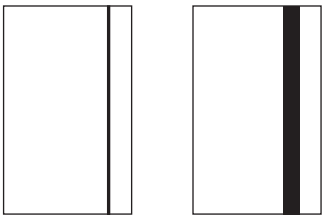


2. Troubleshooting procedure

Step	Check	Result	Action
1	The image changes when "ID ADJUST" and "VG ADJUST" are executed.	YES	• Readjust. I.4.3.6 ID ADJUST. I.4.3.7 VG ADJUST
2	Drum surface and the areas in contact with Ds collars are dirty with foreign matter, or deformed or worn.	YES	• Clean or change.
3	Grid bias contact is dirty, scratchy, deformed, worn, or damaged.	YES	• Clean, correct, or change.
4	TCR sensor board (TCRSB) is dirty with foreign matter (such as paper dust) other than developer.	YES	• Clean.
5	Is a power voltage supplied across P005 on MFPB? <Check procedure> Check voltage across a master board pin and GND when the power switch is turned ON.	NO	• Change TCR sensor board (TCRSB) and then change developer.
6	The following voltage is supplied from the MFP board (MFPB). <Check procedure> Check that there is 24 V developing across the MFP board pin and GND when the power switch is turned ON (during a copy cycle or a standby state).	YES	• Adjust Db (Blade to control the toner's adherence)
			• Change drum.
			• Change imaging unit.
			• Change high voltage unit (HV1).
		NO	• Change MFPB.

4.2.16 Printer section: Black streaks or bands

1. Typical faulty images



2. Troubleshooting procedure

Step	Check	Result	Action
1	Drum is dirty or scratchy.	YES	• Clean or change.
2	Foreign matter (such as paper dust) sticks to the cleaning blade of IU or the blade curves upward.	YES	• Remove foreign matter, correct, or change.
3	Db (Doctor blade) of IU is plugged with foreign matter (such as paper dust).	YES	• Remove foreign matter.
4	Drum charge corona grid mesh and comb electrode are dirty, scratchy, deformed, damaged, or out of position.	YES	• Clean or change.
5	Fusing roller is dirty or scratchy.	YES	• Clean or change.
6	PH window of the PH unit is dirty or scratchy.	YES	• Clean or change.
		NO	• Change IU.

4.2.17 Printer section: Black spots

1. Typical faulty images



2. Troubleshooting procedure

Step	Check	Result	Action
1	Toner is present along the paper path.	YES	• Clean.
2	Drum is dirty or scratchy.	YES	• Clean or change.
3	Tip of the drum paper separator finger is dirty, scratchy, deformed, worn, or damaged.	YES	• Clean or change.
4	Fusing roller is dirty or scratchy.	YES	• Clean or change.
5	Tip of the fusing paper separator finger is dirty, scratchy, deformed, worn, or damaged.	YES	• Clean or change fusing paper separator fingers and finger springs.
6	The image changes when "VG ADJUST" is executed.	YES	• Readjust. For details, see I.4.3.7 VG ADJUST.

4.2.18 Printer section: Blank streaks or bands

1. Typical faulty images

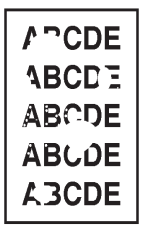


2. Troubleshooting procedure

Step	Check	Result	Action
1	Drum ground terminal is dirty, scratchy, deformed, or damaged.	YES	• Clean, correct, or change.
2	Db (Blade to control the toner's adherence)of IU is plugged with foreign matter (such as paper dust).	YES	• Remove foreign matter.
3	Drum charge corona grid mesh and comb electrode are dirty, scratchy, deformed, or damaged.	YES	• Clean, correct, or change.
4	Post-fusing guide plate is dirty, scratchy, deformed, worn, or damaged.	YES	• Clean or change.
5	PH window of the PH unit is dirty, scratchy, or damaged.	YES	• Clean or change.
		NO	• Change IU.

4.2.19 Printer section: Void areas

1. Typical faulty images



2. Troubleshooting procedure

Step	Check	Result	Action
1	Foreign matter is present along the paper path.	YES	• Remove foreign matter.

Step	Check	Result	Action
2	Paper dust plugs up the paper dust remover.	YES	• Clean or change.
3	Drum charge corona, grid mesh, and comb electrode are loose.	YES	• Reinstall.
4	Drum charge corona contact is dirty, scratchy, deformed, worn, or damaged.	YES	• Clean, correct, or change.
5	Developing roller is dirty, scratchy, deformed, worn, or damaged.	YES	• Clean or change.
6	Toner is even on sleeve/magnet roller.	NO	• Adjust Db (Blade to control the toner's adherence).
7	Developer is not even in the developer mixing chamber of IU.	YES	• Even out developer in the developer mixing chamber.
8	Db (Blade to control the toner's adherence) of IU is plugged with foreign matter (such as paper dust).	YES	• Remove foreign matter.
9	Transfer roller is dirty, scratchy, deformed, worn, or damaged.	YES	• Clean, correct, or change.
10	Transfer roller unit is installed correctly.	NO	• Reinstall.
11	Charge neutralizing plate is dirty, scratchy, folded, or bent.	YES	• Clean, correct, or change.
12	Fusing roller is dirty, scratchy, deformed, or worn.	YES	• Clean or change.
		NO	• Change IU.

4.2.20 Printer section: Smear on back

1. Typical faulty images



2. Troubleshooting procedure

Step	Check	Result	Action
1	Toner is spilled over area inside copier.	YES	• Clean interior.
2	Toner is present along the paper path.	YES	• Clean.
3	Fusing pressure roller is dirty, scratchy, or damaged.	YES	• Clean or change.
4	Transfer roller is dirty.	YES	• Clean or change.
5	Grid bias contact is dirty, scratchy, deformed, worn, or damaged.	YES	• Clean, correct, or change.
		NO	• Change high voltage unit (HV1).
			• Change MFP board (MFPB).

4.2.21 Printer section: Uneven image density

1. Typical faulty images



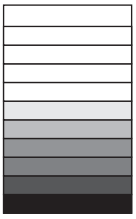
2. Troubleshooting procedure

Step	Check	Result	Action
1	Drum ground plate is dirty, scratchy, deformed, worn, or damaged.	YES	• Clean, correct, or change.
2	Drum charge corona grid mesh and comb electrode are dirty, scratchy, deformed, worn, damaged, or loose.	YES	• Clean, correct, or change.

Step	Check	Result	Action
3	Transfer roller is dirty, scratchy, deformed, worn, or damaged.	YES	• Clean or change.
4	Sleeve/magnet roller is dirty, scratchy, deformed, worn, or damaged.	YES	• Clean or change.
5	Toner is even on sleeve/magnet roller.	NO	• Adjust Db (Blade to control the toner's adherence).
6	Developer is not even in the developer mixing chamber of IU.	YES	• Even out developer in the developer mixing chamber.
		NO	• Change IU.
			• Change MFP board (MFPB).

4.2.22 Printer section: Gradation reproduction failure

1. Typical faulty images



2. Troubleshooting procedure

Step	Check	Result	Action
1	Drum is dirty.	YES	• Clean.
2	Transfer roller is dirty, scratchy, deformed, worn, or damaged.	YES	• Clean or change.
3	The PH unit cable is loose.	YES	• Reconnect.
4	PH window of PH unit is dirty.	YES	• Clean.
5	TCR sensor board (TCRSB) is dirty with foreign matter (such as paper dust) other than developer.	YES	• Clean.
6	Is a power voltage supplied across MFPB P010-relay CN14-TCRSB?	NO	• Change TCR sensor board (TCRSB) and developer.
	<Check procedure> Check voltage across the MFP board pin and GND when the power switch is turned ON.	YES	• Change MFP board (MFPB).

4.2.23 Printer section: Periodically uneven image

1. Typical faulty images



2. Troubleshooting procedure

Step	Check	Result	Action
1	IU is securely fastened using the dedicated fixing screws.	NO	• Secure in position.
2	PH unit is securely fastened using the dedicated fixing screws.	NO	• Secure in position.
3	IU drive mechanism is dirty or damaged.	YES	• Clean or change.
4	Drum surfaces in contact with Ds collars and drive mechanism are dirty, scratchy, deformed, or worn.	YES	• Clean or change.
5	Registration roller drive mechanism is dirty, scratchy, deformed, or worn.	YES	• Clean or change.
6	Fusing unit drive mechanism is dirty, scratchy, deformed, or worn.	YES	• Clean or change.

Step	Check	Result	Action
		NO	• Change MFP board (MFPB).

5. FAX ERROR

5.1 When faxing is not performed correctly

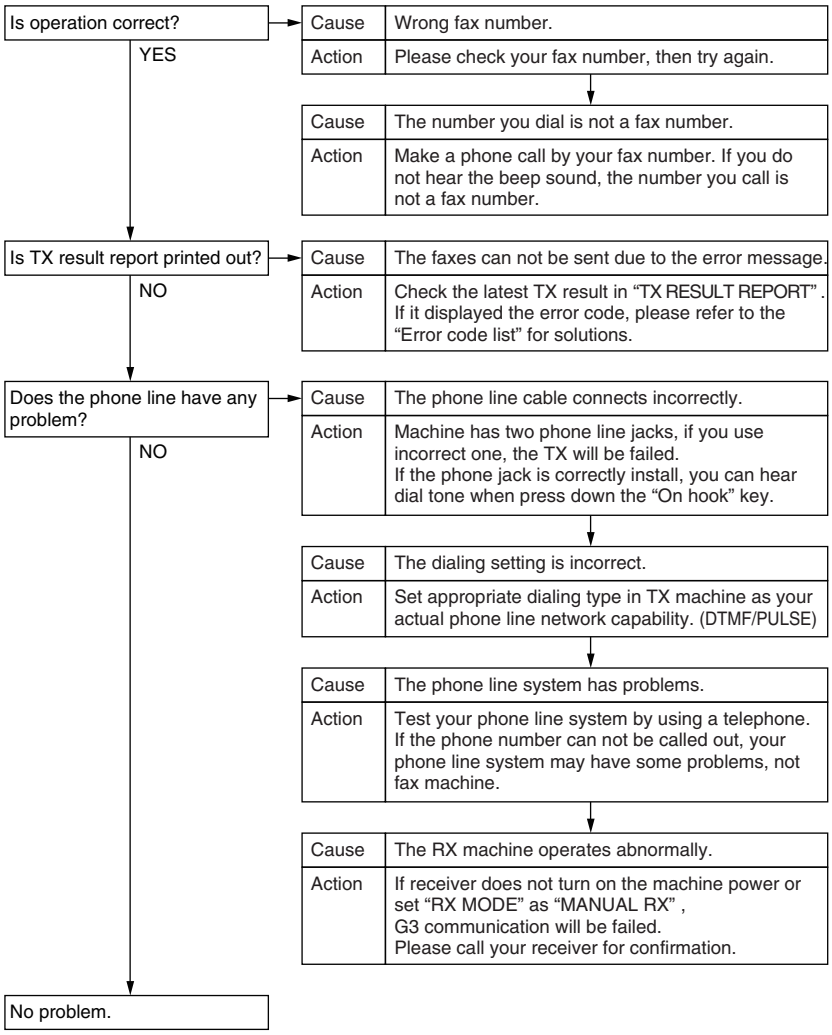
- To explain the solution when faxing is not performed correctly.

NOTE

- **bizhub 235/215/195 does not support the "ISDN/DSL/ADSL" line officially, it may cause the fax failed in such user environment.**

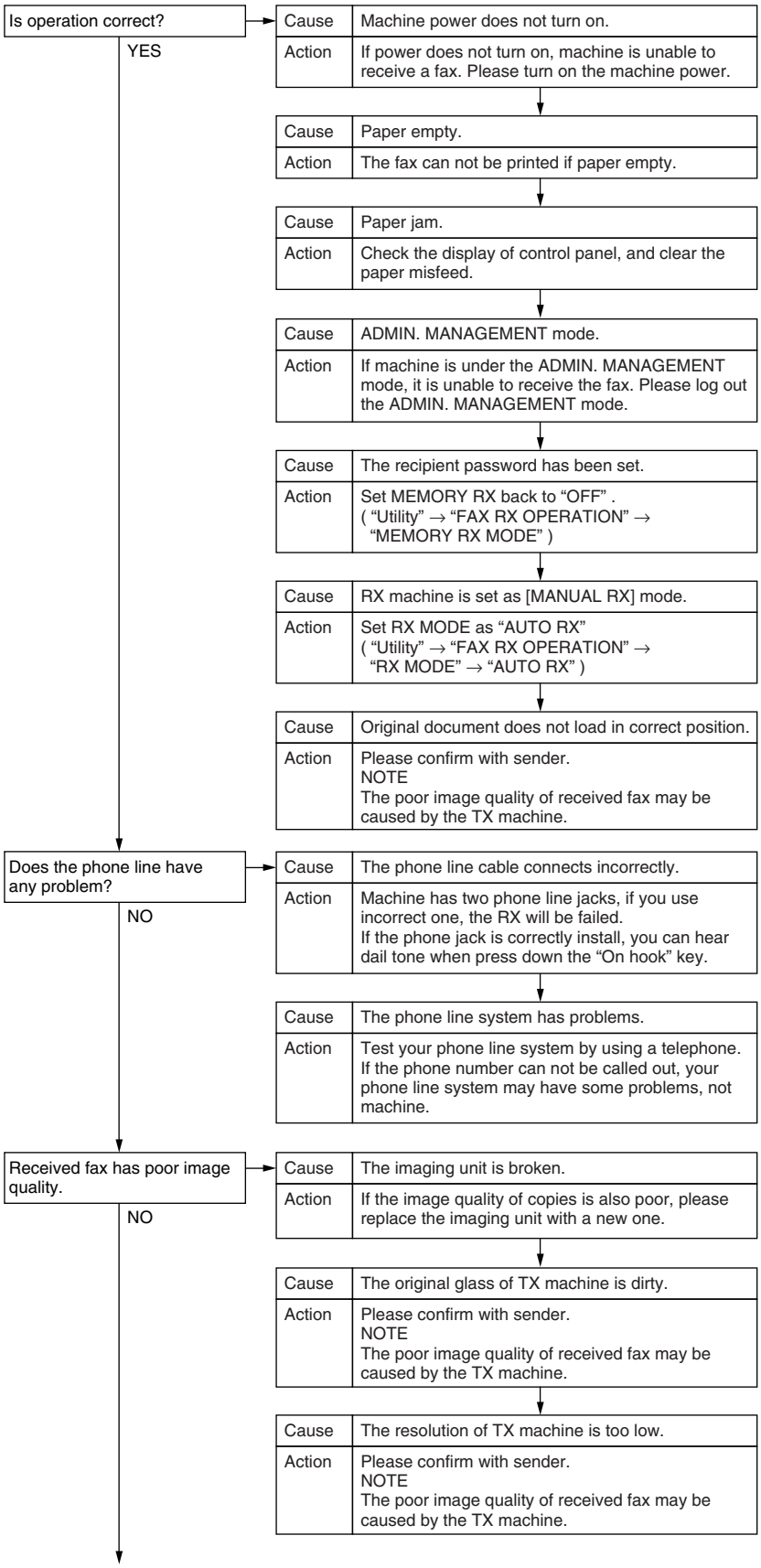
5.1.1 Can not send a fax

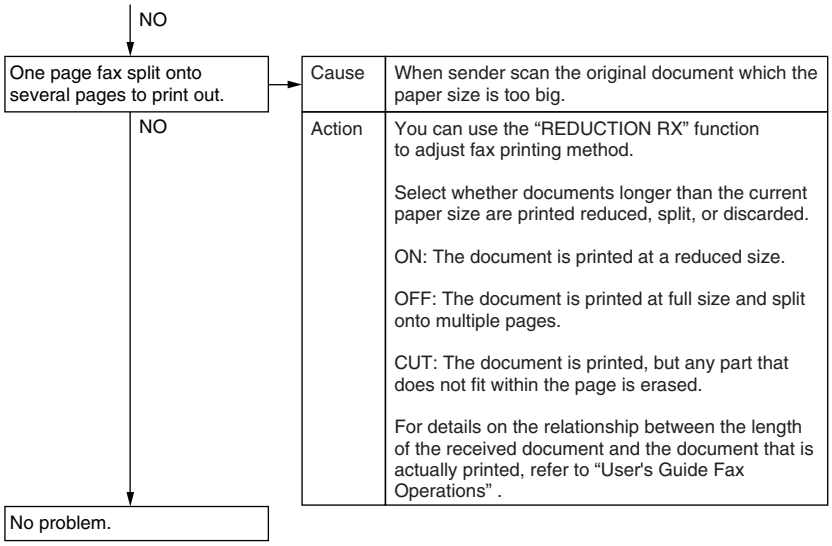
- To explain the solution when fax can not be sent.



5.1.2 Can not receive a fax

- To explain the solution when fax can not be received.


Is operation correct?
YES
Cause
Machine power does not turn on.
Action
If power does not turn on, machine is unable to receive a fax. Please turn on the machine power.
Cause
Paper empty.
Action
The fax can not be printed if paper empty.
Cause
Paper jam.
Action
Check the display of control panel, and clear the paper misfeed.
Cause
ADMIN. MANAGEMENT mode.
Action
If machine is under the ADMIN. MANAGEMENT mode, it is unable to receive the fax. Please log out the ADMIN. MANAGEMENT mode.
Cause
The recipient password has been set.
Action
Set MEMORY RX back to “OFF” .
(“Utility” → “FAX RX OPERATION” →
“MEMORY RX MODE”)
Cause
RX machine is set as [MANUAL RX] mode.
Action
Set RX MODE as “AUTO RX”
(“Utility” → “FAX RX OPERATION” →
“RX MODE” → “AUTO RX”)
Cause
Original document does not load in correct position.
Action
Please confirm with sender.
NOTE
The poor image quality of received fax may be caused by the TX machine.
Does the phone line have any problem?
NO
Cause
The phone line cable connects incorrectly.
Action
Machine has two phone line jacks, if you use incorrect one, the RX will be failed.
If the phone jack is correctly install, you can hear dail tone when press down the “On hook” key.
Cause
The phone line system has problems.
Action
Test your phone line system by using a telephone.
If the phone number can not be called out, your phone line system may have some problems, not machine.
Received fax has poor image quality.
NO
Cause
The imaging unit is broken.
Action
If the image quality of copies is also poor, please replace the imaging unit with a new one.
Cause
The original glass of TX machine is dirty.
Action
Please confirm with sender.
NOTE
The poor image quality of received fax may be caused by the TX machine.
Cause
The resolution of TX machine is too low.
Action
Please confirm with sender.
NOTE
The poor image quality of received fax may be caused by the TX machine.



5.1.3 Dialing connection problem

- To explain the solution when dialing connection has problems.

Can not hear any voice, when pick up the phone.	Cause	The phone line cable connects incorrectly with machine.
	Action	Make sure the phone line connects to the “TEL” jack of machine.
	Cause	The phone line cable from wall jack to machine connects incorrectly.
	Action	Make sure the phone line cable from wall jack to machine connects to the “LINE” jack of machine.
After dialing, can not hear the ring back tone.	Cause	The telephone network system does not support the selected dialing type.
	Action	Set correct dialing type (DTMF/PULSE) in the machine.
After press down “On hook” key, it is hard to hear the voice from receiver/sender.	Cause	The volume of line monitor is too low.
	Action	Increase the volume of line monitor. (“Utility” → “ADMIN. MANAGEMENT” → “COMM. SETTING” → “LINE MONITOR”)
The ringing volume of phone is too low (loud).	Cause	The ringing volume of the phone is set too low (loud).
	Action	Adjust the ringing volume of connected phone.

5.2 Communication error



5.2.1 Outline

- Error caused by a problem of communication functioning. Five possible causes of errors are:

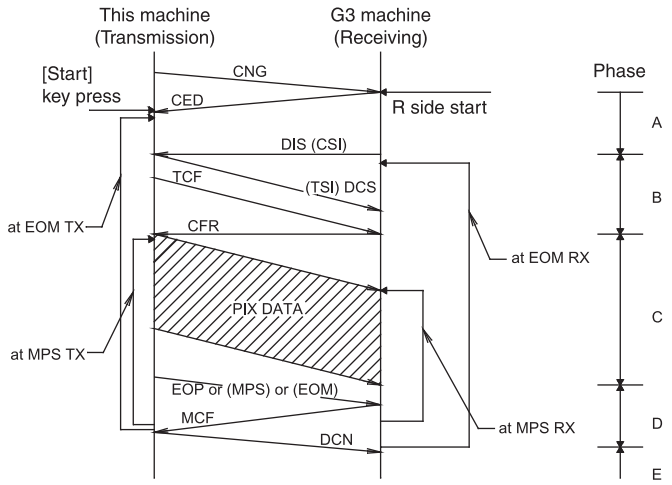
1. Communication is discontinued by a machine error.
2. Communication is discontinued by a machine trouble.
3. Communication is discontinued by an error occurring at the destination station.
4. Communication is discontinued by a protocol error.
5. ADF Error on trouble.

NOTE

- **When communication is discontinued due to item 3 or 4, transmission is retried. In other case, transmission is canceled without retry.**

5.2.2 Error occurring during transmission

- The transmission error before “Phase-B” performs redial according to the redial interval of each country and the number of times.
  The transmission error after “Phase-C” performs redial only one time. Transmission is canceled when an error occurs again. (can change in Soft SW)
  When an error occurs by ADF TX, transmission is canceled without redial.



5.2.3 Error occurring during reception

- Reception is canceled.

5.3 Error code list

5.3.1 Reception

Code	Possible Causes of Error.
0001	Nothing G3 signal received within 35 sec.
0003	Received DIS after sending DIS signal.
0004	Received DCN after sending DTC signal.
0009	Can not receive any signal within 35 sec. in manual polling mode.
0010	Received DCN signal after sending DTC signal in polling RX.
0011	Can not receive any correct response after sending three DTC signal.
0012	Remote side password not match in polling RX/our side no any file to be polling.
0013	Can not receive carrier within 6 sec. after sending CFR in data phase C.
0014	Can not receive T.30 signal after sending FTT signal.
0016	Receive DCN signal after sending FTT signal.
0017	Can not receive any response from remote side after sending DIS.
0018	Can not detect energy within 6 sec. after sending FTT command.
0019	Received DCN signal after sending CFR signal.
001A	No energy on line over 6 sec. within phase C before any corrected ECM frame.
001D	Detect flag but nothing after CFR.
001E	Timeout in V.17 ECM RX phase C.
001F	Can not detect any G3 signal within 35 sec. after sending DTC signal.
0020	Can not correct frame within 6 sec. at phase C.
0021	File full.
0022	Owing to noise interference on the line, receiving side can not receive correct data within specified time (no ECM).
0023	Received PWD error in RSD or upgrade F/W.
0024	TX and RX machine both are different machine ID in RSD or upgrade F/W.
0025	TX and RX machine both are different company ID in RSD or upgrade F/W.
0026	Remote monitor level error remote side can not access in RSD or upgrade F/W.
0027	RSD connect fail when user during operation or machine has some error.
0029	Mailbox password not set or not match for mailbox receiving.
0030	Can not receive any signal within 6 sec. at phase D.
0031	Received incorrect signal at phase D (not EOP, MPS, EOM, DCS PPS_Q, PPS_Q, etc.).

Code	Possible Causes of Error.
0032	Can not receive carrier within 6 sec. after sending MCF or RTP, RTN signal.
0033	Received DCN signal at phase D within pages (not last page).
0039	In non-ECM mode, when machine already received the data but next line data does not receive within 13.1 seconds.
003F	Remote side TSI not define in machine one touch or speed dial directory.
0040	Can not receive carrier within 6 sec. after sending CTR.
0041	Can not receive carrier within 6 sec. after sending PPR.
0042	Can not receive correct signal after sending RNR signal.
0043	Receive incorrect signal at phase D in ECM mode.
0044	Can not receive carrier /FSK signal within 6 sec. after sending MCF in ECM mode.
0047	Can not receive correct signal after sending ERR signal.
0048	Can not receive correct signal after receive PPS_PRI_Q or PRI_Q, EOR_PRI_Q.
004B	Can not detect correct FSK signal even through detected FSK tone within 6 sec.
004C	Handshake fail during re-train or between page in V.34 RX.
004E	Receive DCN signal after sending DIS in V.34.
004F	Remote side disconnected after sending ANSam in V.8 phase.
0050	Can not receive any correct signal after sending CJ signal in V.8 phase.
0051	Can not receive phase 3 signal after phase 2 within 20 seconds in V.34.
0053	Modem disconnect after phase 4 in V.34.
0054	Remote side disconnected after phase 4 in V.8.
0055	Receive incorrect signal after sending DIS signal in V.34.
0056	Modem disconnect after sending CFR in V.34.
0058	Can not detect image signal within 6 seconds after modem enter to primary phase in V.34.
0059	Relay box is deletion when during receive relay job.
005A	Modem can not detect any correct ECM frame within 3 minutes at phase C.
005B	Modem can not detect control channel within 12 sec. at phase C.
005C	Detect busy tone within control channel after phase C.
005D	Modem can not detect any correct ECM frame within 12 sec. at phase C.
005E	Can not detect control channel signal after received RCP frame within 6 seconds.
005F	Can not detect silence after sending JM signal for polling TX function.
0060	There are no any bulletin files to be polled in V.34.
0061	Machine can not detect V.21 or V.8 signal within 35 seconds.
0062	Modem disconnect in phase D after our side sending out flags sequence in control channel.
0063	Can not receive any flag sequence in control channel within 6 seconds in phase D.
0064	Can not detect any control channel signal in phase D within 60 seconds even through signal still on the line.
0065	Can not detect any control channel signal within 60 seconds after detect silence in phase D.
0066	Can not receive T.30 signal or carrier after sending CFR in V.34.
0070	User press stop key within receiving.
0071	Memory full within receiving.
0072	Received EOR_Q Signal.
007C	[PC Fax] Machine memory full.
007D	[PC Fax] Machine file full.

5.3.2 Transmission

Code	Possible Causes of Error.
0080	Can not detect any G3 signal within 35 sec. specified by ITU-T in phase B.
0081	Received DTC signal from the remote side.
0082	Transmitting unit receives a signal other than DIS or DTC and DCN in phase B.
0083	Detected FSK signal, but can not receive any signal within 35 seconds.
0084	Detect DCN signal in phase B.
0085	Transmitting unit sending DCS 3 times consecutively, but each time responds with DIS/DTC.
0086	Detected responds signal other than DTC, DIS, FTT, DCN or CFR after sending DCS.
0087	Training attempt has failed because signal can not adjust to lower speed.
0088	Received DCN signal after sending out DCS signal.
0089	Remote side no mailbox function or not compatible.
008B	Receiver's protocol of DIS is received, but it is not compatible with our machine.
008C	Remote side or our side not support capability.
008D	Receiver's protocol of DIS is received, but remote side can not receive document, may be cause by run out of paper or other reason.

Code	Possible Causes of Error.
008F	Modem not ready to received V.34 data within 6 seconds after received CFR signal.
0090	Called side document not ready for our polling.
0091	Sending out DCS+TCF signal 3 times consecutively but no signal in response from receiver.
0092	Sub address / Password capability not match in polling RX mode.
0093	Received DCN signal after sending out DCS signal.
0094	Time out during transmit ECM frame or RCP command.
0095	Wrong ID number.
009A	Can not detect any signal after sending CI signal.
009D	Remote side hang up before V.34 modem enter phase 2 state in V.34 polling RX.
009E	Manual TX over 15 min. when in phase C by Non-ECM mode.
00A0	User stop or cancel transmission job.
00A1	Document JAM within transmission.
00AE	Can not finished V.8 procedure or detect V.21 signal after CM signal within 30 seconds.
00AF	Modem can not enter into control channel after TX side sending out RCP signal.
00B1	Can not finish V.8 procedure or detect V.21 signal after ANSam signal within 35 seconds.
00B2	Can not detect phase 2 signal after our side sending CJ signal within 30 seconds.
00B3	Can not detect correct V.21 or JM signal after sending CM or CJ signal.
00B4	Can not detect correct phase 2 signal within 25 second after CM/JM signal exchange.
00B5	Can not detect phase 3 signal after phase 2 within 25 seconds.
00B6	Can not detect phase 4 signal within 25 seconds after CM/JM exchange.
00B8	Remote side disconnect after our side sending DCS signal in V.34.
00BA	Can not received correct signal after our side sending DTC signal in V.34.
00BB	Every time our side received DIS signal after sending DTC in V.34.
00BC	Modem can not ready within 10 seconds after entering primary channel in V.34.
00BD	Can not detect correct V.21 or JM signal after detected FSK frequency.
00BE	Remote side no document to be polled after V8 handshaking.
00BF	Capability no match.
00C1	At phase D, transmitting units out EOP 3 times consecutively, but receive no answer from receiving unit.
00C2	Remote side disconnect after sending out V.8 CM signal.
00C4	After sending MPS signal, the received is not one of MCF, RTN, PIP, PIN, RTP, DCN.
00C5	Received DCN signal after sending MPS signal.
00C9	At phase D, sending MPS 3 times consecutively, but no answer from receiving unit.
00CA	After sending EOP signal, the received is not one of MCF, RTN, PIP, PIN, PRI-EOP, DCN, RTP.
00CB	After sending EOP signal, the received is DCN signal.
00CC	After sending EOM signal, the received is not one of MCF, RTN, PIP, PIN, RTP, DCN.
00CD	At phase D, transmitting units out EOM 3 times consecutively, but receive no answer.
00CE	At phase D, transmitting units out EOM, but receive DCN.
00CF	Received incorrect signal after sending DTC signal for V.34 polling.
00D0	Received ERR signal after sending EOR_NULL.
00D1	Received incorrect response after sending PPS_EOP signal in V.34.
00D2	Received DCN after sending PPS_EOP signal.
00D3	Received DCN after sending PPS_NULL signal.
00D4	Received DCN after sending PPS_EOM signal.
00D8	Can not detect correct phase 3 signal for polling.
00D9	Can not detect correct phase 3 signal after detect silence after phase 2.
00DA	Can not detect phase 4 signal within 30 seconds or remote side hang up over 6 seconds.
00DB	Can not receive any T.30 signal within 30 seconds within phase 4.
00DC	Received T.30 signal in phase 4 other than DCS, DIS or DTC.
00DD	Remote side not the same model or no any mailbox ID defined for mailbox TX.
00DE	Remote side no SUB capability in V.34.
00E0	At phase D, transmitting units out PPS_NULL 3 times consecutively but receive not answer.
00E1	Received incorrect response after sending PPS_NULL.
00E2	Can not receive any response in RR response procedure after sending PPS_NULL.
00E4	At phase D, transmitting units out PPS_MPS 3 times consecutively but receive no answer.
00E5	Received incorrect response after sending PPS_MPS.
00E6	Can not receive any response in RR response procedure after sending PPS_MPS.
00E7	Received DCN after sending PPS_MPS.
00E8	At phase D, transmitting units out PPS_EOP 3 times consecutively but receive no answer.

Code	Possible Causes of Error.
00E9	Receive PIN signal after sent last page data.
00EA	Can not receive any response in RR response procedure after sending PPS_EOP.
00EB	At phase D, transmitting units out PPS_EOM 3 times consecutively but receive no answer.
00EC	Received incorrect response after sending PPS_EOM.
00ED	Can not receive any response in RR response procedure after sent out PPS_EOM.
00EE	At phase D, transmitting units out EOR_NULL 3 times consecutively but receive no answer.
00EF	Received incorrect response after sending EOR_NULL.
00F0	Can not receive any response procedure after sending EOR_NULL.
00F1	At phase D, transmitting units out EOR_MPS 3 times consecutively but receive no answer.
00F2	Received incorrect response after sending EOR_MPS.
00F3	Received ERR signal after sending EOR_MPS.
00F4	Can not receive any response in RR response procedure after sending EOR_MPS.
00F5	At phase D, transmitting units out EOR_EOP 3 times consecutively but receive no answer.
00F6	Received incorrect response after sending EOR_EOP.
00F7	After Received ERR, our side can not received response after sending EOR_EOP command.
00F8	At phase D, transmitting units out EOR_EOM 3 times consecutively but receive no answer.
00F9	Received incorrect response after sending EOR_EOM.
00FA	Received ERR signal after sending EOR_EOM.
00FB	Can not receive any response in RR response procedure after sending EOR_EOM.
00FC	Can not receive any response after sending CTC.
00FD	Can not communication speed down to lower speed in ECM mode.
00FE	Memory full for transmission.
00FF	Redial all fail.

5.4 Error codes and corresponding solution

- An error code can have more than one definition (cause), and more than one solution.

NOTE

- **<*1>: Please enter service mode to boost TX level of bizhub 235/215/195. (SERVICE MODE -> SERVICE'S CHOICE -> TX LEVEL)**

5.4.1 Reception error code (000X)

(1) Error code: 0001

(a) Definition

Nothing G3 signal received within 35 sec.

(b) Solution

1. Check whether the sender is the FAX machine or not.
2. Check whether the telephone line is connect correctly or not.
3. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
4. Boost the TX level of sender's machine.
5. Boost the machine TX level. <*1>
6. Set SOFT SW21 [3] to “1” (DIS signal length = 4 bytes).

NOTE

- **The default setting is “0” (DIS signal length = 8 bytes).**

(2) Error code: 0003

(a) Definition

Received DIS after sending DIS signal.

(b) Solution

1. The cause is the sender does not place the original document correctly for faxing. Ask sender put the original document correctly and resend the FAX again.

5.4.2 Reception error code (001X)

(1) Error code: 0013

(a) Definition

Can not receive carrier within 6 sec. after sending CFR in data phase C.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Boost the TX level of sender's machine.

3. Boost the machine TX level. <*1>

(2) Error code: 0014

(a) Definition

Can not receive T.30 signal after sending FTT signal.

(b) Solution

1. Ask sender resend the FAX again.
2. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
3. Boost the TX level of sender's machine.
4. Boost the machine TX level. <*1>

(3) Error code: 0016

(a) Definition

Receive DCN signal after sending FTT signal.

(b) Solution

1. Ask sender resend the FAX again.
2. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(4) Error code: 0017

(a) Definition

Can not receive any response from remote side after sending DIS.

(b) Solution

1. Ask sender resend the FAX again.
2. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
3. Boost the TX level of sender's machine.
4. Boost the machine TX level. <*1>

(5) Error code: 0018

(a) Definition

Can not detect energy within 6 sec. after sending FTT command.

(b) Solution

1. Ask sender resend the FAX again.
2. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
3. Boost the TX level of sender's machine.
4. Boost the machine TX level. <*1>

(6) Error code: 0019

(a) Definition

Received DCN signal after sending CFR signal.

(b) Solution

1. Ask sender resend the FAX again.
2. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(7) Error code: 001A

(a) Definition

No energy on line over 6 sec. within phase C before any corrected ECM frame.

(b) Solution

1. Ask sender resend the FAX again.
2. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
3. Change the machine setting to ECM OFF, and then resend again.
4. Boost the TX level of sender's machine.

(8) Error code: 001D

(a) Definition

Detect flag but nothing after CFR.

(b) Solution

1. Ask sender resend the FAX again.
2. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
3. Boost the TX level of sender's machine.

(9) Error code: 001F

(a) Definition

Can not detect any G3 signal within 35 sec. after sending DTC signal.

(b) Solution

1. Check the line condition, and then ask sender resend the FAX again.

5.4.3 Reception error code (002X)

(1) Error code: 0020

(a) Definition

Can not correct frame within 6 sec. at phase C.

(b) Solution

1. Ask sender resend the FAX again.
2. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
3. Boost the TX level of sender's machine.

(2) Error code: 0021

(a) Definition

File full.

(b) Solution

1. Print out the receiving data which was stored in the FAX memory or delete the unnecessary data.
2. Execute MEMORY CLEAR.
3. Reboot the machine.

(3) Error code: 0022

(a) Definition

Owing to noise interference on the line, receiving side can not receive correct data within specified time (no ECM).

(b) Solution

1. Ask sender resend the FAX again.
2. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
3. Boost the TX level of sender's machine.
4. Boost the machine TX level. <*1>

5.4.4 Reception error code (003X)

(1) Error code: 0030

(a) Definition

Can not receive any signal within 6 sec. at phase D.

(b) Solution

1. Ask sender resend the FAX again.
2. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
3. Boost the TX level of sender's machine.
4. Boost the machine TX level. <*1>

(2) Error code: 0031

(a) Definition

Received incorrect signal at phase D (not EOP, MPS, EOM, DCS PPS_Q, PPS_Q, etc.).

(b) Solution

1. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(3) Error code: 0032

(a) Definition

Can not receive carrier within 6 sec. after sending MCF or RTP, RTN signal.

(b) Solution

1. Ask sender resend the FAX again.
2. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
3. Boost the TX level of sender's machine.
4. Boost the machine TX level. <*1>
5. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(4) Error code: 0033

(a) Definition

Received DCN signal at phase D within pages (not last page).

(b) Solution

1. Ask sender resend the FAX again.
2. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(5) Error code: 0039

(a) Definition

In non-ECM mode, when machine already received the data but next line data does not receive within 13.1 seconds.

(b) Solution

1. Ask sender resend the FAX again.
2. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
3. Boost the TX level of sender's machine.

(6) Error code: 003F

(a) Definition

Remote side TSI not define in machine one touch or speed dial directory.

(b) Solution

1. Register the remote side telephone number in GROUP DIAL or SPEED DIAL of machine.
2. Print out the GROUP DIAL and SPEED DIAL to confirm that the registered telephone number is the same as the coming sender's number.

5.4.5 Reception error code (004X)

(1) Error code: 0040

(a) Definition

Can not receive carrier within 6 sec. after sending CTR.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Print out the protocol report, and provide it to service center, ask for analyzing the information.
3. Boost the TX level of sender's machine.

(2) Error code: 0041

(a) Definition

Can not receive carrier within 6 sec. after sending PPR.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Print out the protocol report, and provide it to service center, ask for analyzing the information.
3. Boost the TX level of sender's machine.

(3) Error code: 0042

(a) Definition

Can not receive correct signal after sending RNR signal.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.

2. Print out the protocol report, and provide it to service center, ask for analyzing the information.
3. Boost the TX level of sender's machine.

(4) Error code: 0043

(a) Definition

Receive incorrect signal at phase D in ECM mode.

(b) Solution

1. Change the machine setting to ECM OFF, and then ask sender resend again.
2. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(5) Error code: 0044

(a) Definition

Can not receive carrier /FSK signal within 6 sec. after sending MCF in ECM mode.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Change the machine setting to ECM OFF, and then ask sender resend again.
3. Boost the TX level of sender's machine.
4. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(6) Error code: 0047

(a) Definition

Can not receive correct signal after sending ERR signal.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Print out the protocol report, and provide it to service center, ask for analyzing the information.
3. Boost the TX level of sender's machine.

(7) Error code: 0048

(a) Definition

Can not receive correct signal after receive PPS_PRI_Q or PRI_Q, EOR_PRI_Q.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Print out the protocol report, and provide it to service center, ask for analyzing the information.
3. Boost the TX level of sender's machine.

(8) Error code: 004B

(a) Definition

Can not detect correct FSK signal even through detected FSK tone within 6 sec.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Print out the protocol report, and provide it to service center, ask for analyzing the information.
3. Boost the TX level of sender's machine.

(9) Error code: 004C

(a) Definition

Handshake fail during re-train or between page in V.34 RX.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Change the machine setting to ECM OFF, and then ask sender resend again.
3. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(10) Error code: 004E

(a) Definition

Receive DCN signal after sending DIS in V.34.

(b) Solution

1. Ask sender resend the FAX again.
2. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(11) Error code: 004F

(a) Definition

Remote side disconnected after sending ANSam in V.8 phase.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Change the machine setting to ECM OFF, and then ask sender resend again.
3. Print out the protocol report, and provide it to service center, ask for analyzing the information.

5.4.6 Reception error code (005X)

(1) Error code: 0050

(a) Definition

Can not receive any correct signal after sending CJ signal in V.8 phase.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Change the machine RX speed to V.17, and then ask sender resend again.
3. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(2) Error code: 0051

(a) Definition

Can not receive phase 3 signal after phase 2 within 20 seconds in V.34.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Change the machine setting to ECM OFF, and then ask sender resend again.
3. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(3) Error code: 0053

(a) Definition

Modem disconnect after phase 4 in V.34.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Change the machine RX speed to V.17, and then ask sender resend again.
3. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(4) Error code: 0054

(a) Definition

Remote side disconnected after phase 4 in V.8.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Change the machine RX speed to V.17, and then ask sender resend again.
3. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(5) Error code: 0055

(a) Definition

Receive incorrect signal after sending DIS signal in V.34.

(b) Solution

1. Change the machine RX speed to V.17, and then ask sender resend again.
2. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(6) Error code: 0056

(a) Definition

Modem disconnect after sending CFR in V.34.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Change the machine RX speed to V.17, and then ask sender resend again.
3. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(7) Error code: 0058

(a) Definition

Can not detect image signal within 6 seconds after modem enter to primary phase in V.34.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Change the machine RX speed to V.17, and then ask sender resend again.
3. Change the machine setting to ECM OFF, and then ask sender resend again.
4. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(8) Error code: 005A

(a) Definition

Modem can not detect any correct ECM frame within 3 minutes at phase C.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Change the machine setting to ECM OFF, and then ask sender resend again.
3. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(9) Error code: 005B

(a) Definition

Modem can not detect control channel within 12 sec. at phase C.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(10) Error code: 005C

(a) Definition

Detect busy tone within control channel after phase C.

(b) Solution

1. Ask sender resend the FAX again.
2. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
3. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(11) Error code: 005D

(a) Definition

Modem can not detect any correct ECM frame within 12 sec. at phase C.

(b) Solution

1. Ask sender resend the FAX again.
2. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
3. Change the machine setting to ECM OFF, and then ask sender resend again.
4. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(12) Error code: 005E

(a) Definition

Can not detect control channel signal after received RCP frame within 6 seconds.

(b) Solution

1. Ask sender resend the FAX again.
2. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
3. Boost the TX level of sender's machine.
4. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(13) Error code: 005F

(a) Definition

Can not detect silence after sending JM signal for polling TX function.

(b) Solution

1. Check the line condition, and then ask sender resend the FAX again.

5.4.7 Reception error code (006X)

(1) Error code: 0060

(a) Definition

There are no any bulletin files to be polled in V.34.

(b) Solution

1. Polling TX is not available.

(2) Error code: 0061

(a) Definition

Machine can not detect V.21 or V.8 signal within 35 seconds.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Boost the TX level of sender's machine.
3. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(3) Error code: 0062

(a) Definition

Modem disconnect in phase D after our side sending out flags sequence in control channel.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Boost the TX level of sender's machine.
3. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(4) Error code: 0063

(a) Definition

Can not receive any flag sequence in control channel within 6 seconds in phase D.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Boost the TX level of sender's machine.
3. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(5) Error code: 0064

(a) Definition

Can not detect any control channel signal in phase D within 60 seconds even through signal still on the line.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Boost the TX level of sender's machine.
3. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(6) Error code: 0065

(a) Definition

Can not detect any control channel signal within 60 seconds after detect silence in phase D.

(b) Solution

1. Ask sender resend the FAX again.
2. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
3. Boost the TX level of sender's machine.
4. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(7) Error code: 0066

(a) Definition

Can not receive T.30 signal or carrier after sending CFR in V.34.

(b) Solution

1. Ask sender resend the FAX again.
2. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
3. Change the machine RX speed to V.17, and then ask sender resend again.
4. Boost the TX level of sender's machine.
5. Print out the protocol report, and provide it to service center, ask for analyzing the information.

5.4.8 Reception error code (007X)

(1) Error code: 0070

(a) Definition

User press stop key within receiving.

(b) Solution

1. Ask sender resend the FAX again.

(2) Error code: 0071

(a) Definition

Memory full within receiving.

(b) Solution

1. Split the document at sender, and send them by several different times.
2. Print out the receiving data which was stored in the FAX memory or delete the unnecessary data.
3. Reboot the machine.
4. Execute MEMORY CLEAR.

(3) Error code: 0072

(a) Definition

Received EOR_Q signal.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Reduce the TX level of sender's machine.
3. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(4) Error code: 007C

(a) Definition

[PC Fax] Machine memory full.

(b) Solution

1. Reset the machine to reset a memory full condition.
2. Ask sender resend the FAX again.

(5) Error code: 007D

(a) Definition

[PC Fax] Machine file full.

(b) Solution

1. Reset the machine to reset a file full condition.
2. Ask sender resend the FAX again.

5.4.9 Transmission error code (008X)

(1) Error code: 0080

(a) Definition

Can not detect any G3 signal within 35 sec. specified by ITU-T in phase B.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(2) Error code: 0081

(a) Definition

Received DTC signal from the remote side.

(b) Solution

1. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(3) Error code: 0082

(a) Definition

Transmitting unit receives a signal other than DIS or DTC and DCN in phase B.

(b) Solution

1. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(4) Error code: 0083

(a) Definition

Detected FSK signal, but can not receive any signal within 35 seconds.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Boost the TX level of sender's machine.
3. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(5) Error code: 0084

(a) Definition

Detect DCN signal in phase B.

(b) Solution

1. Resend the FAX again.
2. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(6) Error code: 0085

(a) Definition

Transmitting unit sending DCS 3 times consecutively, but each time responds with DIS/DTC.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Boost the machine TX level. <*1>

(7) Error code: 0086

(a) Definition

Detected responds signal other than DTC, DIS, FTT, DCN or CFR after sending DCS.

(b) Solution

1. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(8) Error code: 0087

(a) Definition

Training attempt has failed because signal can not adjust to lower speed.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Boost the machine TX level. <*1>
3. Adjust the SOFT SW12 [6-7] to “11”, while receiving 4 PPR, the speed will down.
4. Change the machine TX speed to V.17, then resend again.
5. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(9) Error code: 0088

(a) Definition

Received DCN signal after sending out DCS signal.

(b) Solution

1. Resend the FAX again.

2. Register the telephone number in machine.
3. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(10) Error code: 0089

(a) Definition

Remote side no mailbox function or not compatible.

(b) Solution

1. Send the fax without using the mailbox.

(11) Error code: 008B

(a) Definition

Receiver's protocol of DIS is received, but it is not compatible with our machine.

(b) Solution

1. Change the machine TX speed to V.33.6, then resend again.
2. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(12) Error code: 008D

(a) Definition

Receiver's protocol of DIS is received, but remote side can not receive document, may be cause by run out of paper or other reason.

(b) Solution

1. Contact with recipient, ask for refilling machine with paper.
2. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(13) Error code: 008F

(a) Definition

Modem not ready to received V.34 data within 6 seconds after received CFR signal.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Change the machine TX speed to V.17, then resend again.
3. Print out the protocol report, and provide it to service center, ask for analyzing the information.

5.4.10 Transmission error code (009X)

(1) Error code: 0090

(a) Definition

Called side document not ready for our polling.

(b) Solution

1. Check the line condition, and then ask sender resend the FAX again.

(2) Error code: 0091

(a) Definition

Sending out DCS+TCF signal 3 times consecutively but no signal in response from receiver.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Boost the TX level of sender's machine.
3. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(3) Error code: 0092

(a) Definition

Sub address / Password capability not match in polling RX mode.

(b) Solution

1. Check the sub address and password, and then resend the FAX again..

(4) Error code: 0093

(a) Definition

Received DCN signal after sending out DCS signal.

(b) Solution

1. Resend the FAX again.
2. Register the telephone number in machine.
3. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(5) Error code: 0094

(a) Definition

Time out during transmit ECM frame or RCP command.

(b) Solution

1. Change the machine setting to ECM OFF, then resend again.
2. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(6) Error code: 0095

(a) Definition

Wrong ID number.

(b) Solution

1. Set the correct ID, and then resend the FAX again.

(7) Error code: 009A

(a) Definition

Can not detect any signal after sending CI signal.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Boost the TX level of sender's machine.
3. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(8) Error code: 009E

(a) Definition

Manual TX over 15 min. when in phase C by Non-ECM mode.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Print out the protocol report, and provide it to service center, ask for analyzing the information.

5.4.11 Transmission error code (00AX)

(1) Error code: 00A0

(a) Definition

User stop or cancel transmission job.

(b) Solution

1. Resend the FAX again.

(2) Error code: 00A1

(a) Definition

Document JAM within transmission.

(b) Solution

1. Clear JAM ERROR, then resend the FAX again.

(3) Error code: 00AE

(a) Definition

Can not finished V.8 procedure or detect V.21 signal after CM signal within 30 seconds.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Boost the machine TX level. <*1>
3. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(4) Error code: 00AF

(a) Definition

Modem can not enter into control channel after TX side sending out RCP signal.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Boost the machine TX level. <*1>
3. Change the machine TX speed to V.17, then resend again.
4. Print out the protocol report, and provide it to service center, ask for analyzing the information.

5.4.12 Transmission error code (00BX)

(1) Error code: 00B1

(a) Definition

Can not finish V.8 procedure or detect V.21 signal after ANSam signal within 35 seconds.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Boost the machine TX level. <*1>
3. Change the machine TX speed to V.17, then resend again.
4. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(2) Error code: 00B2

(a) Definition

Can not detect phase 2 signal after our side sending CJ signal within 30 seconds.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Boost the machine TX level. <*1>
3. Change the machine TX speed to V.17, then resend again.
4. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(3) Error code: 00B3

(a) Definition

Can not detect correct V.21 or JM signal after sending CM or CJ signal.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Boost the machine TX level. <*1>
3. Change the machine TX speed to V.17, then resend again.
4. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(4) Error code: 00B4

(a) Definition

Can not detect correct phase 2 signal within 25 second after CM/JM signal exchange.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Boost the machine TX level. <*1>
3. Change the machine TX speed to V.17, then resend again.
4. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(5) Error code: 00B5

(a) Definition

Can not detect phase 3 signal after phase 2 within 25 seconds.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Boost the machine TX level. <*1>
3. Change the machine TX speed to V.17, then resend again.
4. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(6) Error code: 00B6

(a) Definition

Can not detect phase 4 signal within 25 seconds after CM/JM exchange.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Boost the machine TX level. <*1>
3. Change the machine TX speed to V.17, then resend again.
4. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(7) Error code: 00B8

(a) Definition

Remote side disconnect after our side sending DCS signal in V.34.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Boost the machine TX level. <*1>
3. Change the machine TX speed to V.17, then resend again.
4. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(8) Error code: 00BA

(a) Definition

Can not received correct signal after our side sending DTC signal in V.34.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Boost the TX level of sender's machine.
3. Change the machine TX speed to V.17, then resend again.
4. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(9) Error code: 00BB

(a) Definition

Every time our side received DIS signal after sending DTC in V.34.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Boost the TX level of sender's machine.
3. Change the machine TX speed to V.17, then resend again.
4. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(10) Error code: 00BC

(a) Definition

Modem can not ready within 10 seconds after entering primary channel in V.34.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Boost the machine TX level. <*1>
3. Change the machine TX speed to V.17, then resend again.
4. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(11) Error code: 00BD

(a) Definition

Can not detect correct V.21 or JM signal after detected FSK frequency.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Boost the TX level of sender's machine.
3. Change the machine TX speed to V.17, then resend again.
4. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(12) Error code: 00BE

(a) Definition

Remote side no document to be polled after V8 handshaking.

(b) Solution

1. Change the machine TX speed to V.17, then resend again.
2. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(13) Error code: 00BF

(a) Definition

Capability no match.

(b) Solution

1. Change the machine TX speed to V.17, then resend again.
2. Print out the protocol report, and provide it to service center, ask for analyzing the information.

5.4.13 Transmission error code (00CX)

(1) Error code: 00C1

(a) Definition

At phase D, transmitting units out EOP 3 times consecutively, but receive no answer from receiving unit.

(b) Solution

1. Resend the FAX again.
2. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
3. Set SOFT SW21 [5] to “1” (T4 timer = 4.5 sec.)
4. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(2) Error code: 00C2

(a) Definition

Remote side disconnect after sending out V.8 CM signal.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Resend the FAX again.
3. Change the machine TX speed to V.17, then resend again.
4. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(3) Error code: 00C4

(a) Definition

After sending MPS signal, the received is not one of MCF, RTN, PIP, PIN, RTP, DCN.

(b) Solution

1. Set SOFT SW21 [5] to “1” (T4 timer = 4.5 sec.)
2. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(4) Error code: 00C5

(a) Definition

Received DCN signal after sending MPS signal.

(b) Solution

1. Resend the FAX again.
2. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(5) Error code: 00C9

(a) Definition

At phase D, sending MPS 3 times consecutively, but no answer from receiving unit.

(b) Solution

1. Resend the FAX again.
2. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
3. Boost the TX level of sender's machine.
4. Adjust the SOFT SW02 [7-8] to “01” or “10” or “11”, then resend it again.
5. Set SOFT SW21 [5] to “1” (T4 timer = 4.5 sec.)

6. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(6) Error code: 00CA

(a) Definition

After sending EOP signal, the received is not one of MCF, RTN, PIP, PIN, PRI-EOP, DCN, RTP.

(b) Solution

1. Resend the FAX again.
2. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(7) Error code: 00CB

(a) Definition

After sending EOP signal, the received is DCN signal.

(b) Solution

1. Resend the FAX again.
2. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(8) Error code: 00CC

(a) Definition

After sending EOM signal, the received is not one of MCF, RTN, PIP, PIN, RTP, DCN.

(b) Solution

1. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(9) Error code: 00CD

(a) Definition

At phase D, transmitting units out EOM 3 times consecutively, but receive no answer.

(b) Solution

1. Resend the FAX again.
2. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
3. Boost the TX level of sender's machine.
4. Adjust the SOFT SW02 [7-8] to “01” or “10” or “11”, then resend it again.
5. Set SOFT SW21 [5] to “1” (T4 timer = 4.5 sec.)
6. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(10) Error code: 00CE

(a) Definition

At phase D, transmitting units out EOM, but receive DCN.

(b) Solution

1. Resend the FAX again.
2. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(11) Error code: 00CF

(a) Definition

Received incorrect signal after sending DTC signal for V.34 polling.

(b) Solution

1. Change the machine TX speed to V.17, then resend again.
2. Print out the protocol report, and provide it to service center, ask for analyzing the information.

5.4.14 Transmission error code (00DX)

(1) Error code: 00D0

(a) Definition

Received ERR signal after sending EOR_NULL.

(b) Solution

1. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(2) Error code: 00D1

(a) Definition

Received incorrect response after sending PPS_EOP signal in V.34.

(b) Solution

1. Change the machine TX speed to V.17, then resend again.
2. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(3) Error code: 00D2

(a) Definition

Received DCN after sending PPS_EOP signal.

(b) Solution

1. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(4) Error code: 00D3

(a) Definition

Received DCN after sending PPS_NULL signal.

(b) Solution

1. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(5) Error code: 00D4

(a) Definition

Received DCN after sending PPS_EOM signal.

(b) Solution

1. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(6) Error code: 00D8

(a) Definition

Can not detect correct phase 3 signal for polling.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Boost the machine TX level. <*1>
3. Change the machine TX speed to V.17, then resend again.
4. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(7) Error code: 00D9

(a) Definition

Can not detect correct phase 3 signal after detect silence after phase 2.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Boost the machine TX level. <*1>
3. Change the machine TX speed to V.17, then resend again.
4. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(8) Error code: 00DA

(a) Definition

Can not detect phase 4 signal within 30 seconds or remote side hang up over 6 seconds.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Boost the machine TX level. <*1>
3. Change the machine TX speed to V.17, then resend again.
4. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(9) Error code: 00DB

(a) Definition

Can not received any T.30 signal within 30 seconds within phase 4.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Boost the machine TX level. <*1>
3. Change the machine TX speed to V.17, then resend again.

4. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(10) Error code: 00DC

(a) Definition

Received T.30 signal in phase 4 other than DCS, DIS or DTC.

(b) Solution

1. Change the machine TX speed to V.17, then resend again.
2. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(11) Error code: 00DD

(a) Definition

Remote side not the same model or no any mailbox ID defined for mailbox TX.

(b) Solution

1. Check the remote machine for mailbox function and perform mailbox TX using the correct ID.

(12) Error code: 00DE

(a) Definition

Remote side no SUB capability in V.34.

(b) Solution

1. The remote machine has no sub address function. Resend the fax again without using the sub address.

5.4.15 Transmission error code (00EX)

(1) Error code: 00E0

(a) Definition

At phase D, transmitting units out PPS_NULL 3 times consecutively but receive not answer.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Boost the TX level of sender's machine.
3. Boost the machine TX level. <*1>
4. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(2) Error code: 00E1

(a) Definition

Received incorrect response after sending PPS_NULL.

(b) Solution

1. Resend the FAX again.
2. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(3) Error code: 00E2

(a) Definition

Can not receive any response in RR response procedure after sending PPS_NULL.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Boost the TX level of sender's machine.
3. Boost the machine TX level. <*1>
4. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(4) Error code: 00E4

(a) Definition

At phase D, transmitting units out PPS_MPS 3 times consecutively but receive no answer.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Boost the TX level of sender's machine.
3. Boost the machine TX level. <*1>
4. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(5) Error code: 00E5

(a) Definition

Received incorrect response after sending PPS_MPS.

(b) Solution

1. Resend the FAX again.
2. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(6) Error code: 00E6

(a) Definition

Can not receive any response in RR response procedure after sending PPS_MPS.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Boost the TX level of sender's machine.
3. Boost the machine TX level. <*1>
4. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(7) Error code: 00E7

(a) Definition

Received DCN after sending PPS_MPS.

(b) Solution

1. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(8) Error code: 00E8

(a) Definition

At phase D, transmitting units out PPS_EOP 3 times consecutively but receive no answer.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Boost the TX level of sender's machine.
3. Boost the machine TX level. <*1>
4. Set SOFT SW21 [5] to “1” (T4 timer = 4.5 sec.)
5. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(9) Error code: 00E9

(a) Definition

Receive PIN signal after sent last page data.

(b) Solution

1. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(10) Error code: 00EA

(a) Definition

Can not receive any response in RR response procedure after sending PPS_EOP.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Boost the TX level of sender's machine.
3. Boost the machine TX level. <*1>
4. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(11) Error code: 00EB

(a) Definition

At phase D, transmitting units out PPS_EOM 3 times consecutively but receive no answer.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Change the machine setting to ECM OFF, then resend again.
3. Boost the TX level of sender's machine.
4. Boost the machine TX level. <*1>
5. Set SOFT SW21 [5] to “1” (T4 timer = 4.5 sec.)

6. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(12) Error code: 00EC

(a) Definition

Received incorrect response after sending PPS_EOM.

(b) Solution

1. Change the machine setting to ECM OFF, then resend again.
2. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(13) Error code: 00ED

(a) Definition

Can not receive any response in RR response procedure after sent out PPS_EOM.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Change the machine setting to ECM OFF, then resend again.
3. Boost the TX level of sender's machine.
4. Boost the machine TX level. <*1>
5. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(14) Error code: 00EE

(a) Definition

At phase D, transmitting units out EOR_NULL 3 times consecutively but receive no answer.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Change the machine setting to ECM OFF, then resend again.
3. Boost the TX level of sender's machine.
4. Boost the machine TX level. <*1>
5. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(15) Error code: 00EF

(a) Definition

Received incorrect response after sending EOR_NULL.

(b) Solution

1. Change the machine setting to ECM OFF, then resend again.
2. Print out the protocol report, and provide it to service center, ask for analyzing the information.

5.4.16 Transmission error code (00FX)

(1) Error code: 00F0

(a) Definition

Can not receive any response procedure after sending EOR_NULL.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Change the machine setting to ECM OFF, then resend again.
3. Boost the TX level of sender's machine.
4. Boost the machine TX level. <*1>
5. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(2) Error code: 00F1

(a) Definition

At phase D, transmitting units out EOR_MPS 3 times consecutively but receive no answer.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Change the machine setting to ECM OFF, then resend again.
3. Boost the TX level of sender's machine.
4. Boost the machine TX level. <*1>
5. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(3) Error code: 00F2

(a) Definition

Received incorrect response after sending EOR_MPS.

(b) Solution

1. Resend the FAX again.
2. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(4) Error code: 00F3

(a) Definition

Received ERR signal after sending EOR_MPS.

(b) Solution

1. Change the machine setting to ECM OFF, then resend again.
2. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(5) Error code: 00F4

(a) Definition

Can not receive any response in RR response procedure after sending EOR_MPS.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Change the machine setting to ECM OFF, then resend again.
3. Boost the TX level of sender's machine.
4. Boost the machine TX level. <*1>
5. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(6) Error code: 00F5

(a) Definition

At phase D, transmitting units out EOR_EOP 3 times consecutively but receive no answer.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Change the machine setting to ECM OFF, then resend again.
3. Boost the TX level of sender's machine.
4. Boost the machine TX level. <*1>
5. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(7) Error code: 00F6

(a) Definition

Received incorrect response after sending EOR_EOP.

(b) Solution

1. Change the machine setting to ECM OFF, then resend again.
2. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(8) Error code: 00F7

(a) Definition

After received ERR, our side can not received response after sending EOR_EOP command.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Change the machine setting to ECM OFF, then resend again.
3. Boost the TX level of sender's machine.
4. Boost the machine TX level. <*1>
5. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(9) Error code: 00F8

(a) Definition

At phase D, transmitting units out EOR_EOM 3 times consecutively but receive no answer.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.

2. Change the machine setting to ECM OFF, then resend again.
3. Boost the TX level of sender's machine.
4. Boost the machine TX level. <*1>
5. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(10) Error code: 00F9

(a) Definition

Received incorrect response after sending EOR_EOM.

(b) Solution

1. Change the machine setting to ECM OFF, then resend again.
2. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(11) Error code: 00FA

(a) Definition

Received ERR signal after sending EOR_EOM.

(b) Solution

1. Change the machine setting to ECM OFF, then resend again.
2. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(12) Error code: 00FB

(a) Definition

Can not receive any response in RR response procedure after sending EOR_EOM.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Change the machine setting to ECM OFF, then resend again.
3. Boost the TX level of sender's machine.
4. Boost the machine TX level. <*1>
5. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(13) Error code: 00FC

(a) Definition

Can not receive any response after sending CTC.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Change the machine setting to ECM OFF, then resend again.
3. Boost the TX level of sender's machine.
4. Boost the machine TX level. <*1>
5. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(14) Error code: 00FD

(a) Definition

Can not communication speed down to lower speed in ECM mode.

(b) Solution

1. Check the line condition whether is too noisy, if necessary, please replace a new telephone line or contact your telecom service provider.
2. Change the machine setting to ECM OFF, then resend again.
3. Boost the TX level of sender's machine.
4. Boost the machine TX level. <*1>
5. Adjust the SOFT SW12 [6-7] to “11”, while receiving 4 PPR, the speed will down.
6. Print out the protocol report, and provide it to service center, ask for analyzing the information.

(15) Error code: 00FE

(a) Definition

Memory full for transmission.

(b) Solution

1. Split the document, and send them by several different times.
2. Print out the receiving data which was stored in the FAX memory or delete the unnecessary data.
3. Reboot the machine.
4. Execute MEMORY CLEAR.

(16) Error code: 00FF

(a) Definition

Redial all fail.

(b) Solution

1. Check whether the dialing number is correct or not.
2. Check whether the telephone line is connect correctly or not.
3. Faxing by Manual TX.
4. Check the machine setting whether is according with the switchboard.
5. Adjust the SOFT SW07 [8] to “0”, disable the dial tone detect before dial.
6. Adjust the SOFT SW21 [1-2] to “11”, increase T1 time.
7. Adjust the SOFT SW55 [6-8] to “000” or “010” or “100” or “110”, change to accord with the switchboard environment.

5.5 FAX can sent but not receive

- Review the following information to determine why faxes are not being received.

5.5.1 Troubleshooting procedure

Relevant electrical parts	
FAX board (FAXB)	

Step	Check item	Result	Action
1	Turn OFF and ON the power switch.	NO	Go to step 2.
2	Is the telephone line connect correctly?	YES	Go to step 3.
		NO	Connect it correctly.
3	Is there a paper jam?	YES	Clear the paper jam.
		NO	Go to step 4.
4	Is the machine set to receive faxes manually?	YES	Set the machine to automatic reception.
		NO	Go to step 5.
5	Is it able to detect the local ring?	YES	Go to step 6.
		NO	Enter [SERVICE MODE] -> [SOFT SWITCH]. Change the SW# 50 bit (1-3) to (0,0,0).
6	Check the fax board for correct installation.	YES	Go to step 7.
		NO	Reinstall the fax board.
7	Does the error still occur when faxing?	YES	Change the fax board.
		NO	Finish the action.

5.6 FAX line says talking

- Review the following information to determine why fax line says talking.

5.6.1 Troubleshooting procedure

Relevant electrical parts	
FAX board (FAXB)	

Step	Check item	Result	Action
1	Turn OFF and ON the power switch.	NO	Go to step 2.
2	Is the telephone line connect correctly?	YES	Go to step 3.
		NO	Connect it correctly.
3	Is the handset lifted?	YES	Place the handset to on hook.
		NO	Go to step 4.
4	Check the fax board for correct installation.	YES	Go to step 5.
		NO	Reinstall the fax board.
5	Does the error still occur when faxing?	YES	Change the fax board.
		NO	Finish the action.

5.7 Pick up the phone, but the machine does not go into Off-Hook state

- Review the following information to determine why machine can not go into Off-Hook state.

5.7.1 Troubleshooting procedure

Relevant electrical parts	
FAX board (FAXB)	

Step	Check item	Result	Action
1	Turn OFF and ON the power switch.	NO	Go to step 2.
2	Is the handset broken?	YES	Change the handset on the hook.

Step	Check item	Result	Action
		NO	Go to step 3.
3	Is the input current from PBX not enough?	YES	Increase the input current from PBX.
		NO	Go to step 4.
4	Check the Soft SW55 [6-8] according with the switchboard environment.	YES	Go to step 5.
		NO	Adjust Soft SW55 [6-8] = “000” or “001” or “010” or “101”
5	Check the fax board for correct installation.	YES	Go to step 6.
		NO	Reinstall the fax board.
6	Does the error still occur when faxing?	YES	Change the fax board.
		NO	Finish the action..

5.8 In VoIP system environment, the machine can not fax properly

- Review the following information to determine why machine can not fax properly in VoIP system environment.

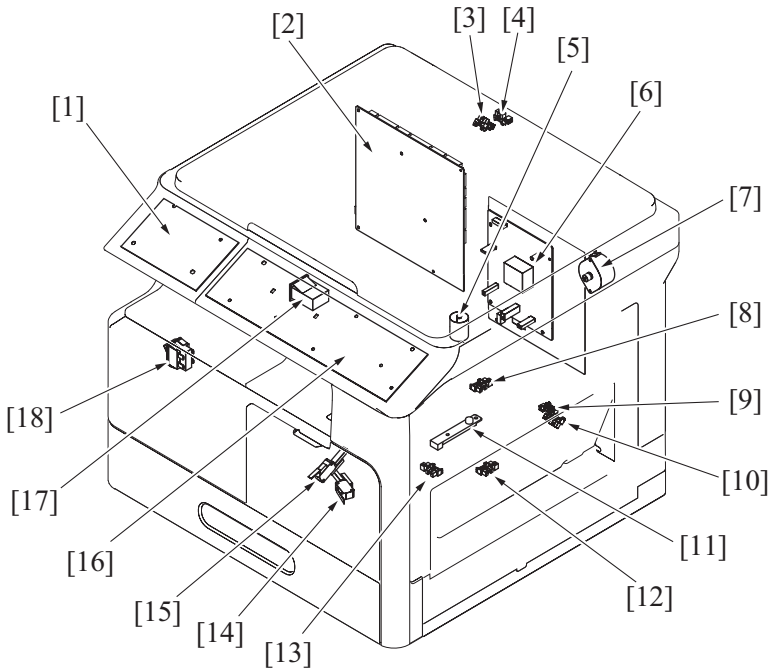
5.8.1 Troubleshooting procedure

Step	Check item	Result	Action
1	Check the setting of Soft SW21 [5] = “1”	YES	Finish the action.
		NO	Adjust Soft SW21 [5] = “1”

L PARTS/CONNECTOR LAYOUT DRAWING

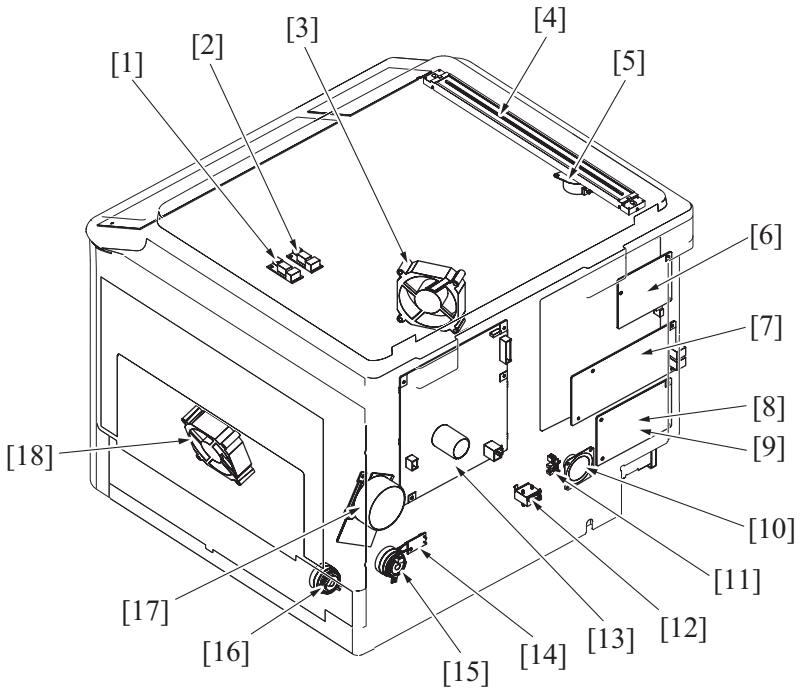
1. PARTS LAYOUT DRAWING

1.1 Main body (bizhub 235/215/195)



[1]*	FAX panel board	[2]	MFP board (MFPB)
[3]	Original cover sensor (PS8)	[4]	Angle sensor (PS7)
[5]	Toner supply motor (M2)	[6]	High voltage unit (HV1)
[7]	Switchback motor (M4)	[8]	Exit sensor (PS3)
[9]	Tray set sensor (PS4)	[10]	Paper size sensor (PS5)
[11]	TCR sensor board (TCRSB)	[12]	Registration sensor (PS1)
[13]	Tray1 empty sensor (PS2)	[14]	Right door switch (S2)
[15]	Front door switch (S3)	[16]	Panel board
[17]	Mechanical counter (MCT)	[18]	Power switch (S1)

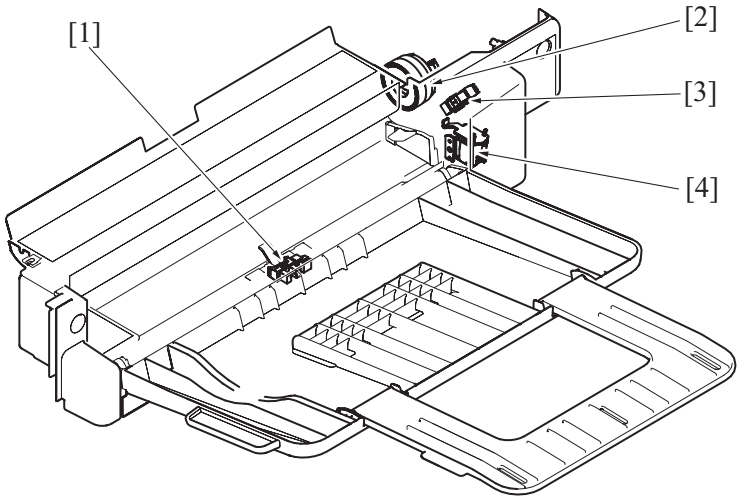
- *: Option



[1]*	Original size sensor/2 (PS10)	[2]	Original size sensor/1 (PS9)
[3]*	Cooling fan motor (FM2)	[4]	CIS module (CIS)
[5]	Scanner motor (M3)	[6]	BB module board (BBMB)
[7]*	FAX board (FAXB)	[8]*	NIC board (NICB)
[9]*	PCL/NIC board (PNICB)	[10]*	Speaker (SP1)
[11]	Inch/metric sensor (PS6)	[12]	Paper size detect switch (S4)
[13]	DC power supply (DCPU)	[14]	Temperature/humidity sensor (TEM/HUM)
[15]	Tray1 paper feed clutch (CL2)	[16]	Registration clutch (CL1)
[17]	Main motor (M1)	[18]	Fusing cooling fan motor (FM1)

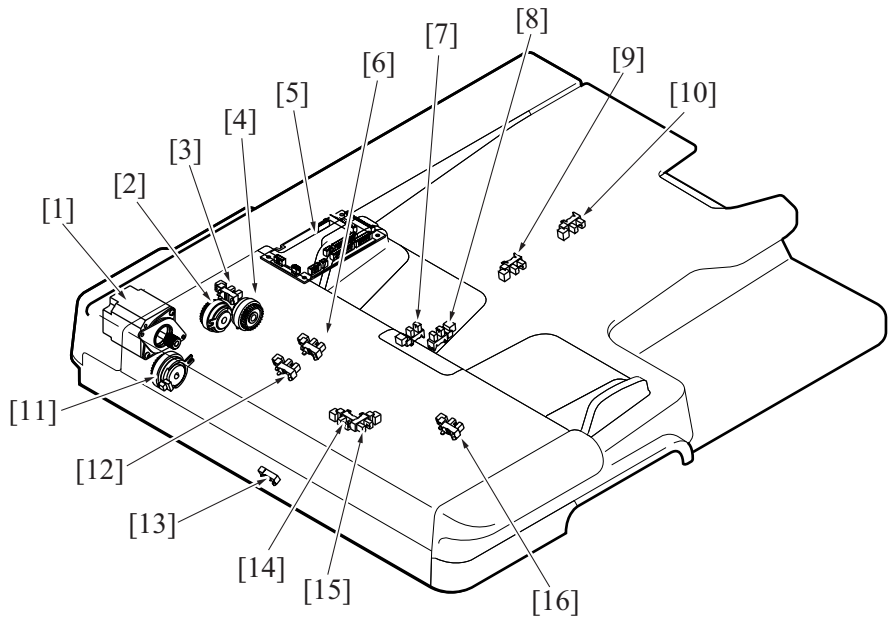
- *: Option

1.2 Multi bypass tray (MB-505)



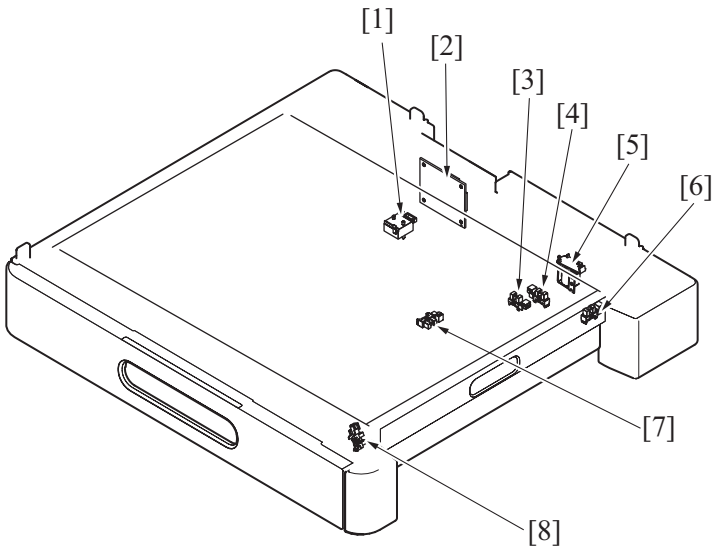
[1]	Bypass paper empty sensor (PS3)	[2]	Bypass paper feed clutch (CL3)
[3]	Bypass lift sensor (PS4)	[4]	Bypass pick-up solenoid (SD1)

1.3 Document feeder (DF-625)



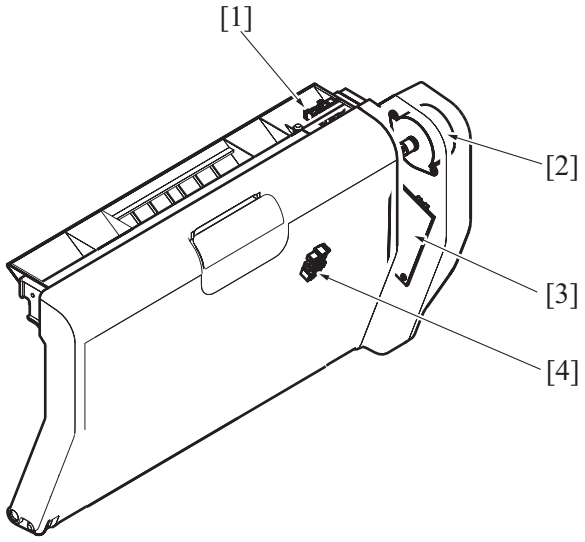
[1]	DF motor (M1)	[2]	Document feed clutch (CL1)
[3]	Upper door sensor (PS11)	[4]	Switchback clutch (CL3)
[5]	DF control board (DFCB)	[6]	Document set sensor (PS1)
[7]	Document CD size sensor/1 (PS3)	[8]	Document CD size sensor/2 (PS4)
[9]	Document FD size sensor/1 (PS5)	[10]	Document FD size sensor/2 (PS6)
[11]	Document registration clutch (CL2)	[12]	Document feed sensor (PS7)
[13]	Document transport sensor (PS9)	[14]	Document registration sensor (PS8)
[15]	Document exit sensor (PS10)	[16]	Document size sensor (PS2)

1.4 Paper feeder Unit (PF-507)



[1]	Paper size detect switch (S1)	[2]	PF drive board (PFDB)
[3]	Paper size sensor (PS5)	[4]	Tray set sensor (PS3)
[5]	Paper feed solenoid (SD1)	[6]	Door sensor (PS4)
[7]	Paper empty sensor (PS1)	[8]	Paper feed sensor (PS2)

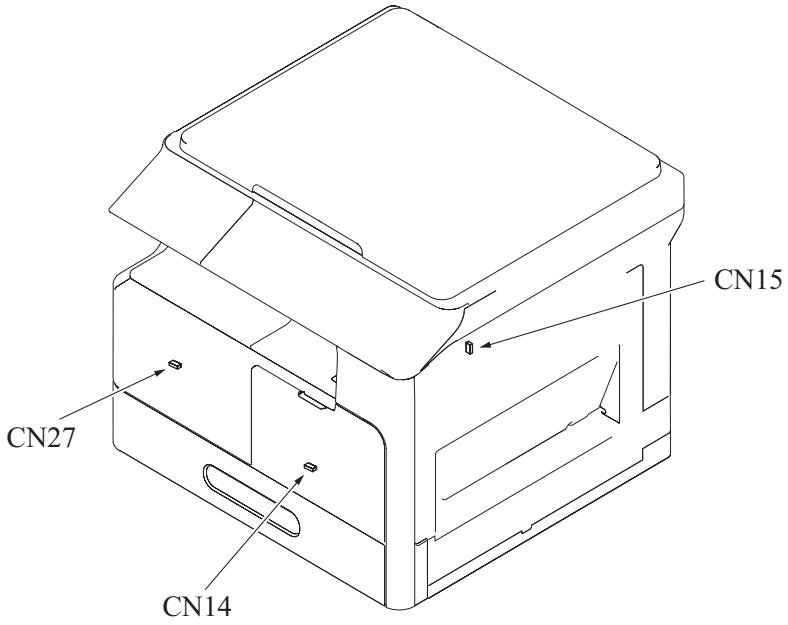
1.5 Duplex unit (AD-509)

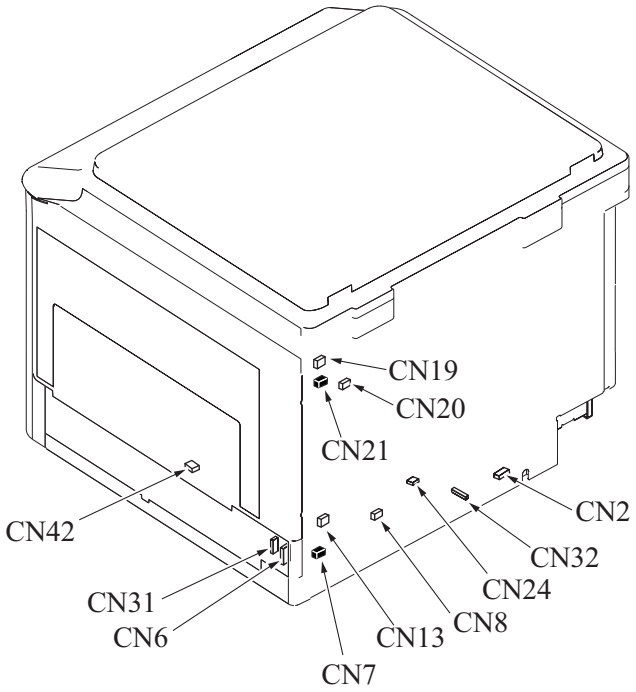


[1]	Door sensor (PS1)	[2]	AD motor (M1)
[3]	AD drive board (ADDB)	[4]	Transport sensor (PS2)

2. CONNECTOR LAYOUT DRAWING

2.1 Main body (bizhub 235/215/195)

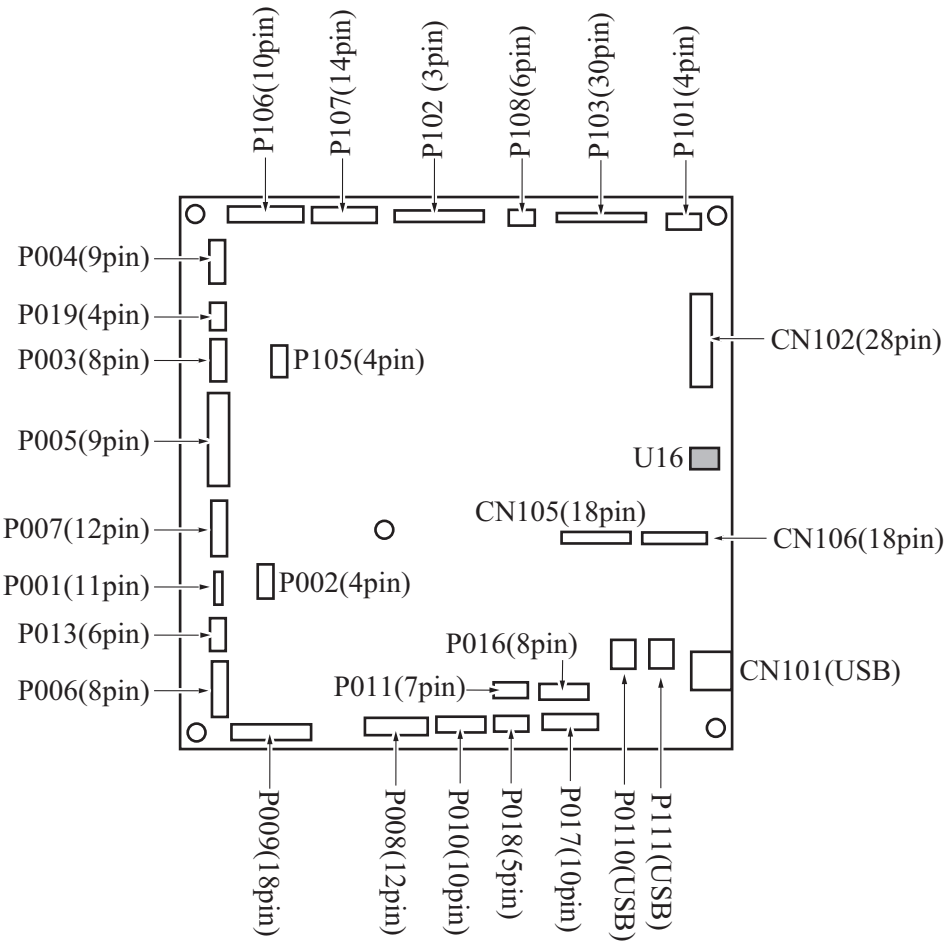




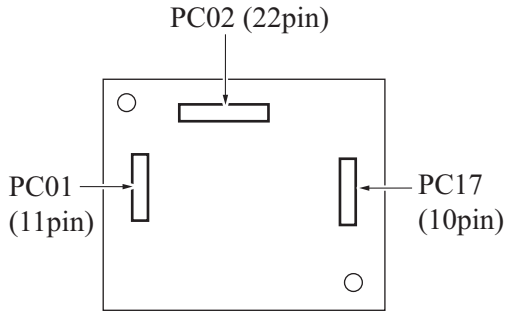
Connector No.	Number of Pin	Wiring diagram Location	Connector No.	Number of Pin	Wiring diagram Location
CN2	2	B-2	CN6	12	G-5
CN7	2	E-5	CN8	2	E-5
CN13	3	E-16	CN14	4	C-15
CN15	2	D-15	CN19	3	A-15
CN20	2	B-15	CN21	2	B-15
CN24	8	E-5	CN27	3	E-15
CN31	8	F-5	CN32	11	F-15
CN42	3	E-15	-	-	-

2.2 Control board

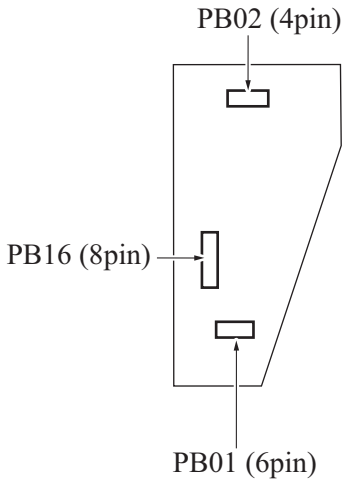
2.2.1 MFP board (MFPB)



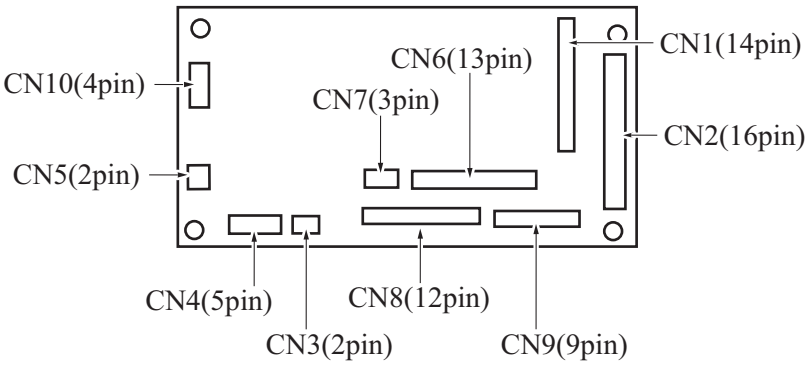
2.2.2 PF drive board (PFDB)



2.2.3 AD drive board (ADDB)



2.2.4 DF control board (DFDB)

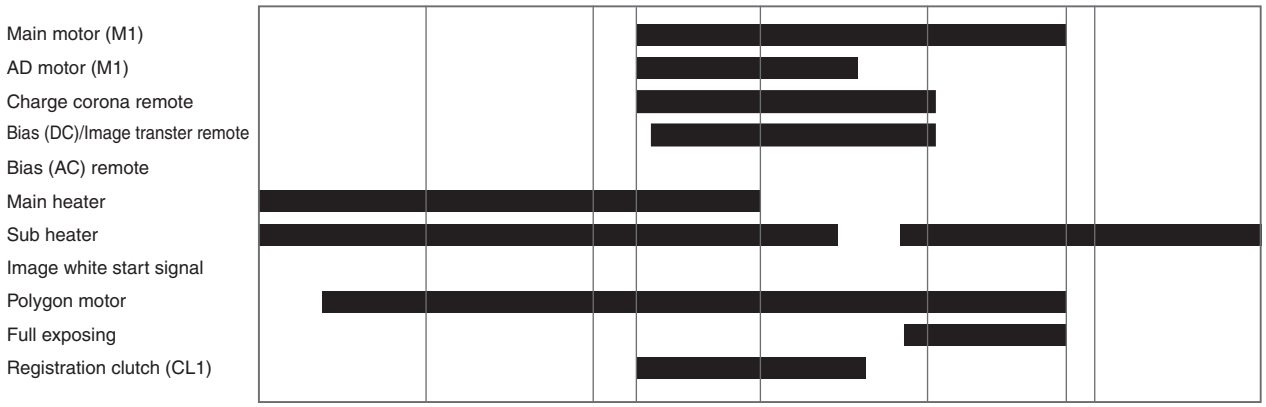


M TIMING CHART

1. bizhub 235/215/195

1.1 Timing chart when the power switch is turned ON

1.1.1 Timing chart

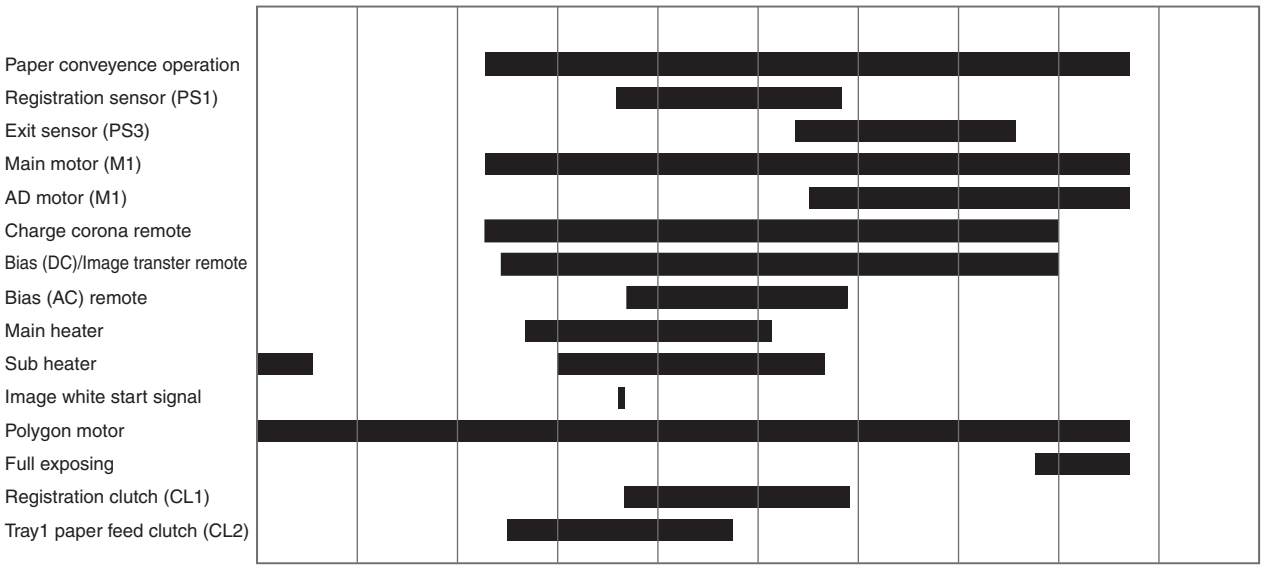


1.2 Timing chart when the Start key is pressed

1.2.1 Operating conditions

Paper size	A4 or 8 $^{1}/_{2}$ x 11
Paper source	Tray1

1.2.2 Timing chart



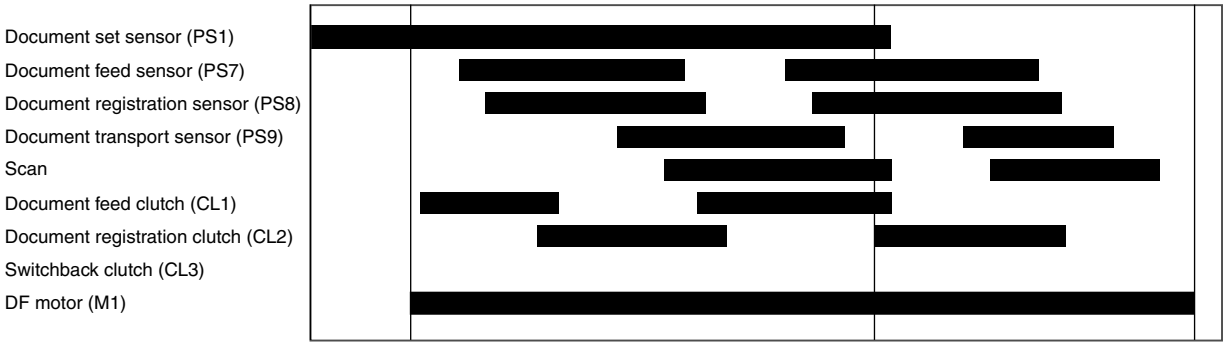
2. DF-625

2.1 Timing chart when printing with 1-sided mode

2.1.1 Operating conditions

Paper size	A4 or 8 $^1/_2$ x 11
Zoom ratio	Full size
Sheet of original	2 originals

2.1.2 Timing chart

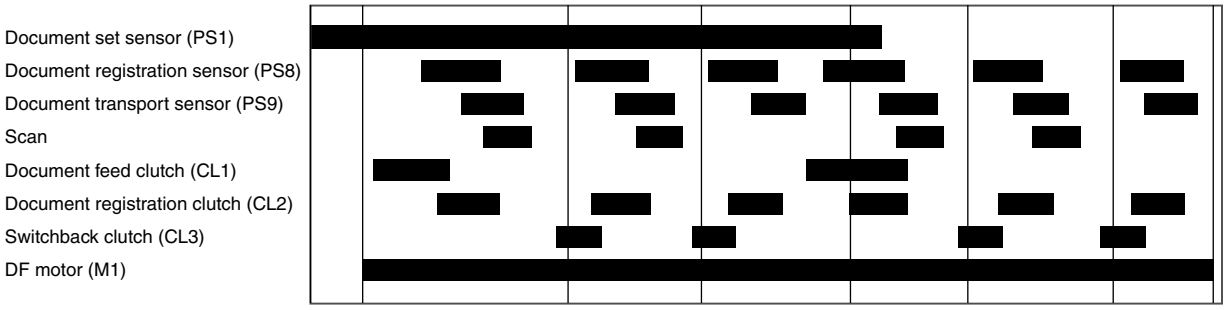


2.2 Timing chart when printing with 2-sided mode

2.2.1 Operating conditions

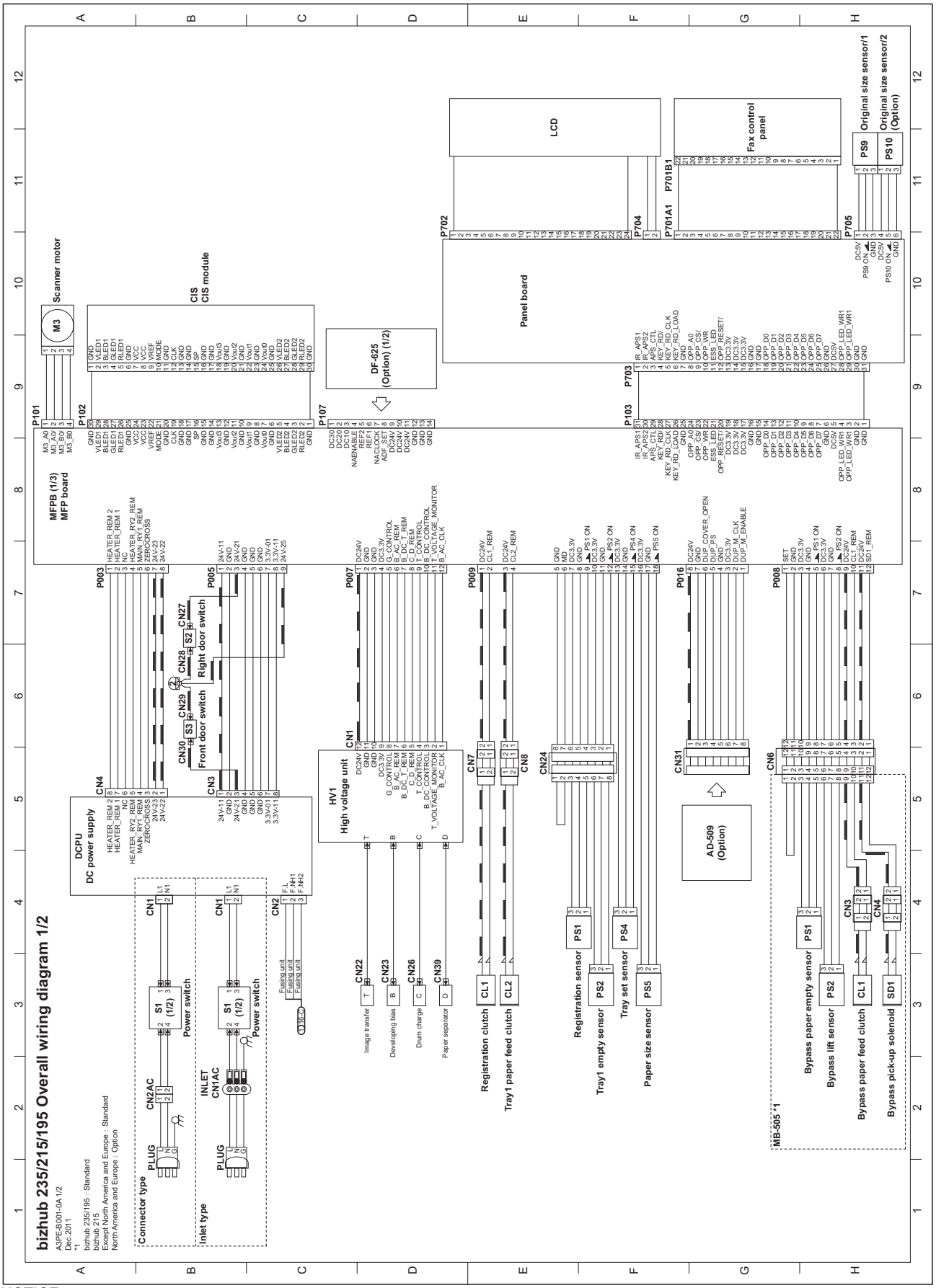
Paper size	A4 or 8 $^1/_2$ x 11
Zoom ratio	Full size
Sheet of original	2 originals

2.2.2 Timing chart



N WIRING DIAGRAM

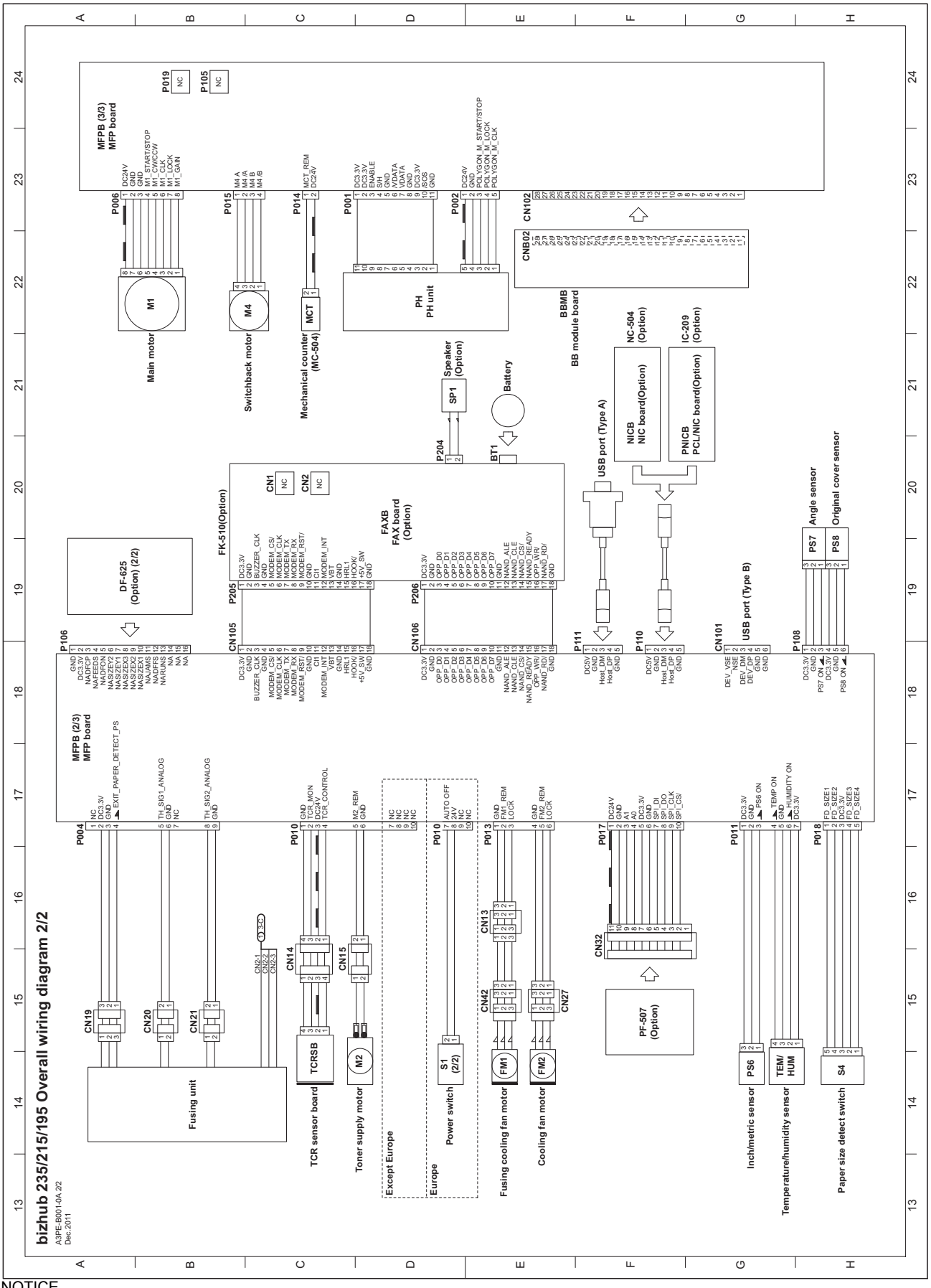
1. bizhub 235/215/195 (1/2)



NOTICE

- bizhub 235/215/195 Overall wiring diagram (a3pem0nc901da.pdf 122 kb)

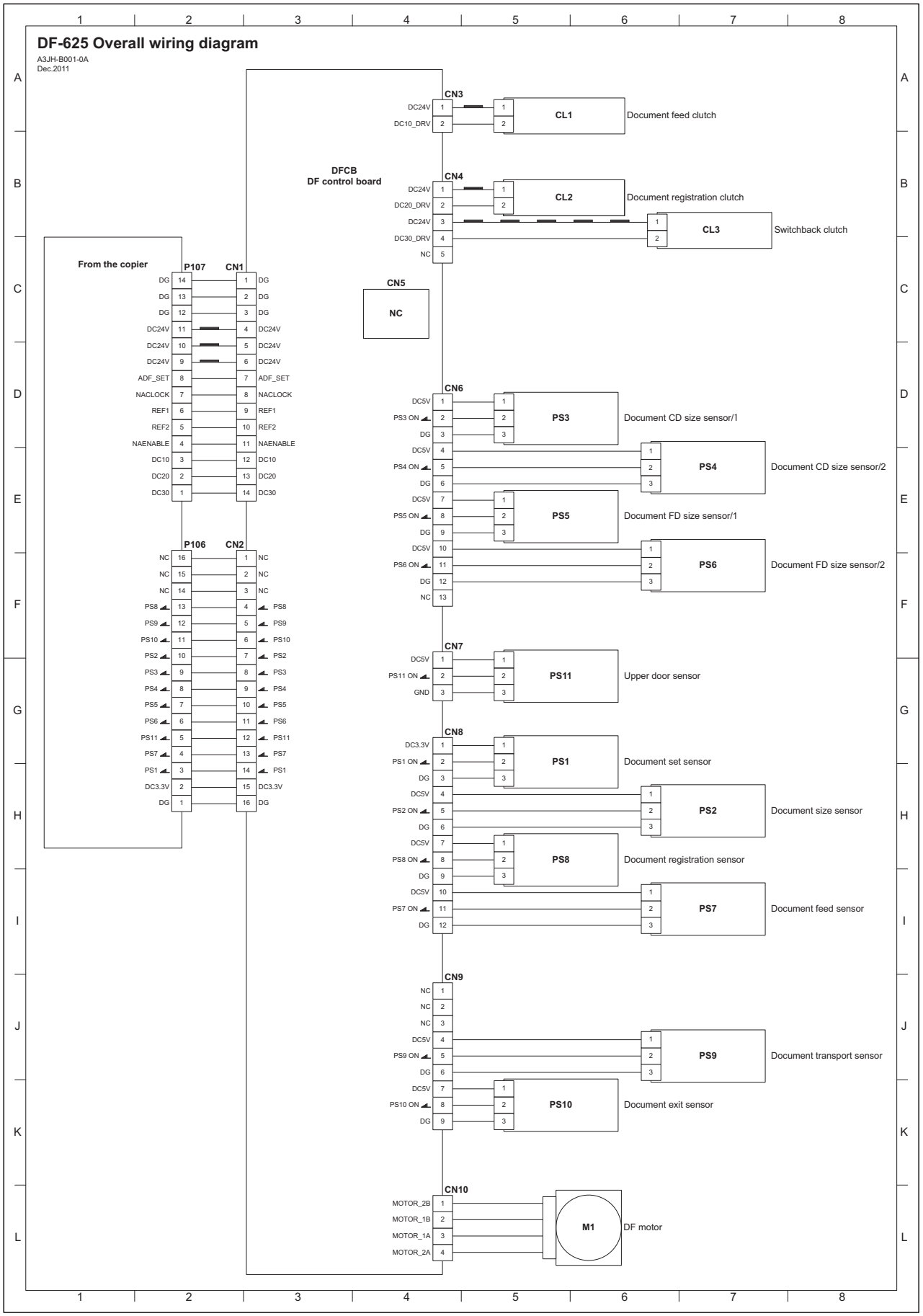
2. bizhub 235/215/195 (2/2)



NOTICE

- bizhub 235/215/195 Overall wiring diagram (a3pem0nc902da.pdf 93 kb)

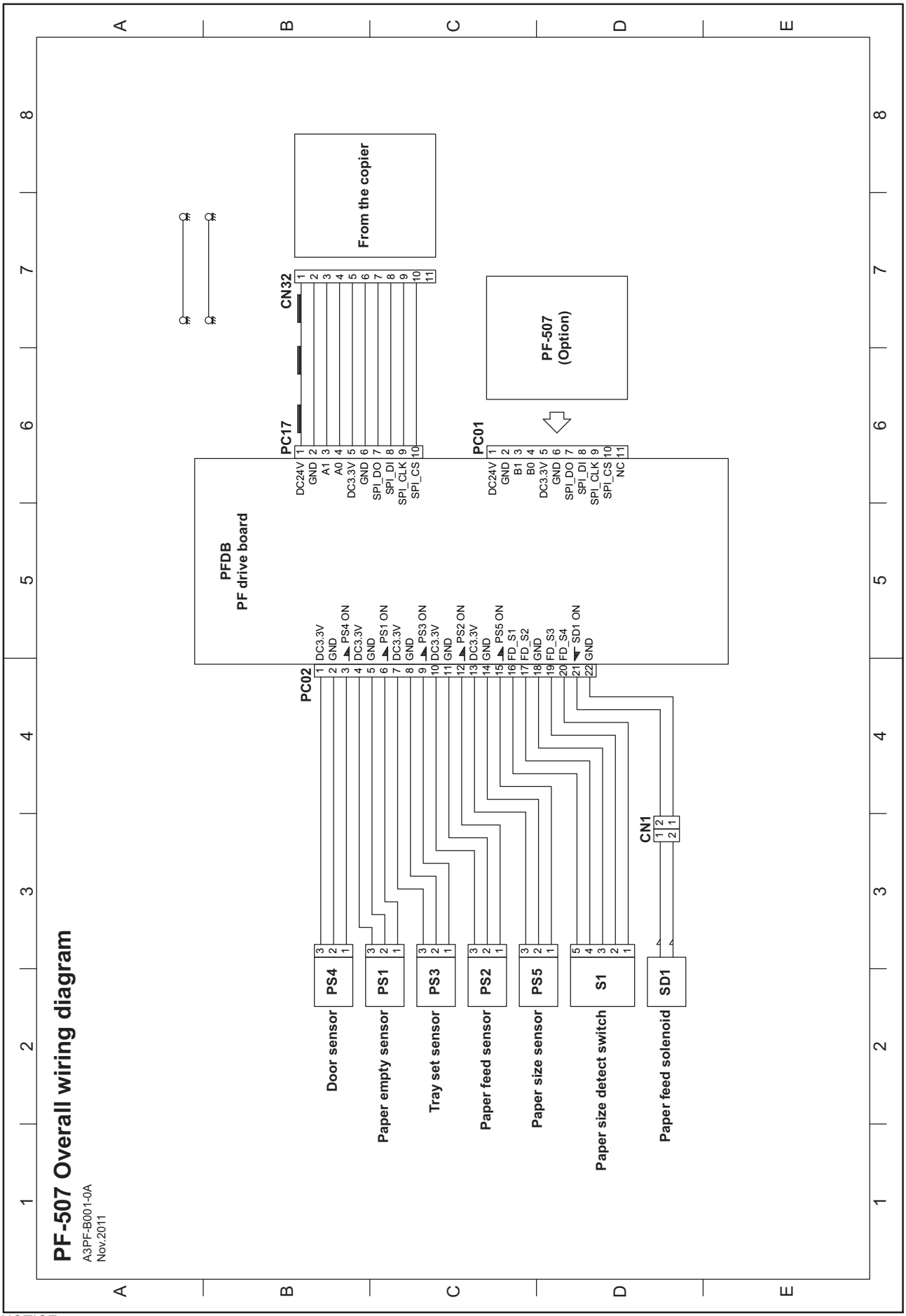
3. DF-625



NOTICE

- DF-625 Overall wiring diagram (hm0nc901da.pdf 129 kb)

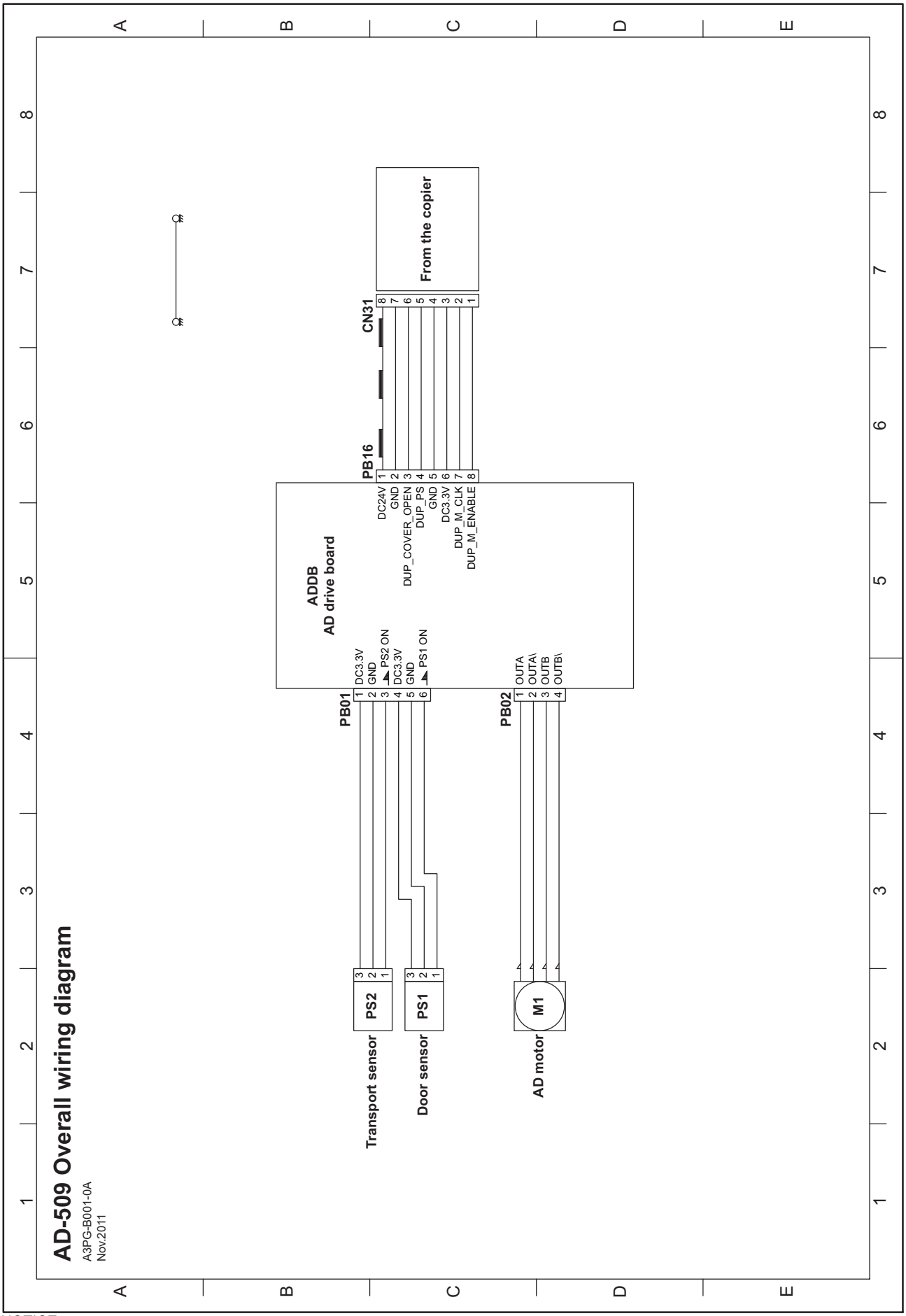
4. PF-507



NOTICE

- PF-507 Overall wiring diagram (bfm0nc801da.pdf 68 kb)

5. AD-509



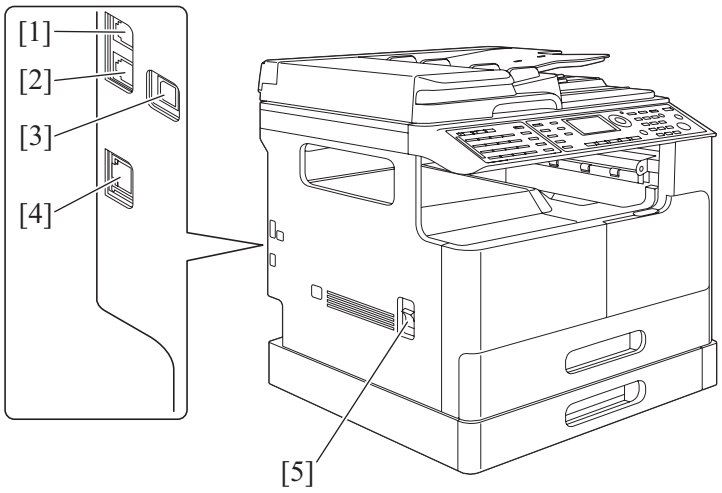
NOTICE

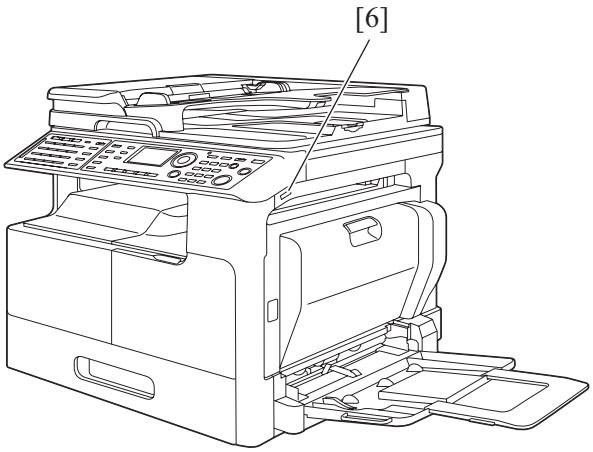
- AD-509 Overall wiring diagram (bgm0nc801da.pdf 64 kb)

O THEORY OF OPERATION bizhub 235/215/195

1. INTERFACE SECTION

1.1 Configuration

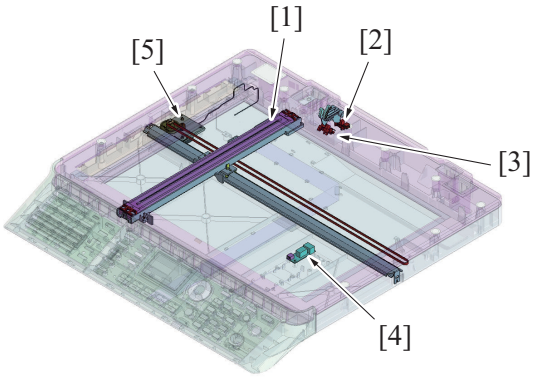




[1]	Connector for connection with external telephone (TEL PORT): Option	[2]	TEL line connector (LINE PORT): Option
[3]	Network port (10Base-T/100Base-TX): Option	[4]	USB Port (Type B) USB2.0/1.1
[5]	Power switch	[6]	USB Port (Type A) USB2.0/1.1 : Only bizhub 235, bizhub 215

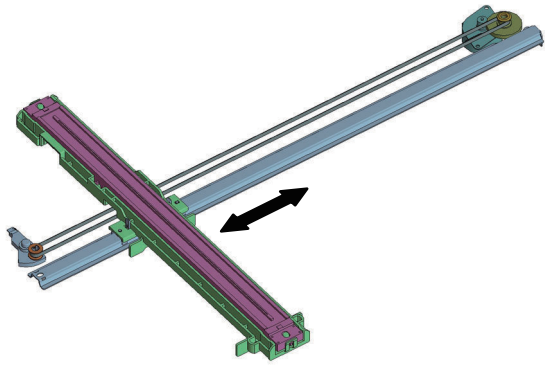
2. SCANNER SECTION

2.1 Configuration



[1]	CIS module (CIS)	[2]	Angle sensor (PS7)
[3]	Original cover sensor (PS8)	[4]	Original size sensor/1 (PS9)
[5]	Scanner motor (M3)	-	

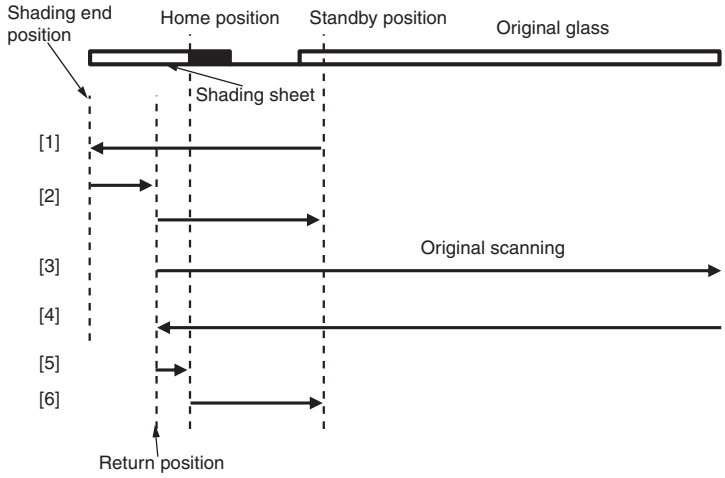
2.2 Drive



2.3 Operation

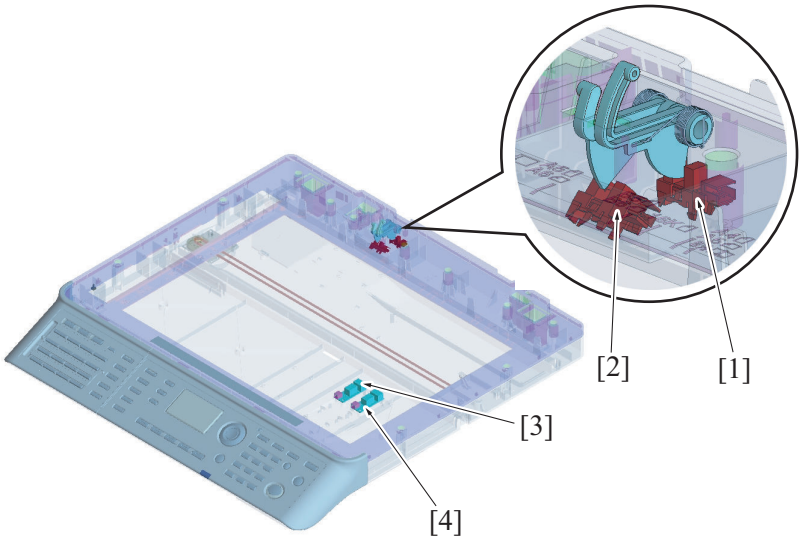
2.3.1 Control when the Start key is pressed

1. If the start key is pressed, the scanner starts a shading sequence from the standby position to shading end position.
   If any key but start key is pressed, the scanner starts a pre-shading sequence from the standby position to shading end position.
2. After the pre-shading sequence, the scanner is stopped at the return position.
   After the lapse of 30 seconds thereafter, the scanner moves to the standby position.
3. If the start key is pressed in step 1 above or during a period of 30 seconds after the pre-shading sequence, the scanner starts a scan motion immediately.
4. After the scan motion has been finished, the scanner makes a return motion to move back to the return position.
5. After the completion of the return motion, the scanner starts a home position detection sequence.
6. After the home position is detected, the scanner moves to, and stops at, the standby position.



2.3.2 Original size detection mechanism

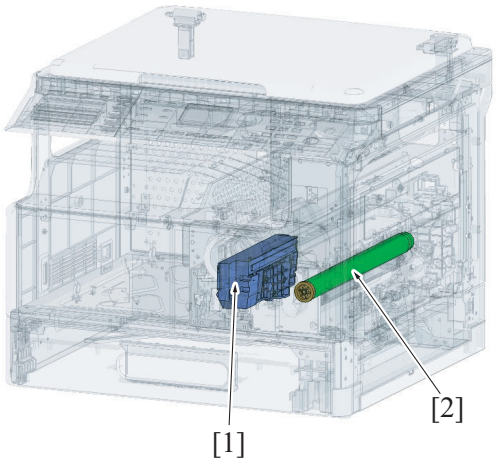
- Opening and closing of the original cover is detected by the original cover sensor.
- The angle sensor detects the angle which the original cover forms with the original glass at the time of opening/closing the original cover. At the angle of about 15 degrees or less, the angle sensor is activated.
- When the angle is 15 degrees or less (sensor activated), the original size is detected. When the angle is 15 degrees or more, the original size is determined when the Start key is pressed.
- To detect the original size, the original length is detected by the reflective type original size sensor and the original width is detected by CIS.
- The detection pattern of original size can be changed by CIS APS Size in service mode. (Refer to I.4.3.46 CIS APS SIZE)
- For information on the original size detection in the optional reverse automatic document feeder (DF-625), refer to PA.4.3 Original size detection operation



[1]	Original cover sensor (PS8)	[2]	Angle sensor (PS7)
[3]	Original size sensor/1 (PS9)	[4]	Original size sensor/2 (PS10): Option

3. WRITING SECTION

3.1 Configuration

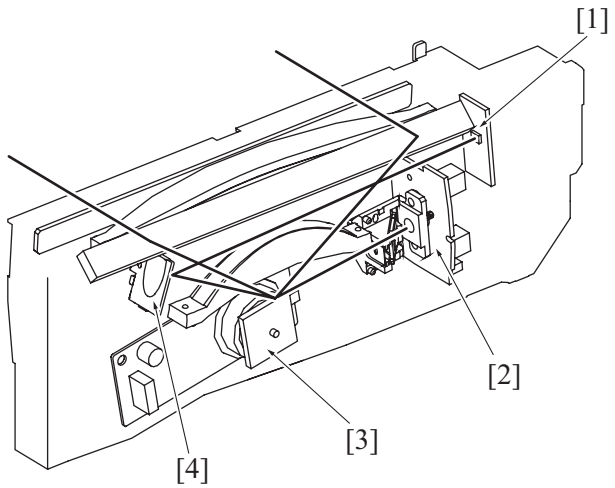


[1]	PH unit	[2]	Drum

3.2 Operation

3.2.1 Overview

- When a laser beam strikes the polygon mirror, light reflected off the Polygon Mirror is directed at the drum by way of the lens and return mirror.
- The polygon mirror has four faces, being turned at high speeds by the polygon motor.
- The sos mirror and sos sensor keep constant the timing, at which emission of a laser beam is started for each main scanning line.



[1]	SOS sensor	[2]	LD board
[3]	Polygon motor	[4]	SOS mirror

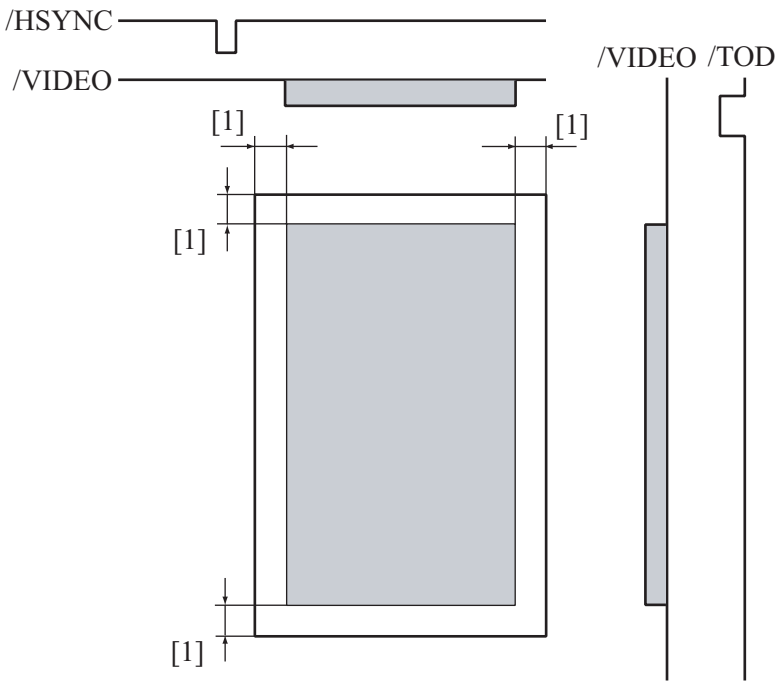
3.2.2 Laser emission area

(1) Main scan direction

- The print start position in the main scan direction is determined by the main scan print start signal (HSYNC) that is output from the printer control board and the width of the media.
- The laser emission area is determined by the media size. However, there is a 4.0 mm wide void area on both the both edges of the media.

(2) Sub scan direction

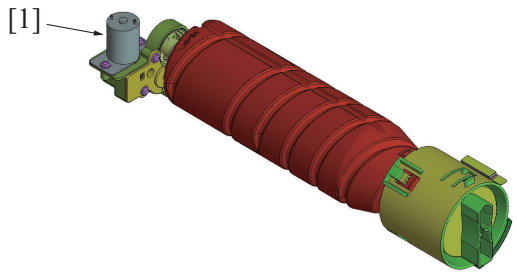
- The print start position in the sub scan direction is determined by the sub scan print start signal (TOD) that is output from the printer control board and the length of the media.
- The laser emission area is determined by the media size. However, there is a 4.0 mm wide void area on both the leading and trailing edges of the media.



[1]	Void width: 4.0 mm

4. TONER SUPPLY SECTION

4.1 Configuration



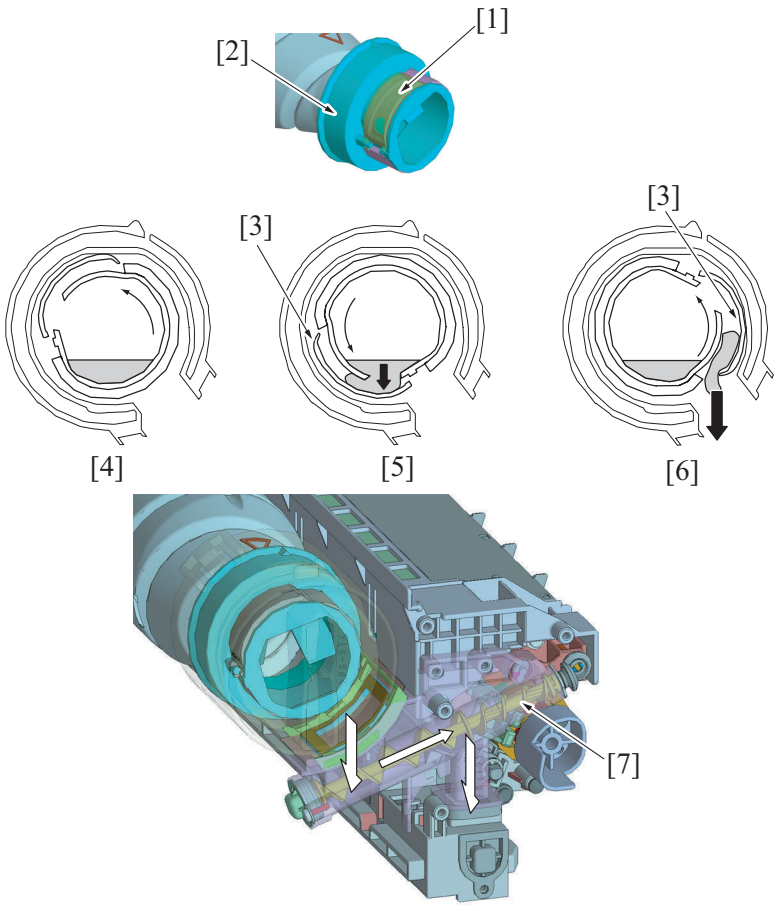
[1]	Toner supply motor (M2)

4.2 Operation

4.2.1 Toner Replenishing Mechanism

- Toner is supplied from the toner bottle to the developer mixing chamber.

1. The toner supply motor (M2) turns the coupling, which turns the toner bottle.
2. To regulate the amount of toner supplied from the toner bottle, there is a metering chamber provided in the outer race of the coupling.
3. When the toner bottle turns, toner in the metering chamber drops.
4. When the toner bottle is turned again, the supply door is opened by the weight of toner in the metering chamber and the toner drops.
5. Toner from the metering chamber is conveyed by the toner conveying screw into the developer mixing chamber.
6. The toner conveying screw is turned by the main motor (M1).



[1]	Metering Chamber	[2]	Coupling
[3]	Supply door	[4]	Toner bottle is rotated.
[5]	Toner drops into the metering chamber.	[6]	Toner is supplied.
[7]	Toner Conveying Screw	-	

4.2.2 Toner Replenishing Control

- The amount of toner consumed for the image (number of dots) is calculated for each print during printing. The calculated value is compared with the T/C ratio read by the TCR sensor. The main body thereby determines whether to replenish toner or not.
- If toner is to be replenished, the toner bottle is rotated.

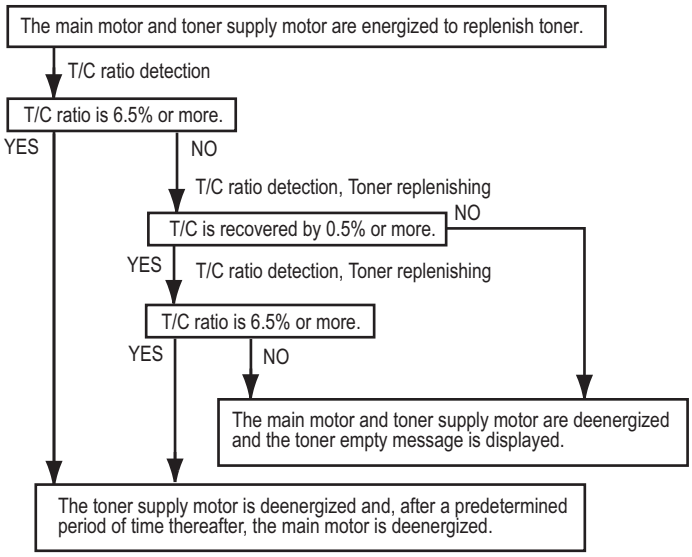
- The T/C ratio is calculated after the replenishing sequence. If the recalculated T/C ratio is equal to, or more than, a predetermined value in %, the replenishing sequence is terminated. If the ratio is less than the predetermined value, toner replenishing sequence is carried out again.

4.2.3 T/C Recovery Mode

- If the T/C ratio is low, the main body forcibly prohibits the initiation of a new print cycle and recovers the required T/C ratio level.
- Two patterns of control are performed according to the timing at which the T/C recovery sequence is performed.

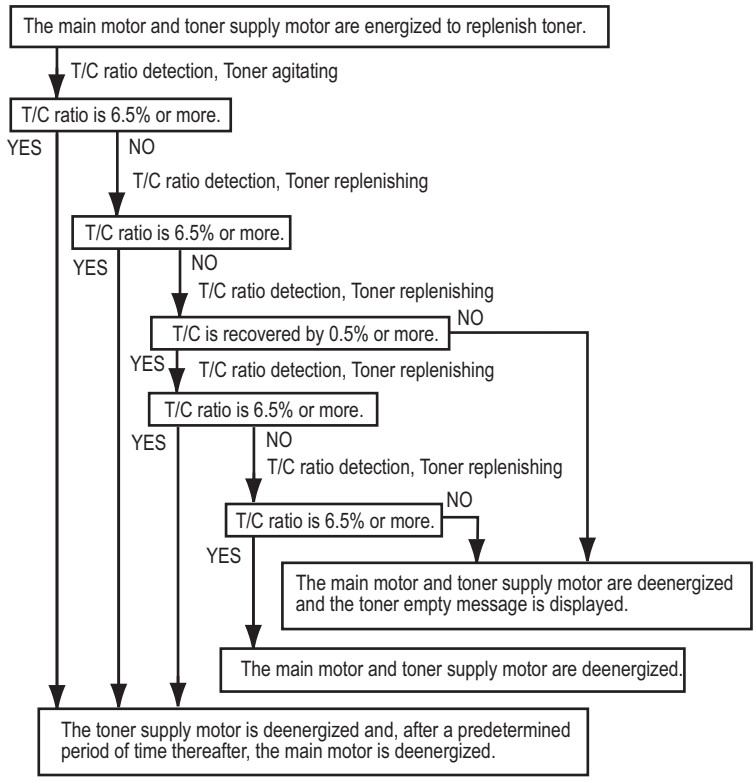
(1) TC recovery sequence A

- To use when the T/C ratio level in the developing unit that is detected by TCR senor become lower than the predetermined value.
- As soon as a toner empty condition is detected, the print cycle is temporarily interrupted and toner replenishing sequence is carried out.



(2) TC recovery sequence B

- This sequence is executed when:
  The front cover or right door is opened and closed in a toner empty condition.
  Power is turned OFF and ON in a toner empty condition.
  A Toner Supply command is issued.



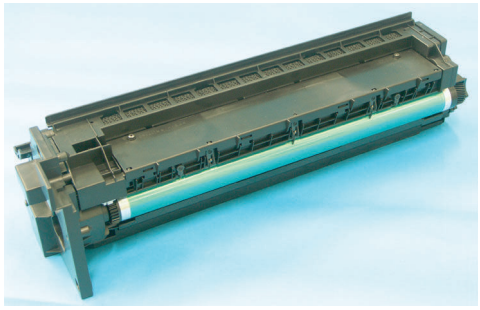
4.2.4 Detection of toner empty condition

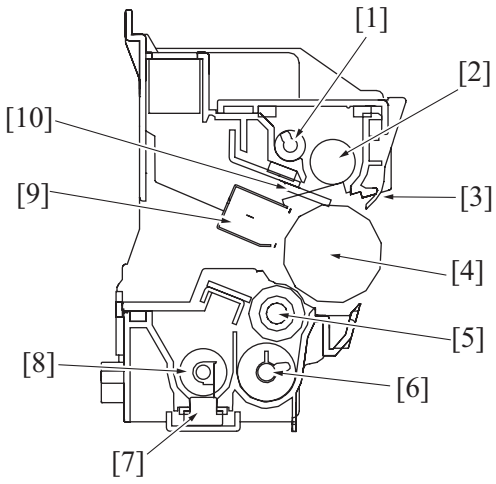
- The main body detects a toner empty condition based on the T/C ratio in the developing unit.
- After a toner empty condition is detected, the main body enters the T/C recovery mode to replenish toner.
- If the normal T/C ratio is not recovered even after the T/C recovery sequence is executed, a corresponding message is displayed on the control panel and the main body is brought to a stop.

Condition	Printing	State
T/C 6% or more	Enabled	Normal
T/C less than 6%	Enabled	Toner empty
T/C ratio of less than 4% is detected and a condition of less than 4% T/C is detected five consecutive times.	Prohibited	Toner empty (main body stop)

5. IMAGING UNIT SECTION

5.1 Configuration





[1]	Toner conveyance screw/1	[2]	Toner scooping screw
[3]	Drum paper separator fingers/guides	[4]	Drum
[5]	Developing roller	[6]	Toner supply screw
[7]	TCR sensor board	[8]	Agitating screw
[9]	Drum charge corona	[10]	Cleaning blade

5.2 Operation

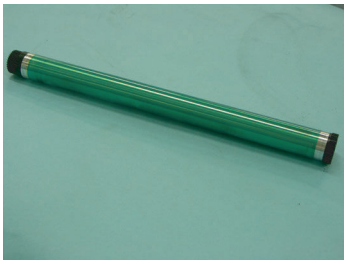
5.2.1 Imaging unit life detection

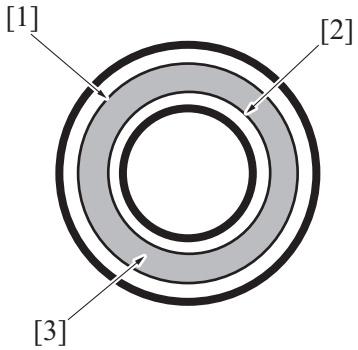
- The life of the imaging unit is calculated using the period of time through which the drum is rotated (main motor drive time).
- When the drum rotation time reaches the life value, the life message appears on the control panel.

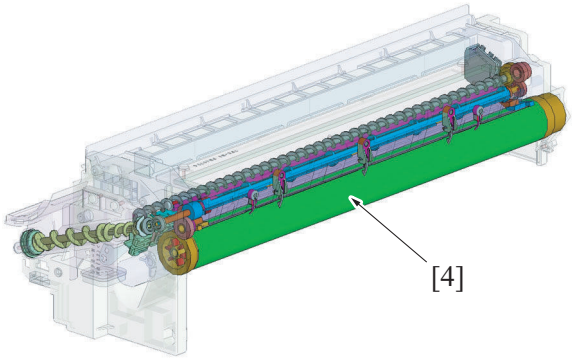
Life status	Approx. number of prints upon detection
Life	55,000
Life stop	69,000

6. IMAGING UNIT SECTION (Drum)

6.1 Configuration

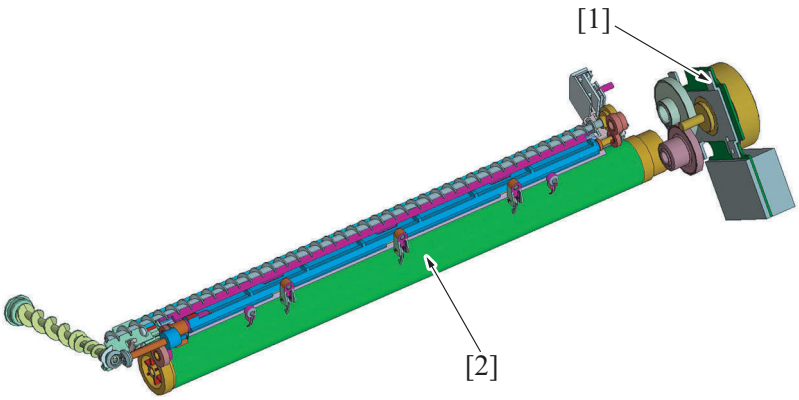






[1]	Charge transport layer	[2]	Aluminum base
[3]	Charge generating layer	[4]	Drum

6.2 Drive



[1]	Main motor (M1)	[2]	Drum

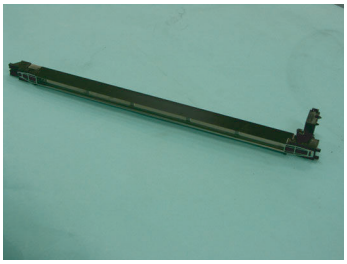
6.3 Operation

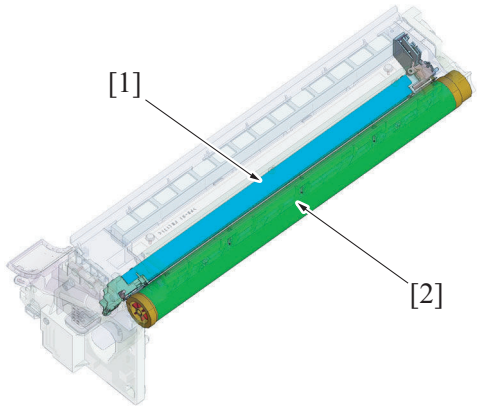
6.3.1 Drum drive

- The drum is driven by the main motor via a gear train.
- The main motor drives not only the drum, but also the transfer section, paper feed section, registration section and fusing section.

7. IMAGING UNIT SECTION (charge corona)

7.1 Configuration

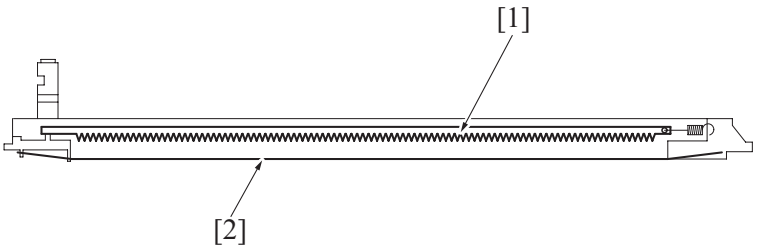




[1]	Charging unit	[2]	Drum

7.2 Operation

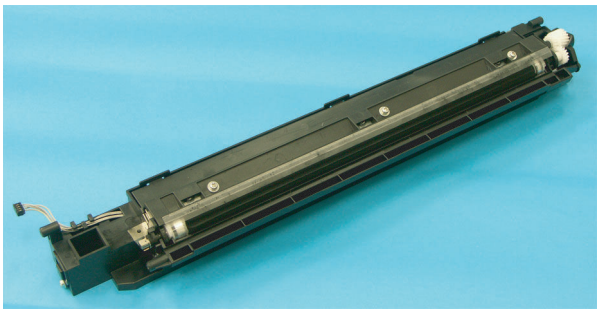
- The surface of the drum is deposited with charge through corona discharge from the drum charge corona.
- The grid mesh interposed between the corona wire and the drum ensures that a uniform charge is deposited across the entire surface of the drum.
- The corona unit has a comb electrode that discharges only toward the grid mesh. This results in the amount of ozone produced being smaller than with the wire electrode.

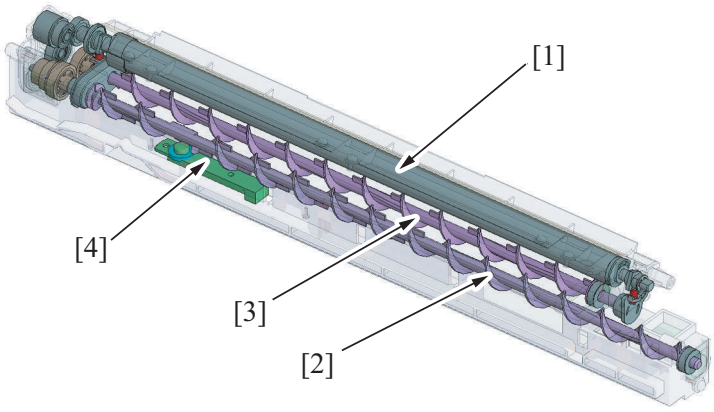


[1]	Comb electrode	[2]	Grid mesh

8. IMAGING UNIT SECTION (developing)

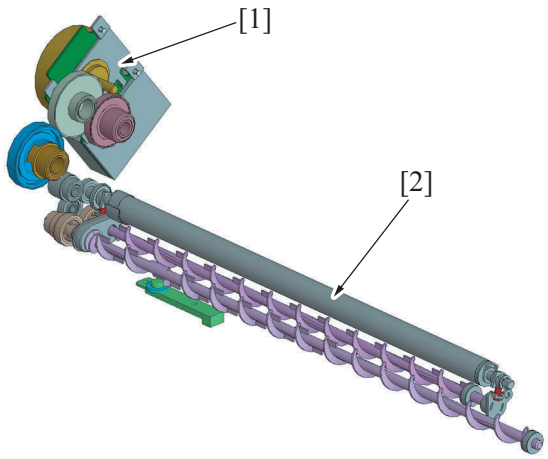
8.1 Configuration





[1]	Developing roller	[2]	Agitating screw
[3]	Toner supply screw	[4]	TCR sensor board

8.2 Drive

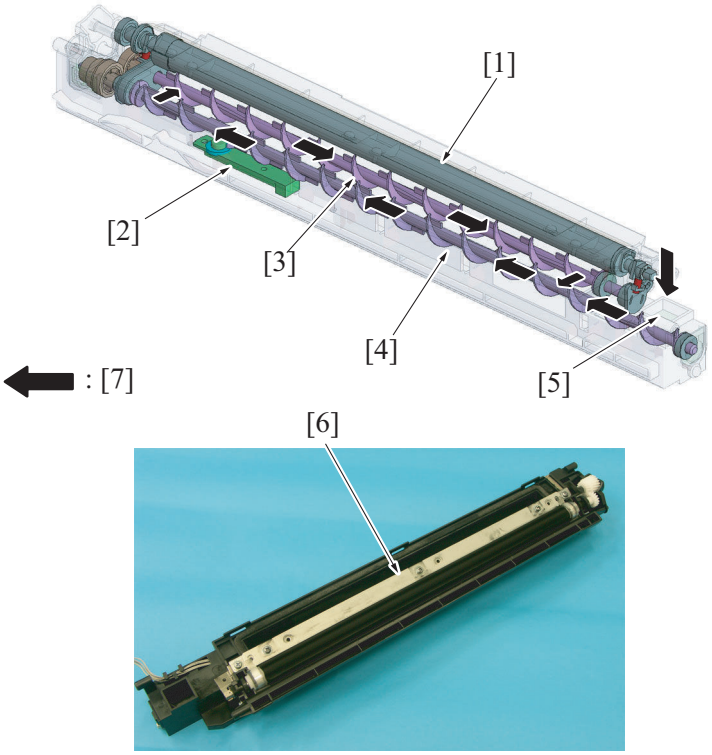


[1]	Main motor (M1)	[2]	Developing roller

8.3 Operation

8.3.1 Toner flow

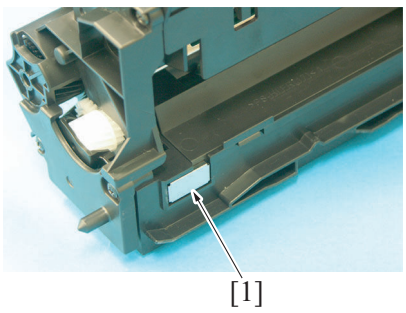
1. Toner in the toner bottle is conveyed to the toner supply port of the developing unit via toner conveying screw.
2. The toner is conveyed to the rear side of the main body by the agitating screw and to the front side of the main body by the toner supply screw.
3. The toner level detection mechanism (TCR sensor) detects the T/C ratio of the developer in the developer mixing chamber.
4. The toner conveyed to the toner supply screw is conveyed to the developing roller.
   At this time, the amount of toner on the developing roller is regulated by the doctor blade.
5. Toner on the developing roller is affixed (conveyed) to the latent image part on the drum.



[1]	Developing roller	[2]	TCR sensor board
[3]	Toner supply screw	[4]	Agitating screw
[5]	Toner supply port	[6]	Doctor blade
[7]	Toner flow	-	

8.3.2 Developing Bias

- Vb (-DC, AC) is applied to the developing roller.
- Vb (-DC) is applied to prevent toner from sticking to the background of the image.
- Vb (AC) is applied to enhance good separation of toner from carrier.
- The amount of toner sticking to the surface of the drum is varied according to the difference in potential between the voltage (Vi) on the surface of the drum and Vb (-DC).
- Large difference = A greater amount of toner sticks.
- Small difference = A smaller amount of toner sticks.



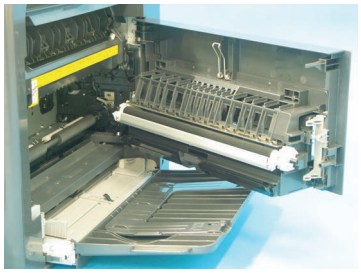
[1]	Developing Bias Terminal

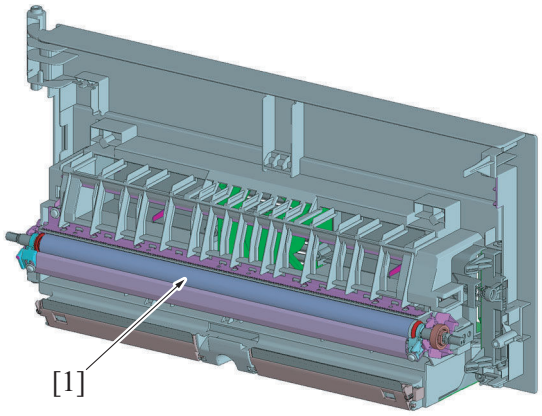
8.3.3 TCR Sensor Automatic Adjustment

- The developer in the developer mixing chamber is forcibly agitated and the output voltage of the TCR sensor is adjusted.
- The output voltage serves as data for calculating the T/C ratio. This adjustment must be made whenever the developers are changed. That is, make the TCR sensor automatic adjustment only when the developers are changed.

9. TRANSFER/SEPARATION SECTION

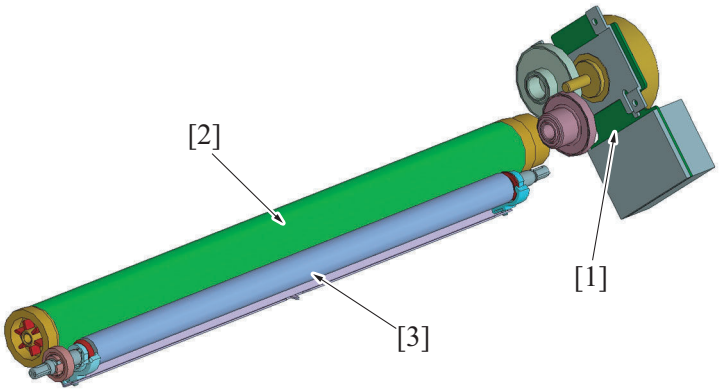
9.1 Configuration





[1]	Transfer roller

9.2 Drive



[1]	Main motor (M1)	[2]	Drum
[3]	Transfer roller	-	

9.3 Operation

9.3.1 Transfer voltage output control

- A positive charge is applied to the image transfer roller to transfer the toner image formed on the surface of the drum onto the paper.
- The charge applied to the image transfer roller is varied according to the following conditions to ensure that image transfer efficiency is stabilized.
  1. Paper width: The smaller the paper width, the greater the amount of charge.
  2. B/W ratio of image: The lower the coverage, the greater the amount of charge.

9.3.2 Transfer roller cleaning control

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

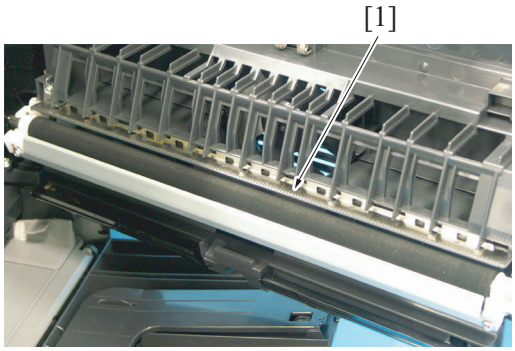
(1) Operation timing

- The cleaning is performed during a warm-up cycle after the front or right door is opened and closed.

9.3.3 Paper Separation control

(1) Paper neutralization

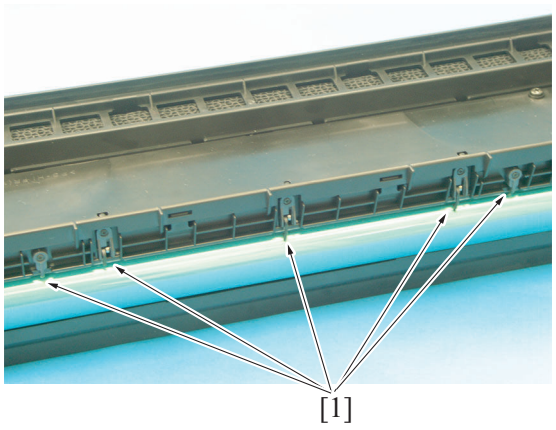
- There is the charge neutralizing plate fitted to the guide plate after the transfer roller. To neutralize any charge potential left in the paper which has undergone the image transfer stage, the charge neutralizing bias (DC-) is applied to the charge neutralizing plate.



[1]	Charge neutralizing plate

(2) Paper separation

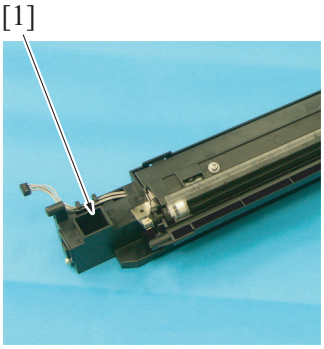
- Paper separation is accomplished through the curvature separation system that works on the diameters of the drum and the image transfer roller.
  Since the drum has a small diameter, there is no likelihood that the paper will be wound around the drum. The paper is separated by its own weight.
- The charge neutralizing plate neutralizes any charge left on the paper after image transfer, thereby preventing discharge noise that could otherwise occur when the paper is separated.
- The drum paper separator fingers properly separate from the surface of the drum thin paper or other type of paper that is hard to separate.

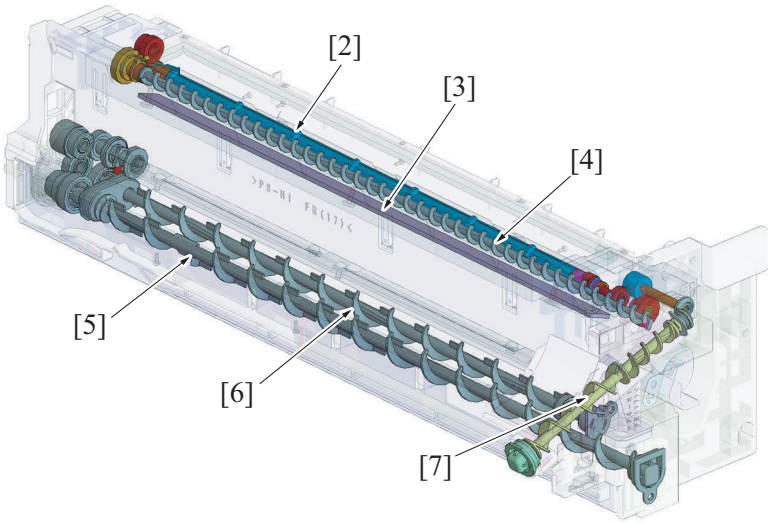


[1]	Drum paper separator fingers/guides

10. TONER COLLECTION SECTION

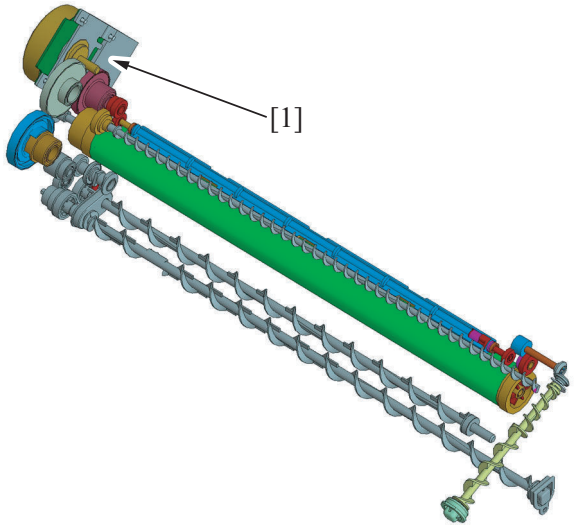
10.1 Configuration





[1]	Toner collection port	[2]	Toner scooping screw
[3]	Cleaning blade	[4]	Toner conveyance screw/1
[5]	Agitating screw	[6]	Toner supply screw
[7]	Toner conveyance screw/2	-	

10.2 Drive

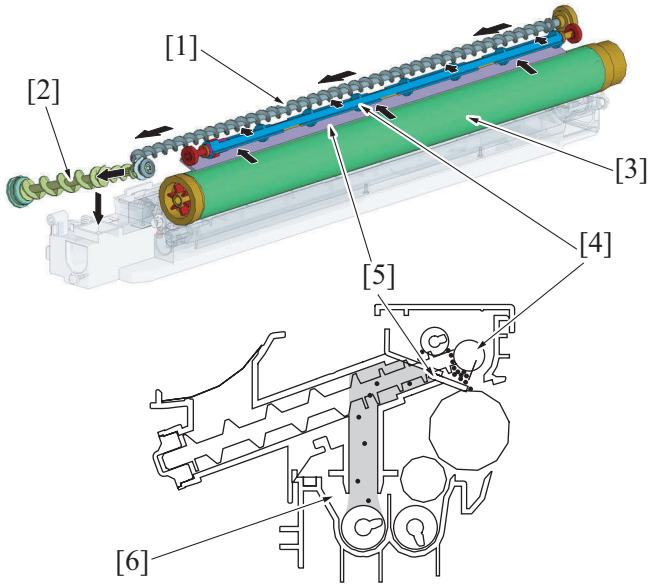


[1]	Main motor (M1)

10.3 Operation

10.3.1 Toner collecting path

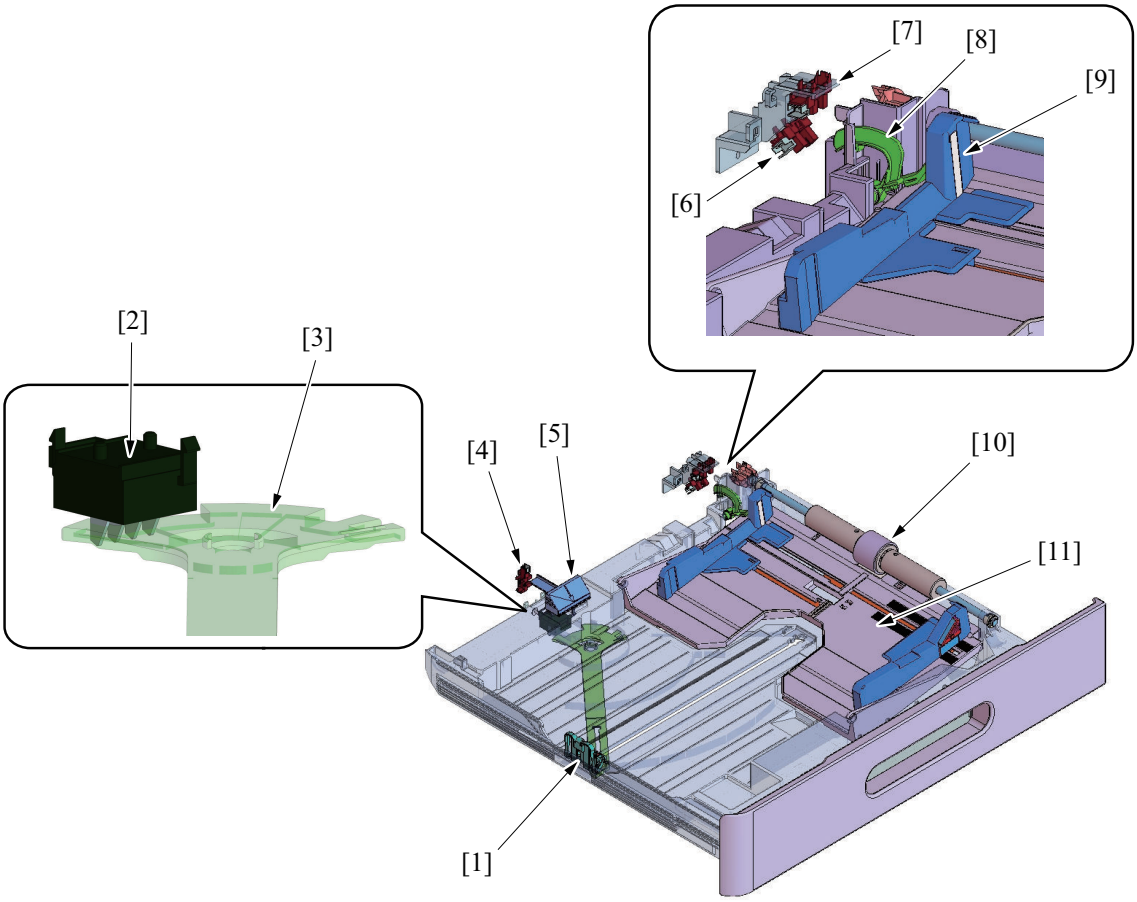
- The cleaning blade is used to scrape residual toner off the surface of the drum.
- The toner removed by the cleaning blade is scooped up by the toner scooping screw and conveyed by way of toner conveyance screw/1 and toner conveyance screw/2 onto the developer mixing chamber.
- The following control is provided to prevent paper dust from being wedged between the cleaning blade and the drum. When the cumulative period of time through which the drum has been driven reaches a predetermined value, the drum is turned backward (by turning the Main Motor backward).



[1]	Spent toner conveying screw 1	[2]	Spent toner conveying screw 2
[3]	Drum	[4]	Toner scooping screw
[5]	Cleaning blade	[6]	Developer mixing chamber

11. PAPER FEED SECTION (Tray1)

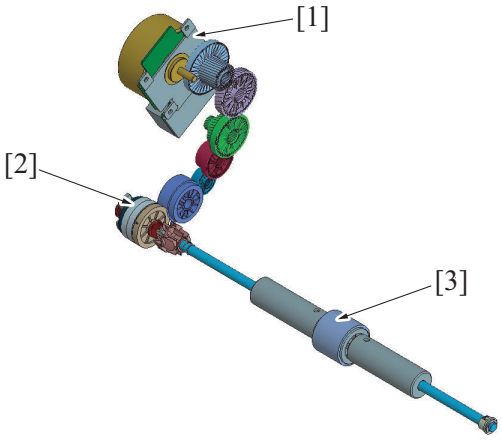
11.1 Configuration



[1]	Paper FD guide	[2]	Paper size detect switch (S4)
[3]	Paper FD size detect plate	[4]	Inch/metric sensor (PS6)
[5]	Inch/metric change lever *	[6]	Paper size sensor (PS5)
[7]	Tray set sensor (PS4)	[8]	Paper CD size detect lever
[9]	Paper CD guide	[10]	Feed roller
[11]	Paper lifting plate	-	

- *: Asia Pacific only

11.2 Drive

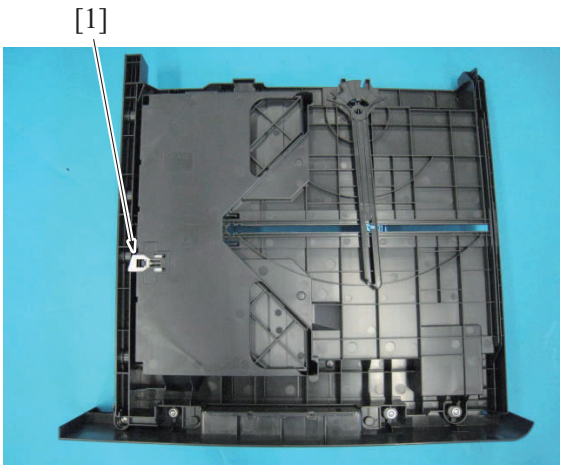


[1]	Main motor (M1)	[2]	Tray1 paper feed clutch (CL1)
[3]	Feed roller	-	

11.3 Operation

11.3.1 Up/down control

- The media lift plate is pressed down into the locked position (in which the media is loaded in position).
- Load a media stack and then slide the tray into the main body. This causes the lock release lever to unlock the media lift plate.
- The media lift plate (media stack) is pressed against the feed roller.
- The media lift plate (media stack) is pressed upward by the springs at all times.



[1]	Lock release lever

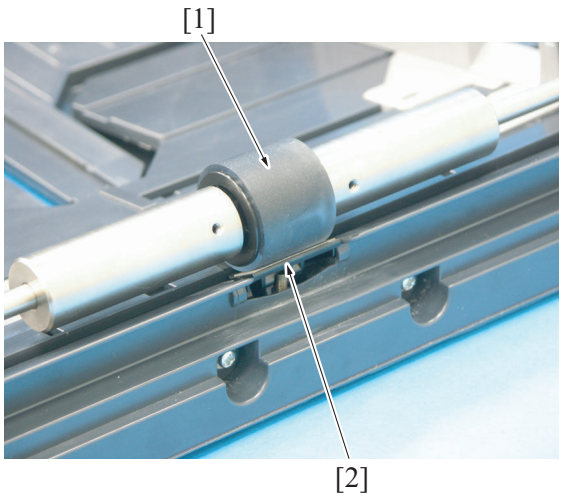
11.3.2 Paper feed control

(1) Pick-up control

- When the Tray1 paper feed clutch (CL1) is energized, drive from the main motor (M1) is transmitted to the paper feed roller via the paper pick-up clutch and the pick-up roller is rotated.

(2) Multiple sheet feeding prevention control

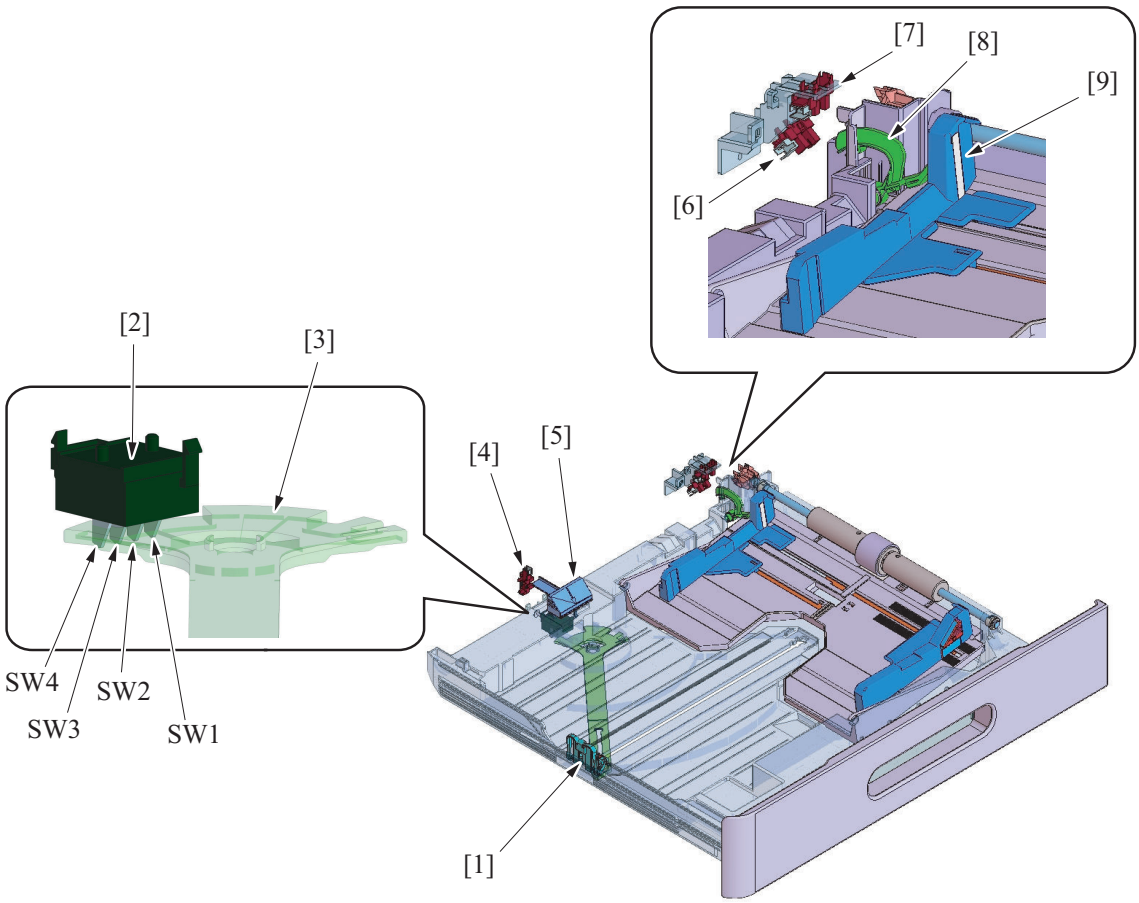
- The fixed separation pad system is used for media separation. This ensures that only the first sheet of media is taken up and fed in.



[1]	Paper feed roller	[2]	Separation pad

11.3.3 Paper size detection mechanism

- The combination of the detected paper width and length determines the paper size.
- To detect paper width, the paper CD size detect lever interlocking with the paper CD guide blocks or unblocks the paper size sensor.
- To detect paper length, the paper FD size detect plate interlocking with the paper FD guide turns ON or OFF the paper size detect switch.
- Sliding the inch/metric change lever from side to side unblocks or blocks the inch/metric sensor to switch between the inch and metric settings for tray 1.(Asia Pacifica only)



[1]	Paper FD guide	[2]	Paper size detect switch (S4)
[3]	Paper FD size detect plate	[4]	Inch/metric sensor (PS6)*
[5]	Inch/metric change lever *	[6]	Paper size sensor (PS5)
[7]	Tray set sensor (PS4)	[8]	Paper CD size detect lever
[9]	Paper CD guide	-	-

- *: Asia Pacific only

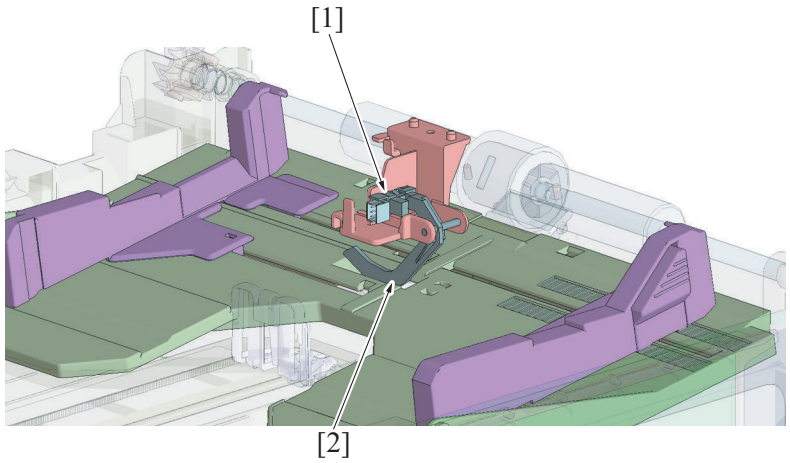
Paper size sensor (PS5)	Paper size detect switch (S4)				Marketing area				
	SW4	SW3	SW2	SW1	Europe	North America	China	Latin America (metric)	Latin America (inch)
-	-	-	ON	-	A5	Invoice	A5	A5	Invoice
-	-	ON	ON	-	A5	Invoice	A5	A5	Invoice
-	ON	-	-	ON	B5	Invoice	16K	B5	Invoice
-	ON	ON	-	-	A5S	Invoice S	A5S	A5S	Invoice S
Blocked	ON	ON	-	-	A4	Letter	A4	A4	Letter
-	ON	ON	ON	-	A5S	Invoice S	16K S	A5S	Invoice S
Blocked	ON	ON	ON	-	A4	Letter	A4	A4	Letter
-	ON	ON	ON	ON	B5S	Letter S	16K S	Letter S	Letter S
-	-	ON	ON	ON	A4S	Letter S	A4S	A4S	A4S
-	-	-	-	ON	FLS S*	Letter S	FLS*	FLS*	FLS S*
-	-	-	-	-	B4	Legal	8K	Legal	Legal
Blocked	-	-	-	-	B4	Legal	8K	Legal	Legal
Blocked	ON	-	-	-	A3	11 x 17	A3	A3	11 x 17

- *: FLS (Foolscap) can be specified by selecting any of the following paper sizes.
  8 1/2 x 13 1/2, 8 1/2 x 13, 8 1/4 x 13, 8 1/8 x 13 1/4, 8 x 13, 8 13/20 x 13

11.3.4 Remaining paper level detection control

(1) Paper empty detection

- The Tray1 empty sensor (PS2) detects a paper-empty condition in the drawer.
- When paper runs out, the actuator is raised to unblock the tray1 empty sensor and the corresponding message appears on the control panel.
- The press of the start key does not start a copy cycle when no paper is loaded in the drawer.

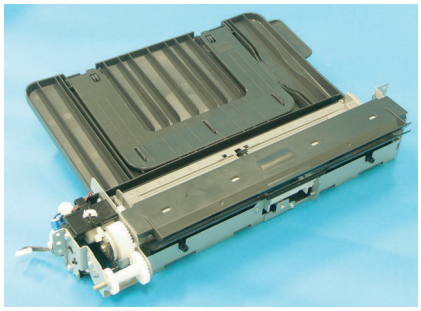


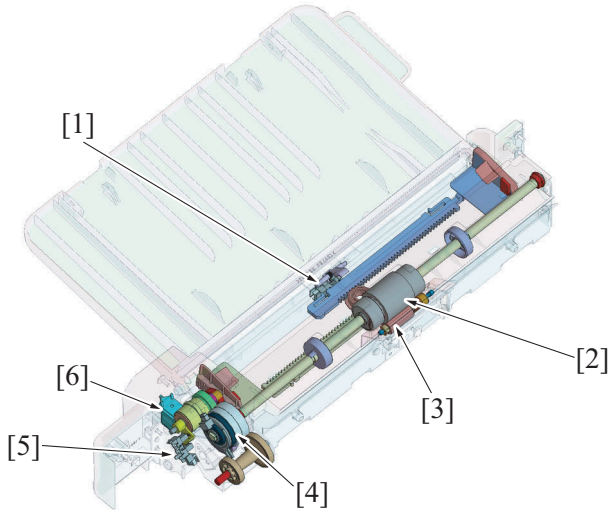
[1]	Tray 1 empty sensor (PS2)	[2]	Actuator

12. MULTI BYPASS SECTION (MB-505)

12.1 Configuration

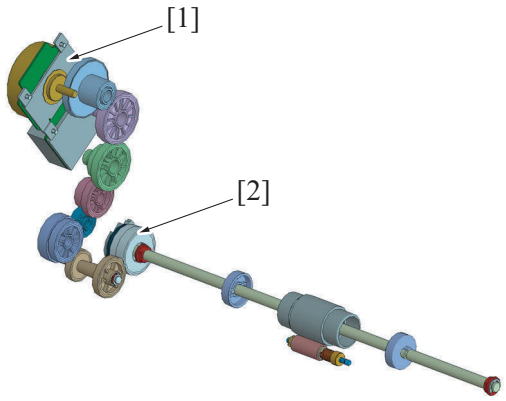
- bizhub 195/235: Standard
- bizhub 215: Standard on the product shipped to except North America and Europe area





[1]	Bypass paper empty sensor (PS1)	[2]	Feed roller
[3]	Separation roller	[4]	Bypass paper feed clutch (CL1)
[5]	Bypass lift sensor (PS2)	[6]	Bypass pick-up solenoid (SD1)

12.2 Drive



[1]	Main motor (M1)	[2]	Bypass paper feed clutch (CL1)

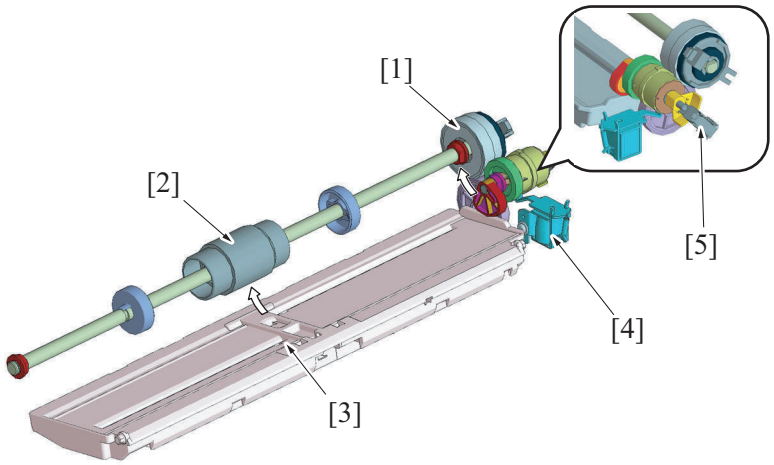
12.3 Operation

12.3.1 Up/down control

- The paper lifting plate is raised to press the paper stack on the tray up against the feed roller.
- The bypass pick-up solenoid is energized for a predetermined period of time during rotation of the main motor. This unlocks the paper lift-up plate clutch (mechanical) and the driving force of the main motor is transmitted to the paper lift-up cam.

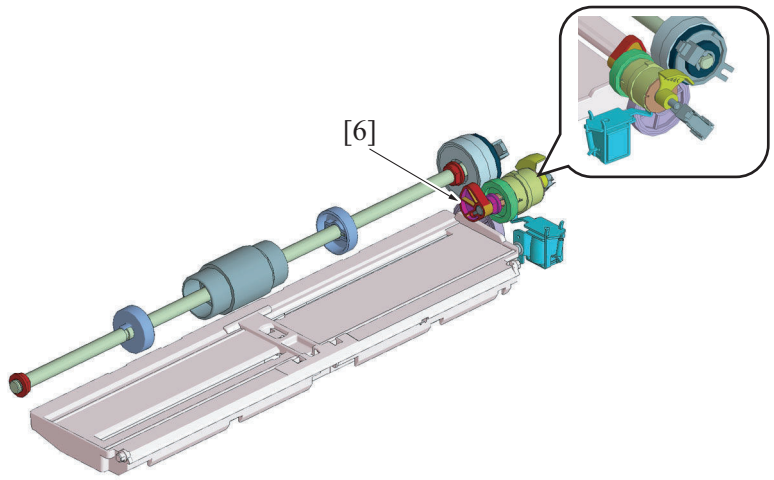
- As the paper lift-up cam rotates, the paper lift-up plate which has so far been pushed down by the paper lift-up cam is raised to the paper feed position by the spring.
- The bypass pick-up solenoid is energized for a predetermined period of time during rotation of the main motor. This rotates the paper lift-up cam, so that the cam pushes the paper lift-up plate down into its standby position.
- The ascent and descent motion of the paper lifting plate is controlled using the bypass lift sensor (PS2). The ascent or descent motion is stopped after the lapse of a predetermined period of time after the sensor has been blocked or unblocked (blocked: stopping the ascent motion; unblocked: stopping the descent motion).

(1) Before lifting



[1]	Bypass paper feed clutch (CL1)	[2]	Feed roller
[3]	Paper lifting plate	[4]	Bypass pick-up solenoid (SD1)
[5]	Bypass lift sensor (PS2)	[6]	Cam

(2) After lifting



12.3.2 Paper feed control

(1) Pick-up control

- The feed roller is driven by the main motor through the bypass paper feed clutch.
- When the bypass paper feed clutch (CL1) is energized, drive from the main motor (M1) is transmitted to the pick-up roller via the paper pick-up clutch and the pick-up roller is rotated.

(2) Multiple sheet feeding prevention control

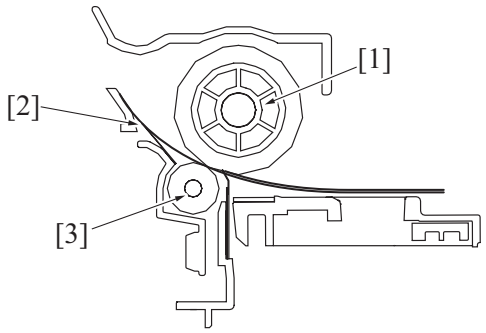
- The coefficient of friction between the Feed Roller and Separation Roller is effectively used to prevent double feed of paper.

When one sheet of paper is taken up:

- The coefficient of friction on the front side of the sheet of paper taken up and fed through the space between the feed roller and separation roller is the same as that on the backside of the sheet of paper, allowing the paper to be properly fed into the machine.

When two or more sheets of paper are taken up:

- The coefficient of friction between the paper and the separation roller is greater than that between the sheets of paper, which allows only the top sheet of paper to be fed into the machine.

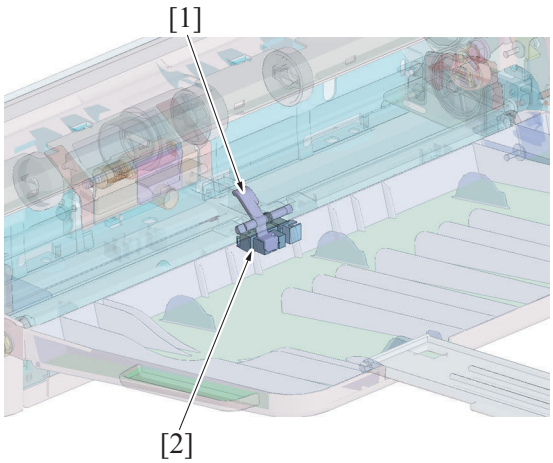


[1]	Feed roller	[2]	Paper
[3]	Separation roller	-	

12.3.3 Remaining paper level detection control

(1) Paper empty detection

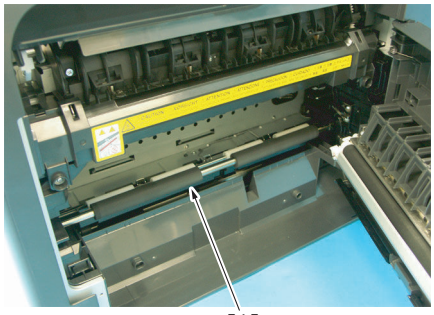
- The bypass paper empty sensor (PS1) detects a paper-empty condition in the drawer.
- When paper runs out, the actuator is raised to block the tray1 empty sensor.
- When the tray1 empty sensor is blocked, the bypass pick-up solenoid is energized and the paper lifting plate is lowered.
- The press of the start key does not start a copy cycle when no paper is loaded in the bypass section.

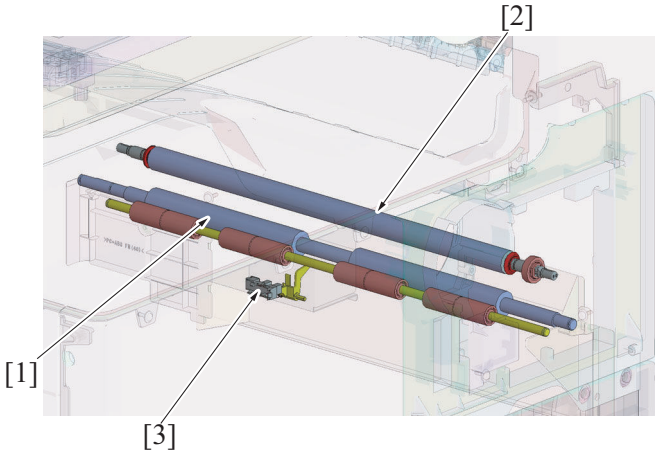


[1]	Actuator	[2]	Bypass paper empty sensor (PS1)

13. REGISTRATION SECTION

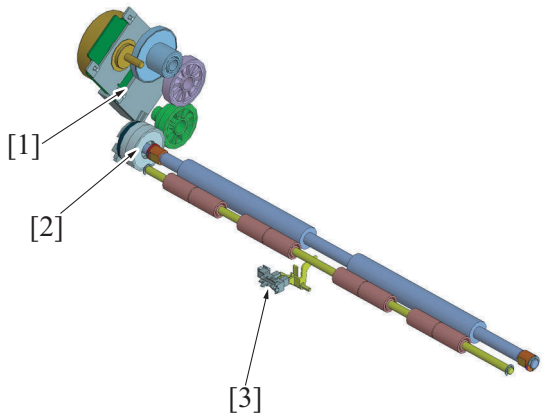
13.1 Configuration





[1]	Registration roller	[2]	Transfer roller
[3]	Registration sensor (PS1)	-	

13.2 Drive



[1]	Main motor (M1)	[2]	Registration clutch (CL1)
[3]	Registration sensor (PS1)	-	

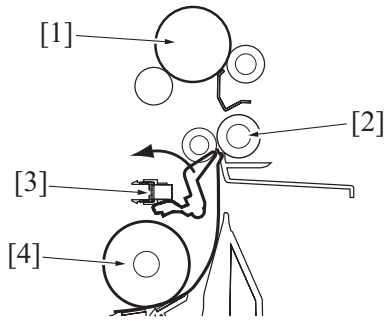
13.3 Operation

13.3.1 Registration control

- The main motor provides the drive for the registration roller.
- The registration roller clutch is connected to the registration roller. When the registration clutch is energized, the driving force of the main motor is transmitted to the registration roller. This rotates the registration roller.
- During paper transport, a loop is formed in the paper between the tray 1 feed roller (bypass feed roller) and the registration roller to thereby correct any skew in the paper.
- Registration roller is controlled in order to synchronize the timing the unit starts writing the image and conveying paper.

(1) Adjustment

- The amount of the loop in the paper can be varied using “SERVICE’S CHOICE - LOOP Ad. (TRAY1) / LOOP Ad. (BYPASS)”. Changing the adjustment value will vary the timing at which the registration clutch is energized.

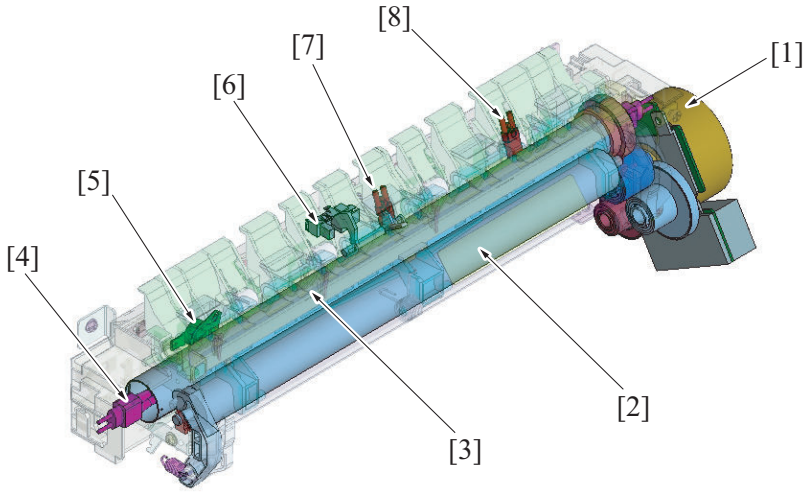


[1]	Drum	[2]	Registration roller
[3]	Registration sensor (PS1)	[4]	Feed roller

14. FUSING SECTION

14.1 Configuration

- The fusing section has the structure shown below and each roller is driven by the main motor (M1).



[1]	Main motor (M1)	[2]	Pressure roller
[3]	Heat roller	[4]	Fusing heater lamp
[5]	Thermostat (TS1)	[6]	Exit sensor (PS3)
[7]	Thermistor/1 (TH1)	[8]	Thermistor/2 (TH2)

14.2 Operation

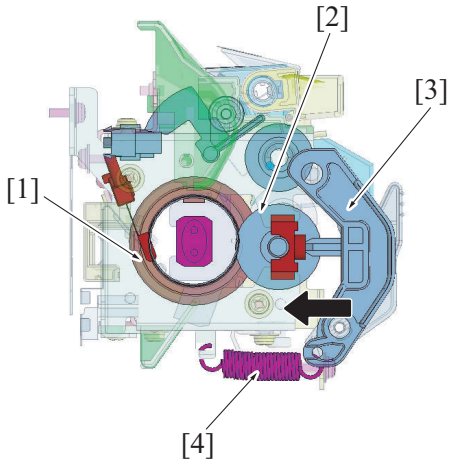
14.2.1 Fusing speed correction

(1) Hear roller speed control

- The heat roller is driven by the main motor.
- The pressure roller, which is pressed up against the heat roller, is driven by the heat roller.

14.2.2 Fusing pressure control

The pressure roller is directly pressed up against the heat roller by the pressure spring.

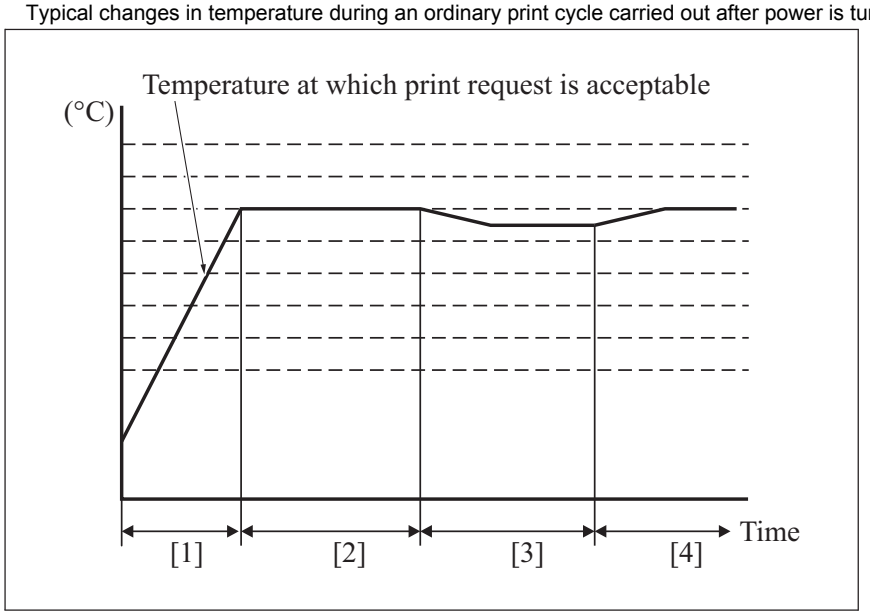


[1]	Heat roller	[2]	Pressure roller
[3]	Pressure lever	[4]	Pressure spring

14.2.3 Fusing temperature control

- The fusing heater lamp is turned on and off to keep a set temperature on the surface of the Fusing Roller.
- The fusing roller surface temperature is detected by using a thermistor that translates the temperature to a corresponding electrical signal.
- If the fusing roller temperature becomes excessively high, the fusing roller heater lamp is shut down.

Typical changes in temperature during an ordinary print cycle carried out after power is turned ON



[1]	During warm-up cycle	[2]	In standby state
[3]	During a print cycle	[4]	In standby state

(1) Temperature control during warm-up

- Control is provided until the Heat roller reaches the predetermined level.

(a) Control start timing

- The power switch is turned ON.
- A door is closed.
- The main body leaves the sleep mode.

(b) Control termination timing

- The fusing roller reaches a predetermined temperature.
- A door is opened.

(2) Temperature control during stand-by

- Control is provided to ensure that the temperature of the fusing roller becomes a constant value during the standby state.

(a) Control start timing

- At the end of the warm-up control
- At the end of a print cycle

(b) Control termination timing

- At the start of a print cycle
- A door is opened.
- A malfunction or media misfeed occurs.

(3) Temperature control during printing

- The fusing temperature is controlled to ensure a sufficient fusing strength.

(a) Control start timing

- A print request is received.

(b) Control termination timing

- A malfunction or media misfeed occurs.

(c) Print control temperatures

- The fusing roller temperature is controlled by setting an optimum temperature of the heat roller according to the size and type of the media.
- As an example, there is a difference in the controlled temperature of about 10°C between the plain paper and card1/2, and between A4 size and A3 size.

(4) Temperature control during sleep mode

- The fusing heater is turned OFF during the sleep mode.

14.2.4 Protection from abnormally high temperature

(1) First approach: Thermistor protection (Software protection)

- The main body determines that there is a condition of an abnormally high temperature when thermistor/1 continuously detects a predetermined temperature or more for a predetermined period of time or more. The main body then gives the following message: “Trouble code C3751 (Fusing failure: abnormally high fusing temperature 1)”.
- The main body determines that there is a condition of an abnormally high temperature when thermistor/2 continuously detects a predetermined temperature or more for a predetermined period of time or more. The main body then gives the following message: “Trouble code C3751 (Fusing failure: abnormally high fusing temperature 1)”. The main body prohibits the initiation of any new print cycle as soon as it displays the trouble code.
- When the trouble code is displayed, printing will be prohibited.

(2) Second approach: Thermistor protection (Hardware protection)

- If either thermistor/1 or thermistor/2 detects an abnormally high temperature when the CPU overruns to be unable to detect an abnormally high temperature trouble, the heater relay of the DC power supply unit is turned OFF via the printer control board, thereby shutting down power supplied to the fusing heater lamp.
- The power supplied to the fusing heater lamp can be shut down before the thermostat of the third approach is activated. This inhibits damage to the fusing unit.

(3) Third approach: Thermostat protection

- If the abnormally high temperature through the first and second approach cannot be detected because of a faulty thermistor, the thermostat comes into play to shut down the power supplied to the fusing heater lamp.

14.2.5 PPM Control

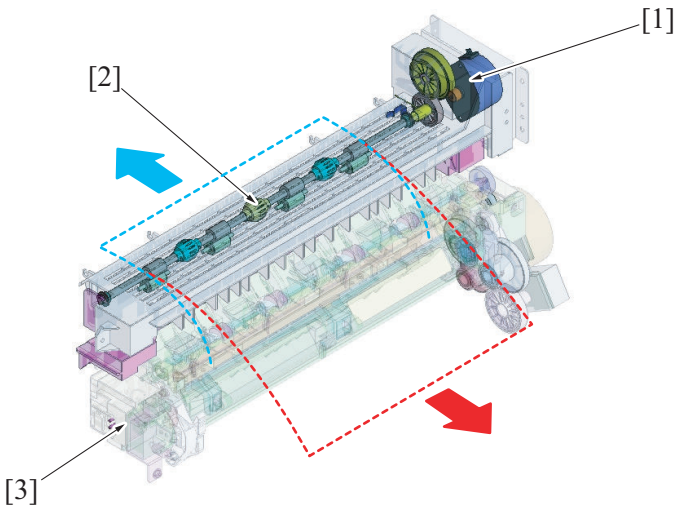
- To ensure good fusing of image printed on paper, the paper interval is increased to reduce the number of pages printed in continuous printing and to prevent the decrease of fusing performance during continuous printing.
- The paper interval is always 593 mm regardless of paper type under the PPM control.
- When Fuser Temp in service mode is set to +2, +3, or +4, the PPM control is enabled when plain paper or recycled paper is used (For China and Latin America only)

14.2.6 New article detection

- The fusing unit is not mounted with any new article detection mechanism.
- If the fusing unit is replaced with a new one, reset the counter using [CLEAR DATA] of the service mode. [SERVICE MODE] / [CLEAR DATA] / [PM COUNTER] / [FUSING] menu.

15. PAPER EXIT SECTION

15.1 Configuration



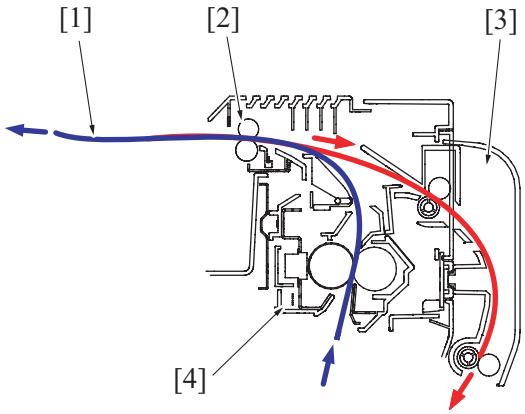
[1]	Switchback motor (M4)	[2]	Exit roller
[3]	Fusing unit	-	

15.2 Operation

15.2.1 Conveyance control

(1) A. Conveyance path

- The exit roller is driven by the switchback motor.
- The media conveyed from the fusing section is fed out into the exit tray.
- In duplex mode, the rotation of the switchback motor is reversed to transport paper conveyed from the fusing unit into the duplex unit.



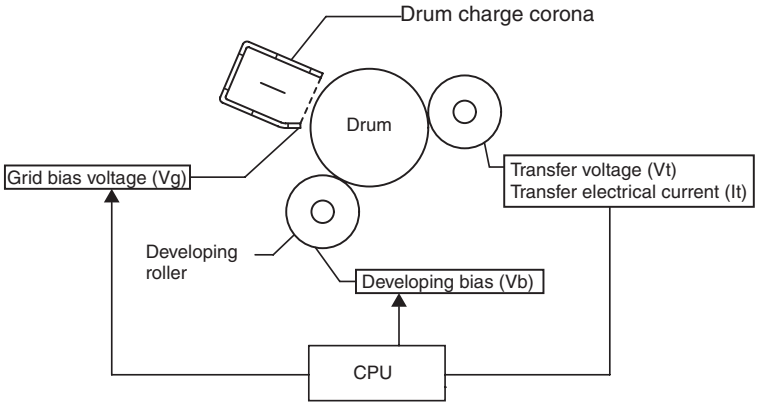
[1]	Paper	[2]	Exit roller
[3]	Duplex unit	[4]	Fusing section

16. IMAGE STABILIZATION CONTROL

16.1 Configuration

The following image stabilization controls are provided to ensure stabilized copy image.

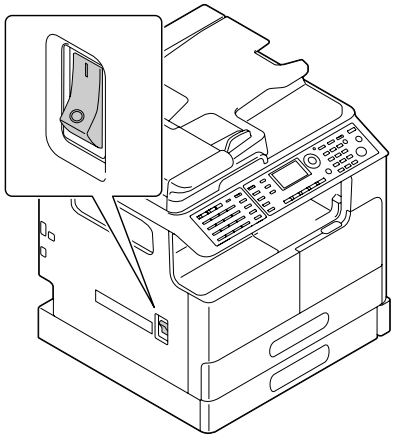
Purpose	Means	Control
To stabilize image density.	Grid bias voltage (Vg) Developing bias (Vb)	The Vg/Vb control voltage is varied to bring Vg/Vb to an appropriate level according to the following settings. • ID ADJUST (Service mode) • VG ADJUST (Service mode) • Print Density (Utility) • SUPPLIES LIFE COUNT. (Service mode) • Paper type
To stabilize image transfer.	Transfer voltage (Vt) Transfer electrical current (It)	The image transfer output is varied to bring the image transfer electrical current to an appropriate level according to the following conditions. • Paper type • Paper size • B/W ratio of image



17. POWER SUPPLY SECTION

17.1 When the main power switch is turned ON

17.1.1 Configuration



[1]	Power switch

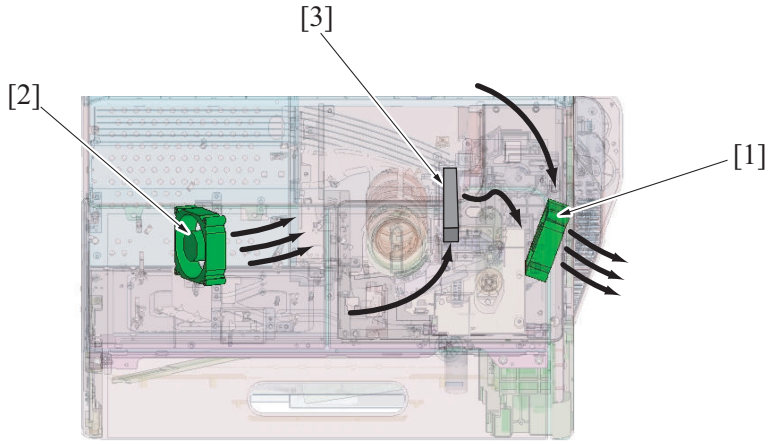
17.1.2 Operation

- When the power switch is turned ON, power is supplied from the dc power supply to the following components.

Voltage	Power supplied to
24 V	MFP board, High voltage unit, PH unit
3.3 V	

18. FAN CONTROL

18.1 Configuration



[1]	Fusing cooling fan motor (FM1)	[2]	Cooling fan motor (FM2)
[3]	Ozone filter	-	

18.2 Operation

18.2.1 Function

Motor Name	Function (purpose)
Fusing cooling fan motor (FM1)	• A fan motor draws air from the area around the fusing unit to the outside to prevent the machine interior temperature from running high. In addition, the fan motor pulls paper being transported up through suction force to help stabilize paper transport. • Ozone produced from the drum charge corona is absorbed by the ozone filter from the air drawn by a fan motor to the outside.
Cooling fan motor (FM2)	• The air inside the machine is circulated to prevent temperature increase. • The cooling fan motor is installed when the optional automatic duplex unit (AD-509) is used.

18.2.2 Fan control

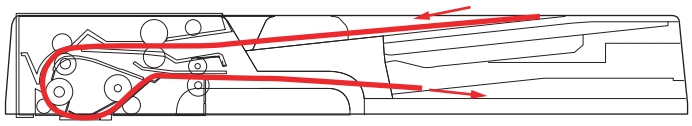
Motor Name	Control	Control Conditions
Fusing cooling fan motor (FM1)	ON (high speed)	• During rotation of the main motor (M1) (excluding the warm-up period)
	Stop	• During warm-up • Operation stop after 2 seconds after * the main motor stop • Upon occurrence of trouble or jam • When the front door or the right door is opened.
Cooling fan motor (FM2)	ON (high speed)	• During rotation of the main motor (M1) (excluding the warm-up period) • When 26 °C (79F) or more is detected by the temperature/ humidity sensor.
	Stop	• Operation stop after 2 seconds after * the main motor stop • Upon occurrence of trouble or jam • When the front door or the right door is opened.

• *: The time spent until each motor stops can be changed in I.4.3.49 SUCTION FAN in service mode.

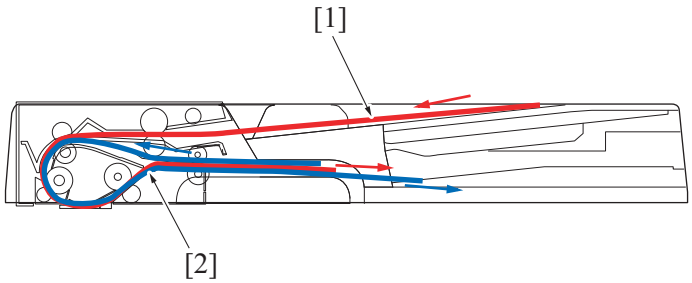
PA THEORY OF OPERATION DF-625

1. PAPER PATH

1.1 1-sided mode



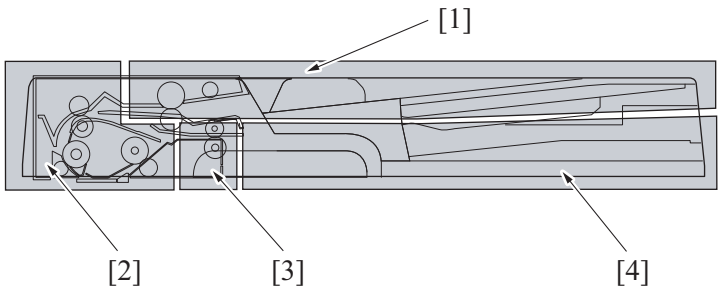
1.2 2-sided mode



[1]	Scanning of front side	[2]	Scanning of back side

2. CONFIGURATION

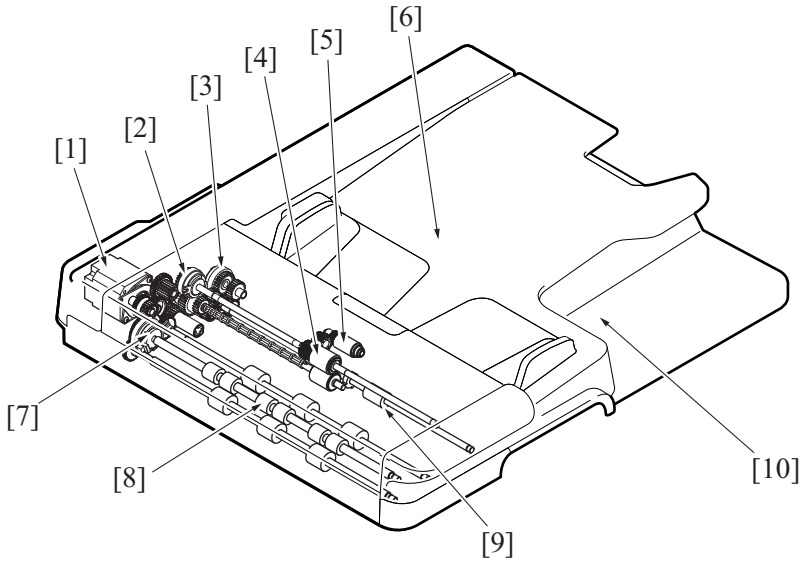
The reverse automatic document feeder consists of the original paper feed section, original paper transport section, original paper switchback section, and original paper exit section.



[1]	Original paper feed section	[2]	Original paper transport section
[3]	Original paper switchback section	[4]	Original paper exit section

3. DRIVE

- In the reverse automatic document feeder (DF-625), the driving force from the DF motor is controlled by each clutch and transmitted to each roller.



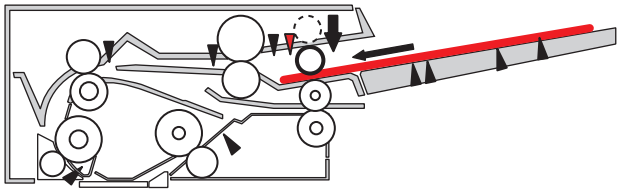
[1]	DF motor (M1)	[2]	Document feed clutch (CL1)
[3]	Switchback clutch (CL3)	[4]	Feed roller
[5]	Pick-up roller	[6]	Original paper set tray
[7]	Document registration clutch (CL2)	[8]	Registration roller
[9]	Exit/switchback roller	[10]	Original paper exit tray

4. OPERATION

4.1 Flow of operations in 1-sided mode

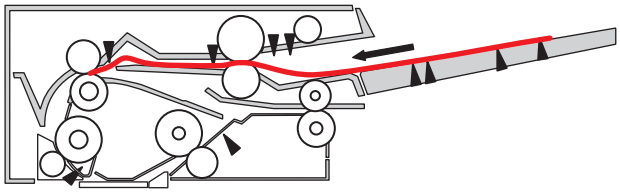
4.1.1 Operation 1

- When an original is set in the original paper set tray, the original empty sensor detects the original.
- When the Start button is pressed on MFP, the pickup roller is lowered to feed the original.



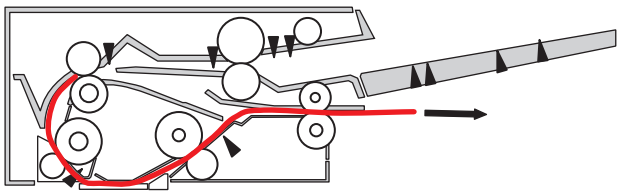
4.1.2 Operation 2

- As the registration roller is stationary, a loop is formed in the leading edge of the original to correct its skew.
- The registration roller starts rotating and the original is transported to the original scan position.



4.1.3 Operation 3

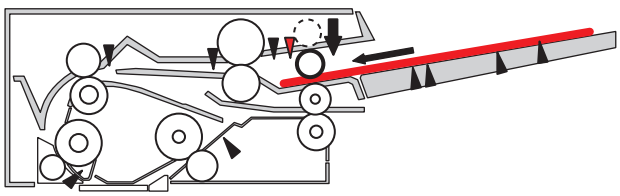
- After scanning of the image data of the original transported to the scan position, the original is conveyed to the exit tray.
- At the time of the original ejection, the switchback clutch is controlled so that the exit roller rotates in the way of conveying the original to the exit direction.



4.2 Flow of operations in 2-sided mode

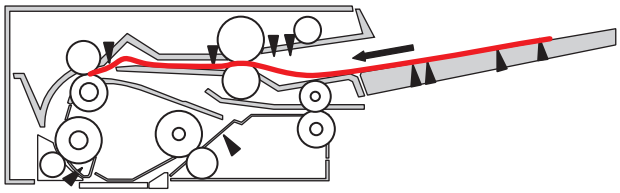
4.2.1 Operation 1

- When an original is set in the original paper set tray, the original empty sensor detects the original.
- When the Start button is pressed on MFP, the pickup roller is lowered to feed the original.



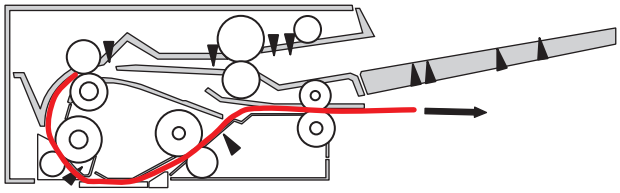
4.2.2 Operation 2

- As the registration roller is stationary, a loop is formed in the leading edge of the original to correct its skew.
- The registration roller starts rotating and the original is transported to the original scan position.



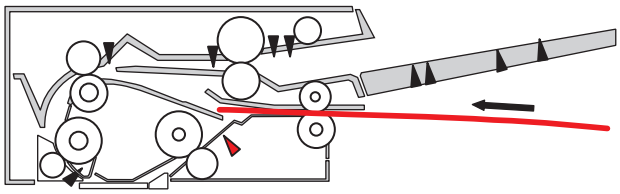
4.2.3 Operation 3

- After scanning of the image data of the front side of the original transported to the scan position, the original is transported to the switchback position.



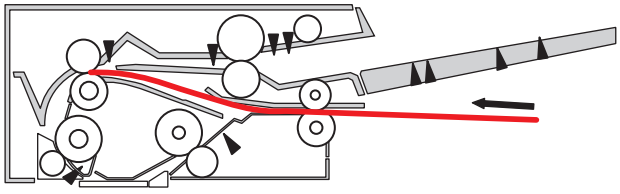
4.2.4 Operation 4

- Immediately before the trailing edge of the original leaves the exit roller, the switchback clutch is controlled to reverse the rotation direction of the exit roller. The original is transported into the unit.



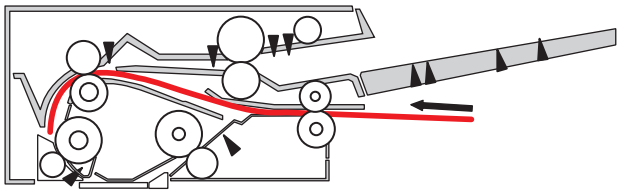
4.2.5 Operation 5

- The reverse rotation of the exit roller transports the original into the unit and the registration roller corrects the original skew.
- The registration roller starts rotating and the original is transported to the scan position.



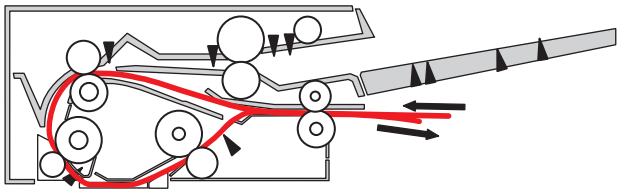
4.2.6 Operation 6

- After the original passes through the registration roller, the exit roller clutch is controlled so that the exit roller rotates in the way of conveying the original to the exit direction.



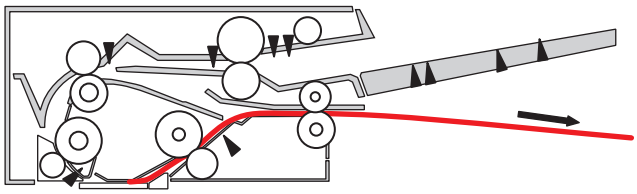
4.2.7 Operation 7

- The original is transported to the scan position and the image data of the back side is scanned. Then the original is transported to the exit roller.
- Originals pass each other on the exit roller.



4.2.8 Operation 8

- The original is transported to the switchback position.

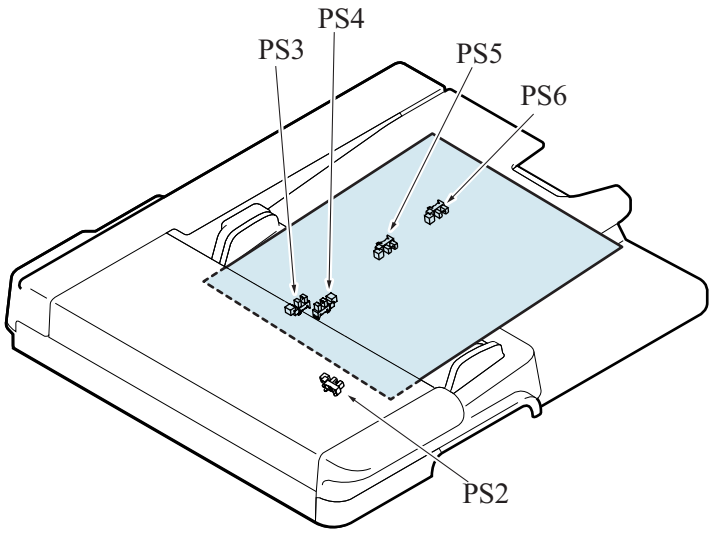


4.2.9 Operation 10

- To eject originals in the correct order, operations 5 to 8 are performed again and the originals are conveyed to the exit tray.

4.3 Original size detection operation

- The combination of three document width sensors and two document length sensors is used to detect an original size.



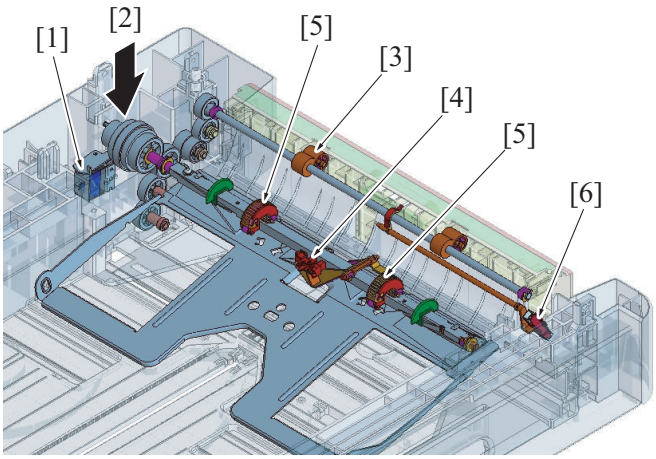
Document size			Document width sensor (CD)			Document length sensor (FD)	
Paper	width (mm)	length (mm)	PS2	PS3	PS4	PS5	PS6
5.5" x 8.5" S	139.7	215.9	H	H	H	H	H
A5 S	148	210	L	L	H	H	H
B5 S	182	257	L	L	H	L	H
A5	210	148	L	L	L	H	H
A4 S	210	297	L	L	L	L	H
5.5" x 8.5"	215.9	139.7	L	L	L	H	H
8.5" x 11" (Letter) S	215.9	279.4	L	L	L	L	H
8.5" x 13" (Legal)	215.9	330.2	L	L	L	L	L
8.5" x 14" (Legal)	215.9	355.6	L	L	L	L	L
B5	257	182	H	L	L	H	H
B4	257	364	H	L	L	L	L
16K	267 (270)	194 (195)	H	H	L	H	H
8K S	267 (270)	388 (390)	H	H	L	L	L
8.5" x 11" (Letter)	279.4	215.9	H	L	H	H	H
11" x 17"	279.4	431.8	H	L	H	L	L
A4	297	210	H	H	H	H	H
A3	297	420	H	H	H	L	L

- L: Unblocking , H: Blocking

PB THEORY OF OPERATION PF-507

1. CONFIGURATION/DRIVE

- The paper feed unit has the structure below. The activated paper feed solenoid transmits the driving force of the main motor (M1) to the paper feed roller and transport roller via the gears.

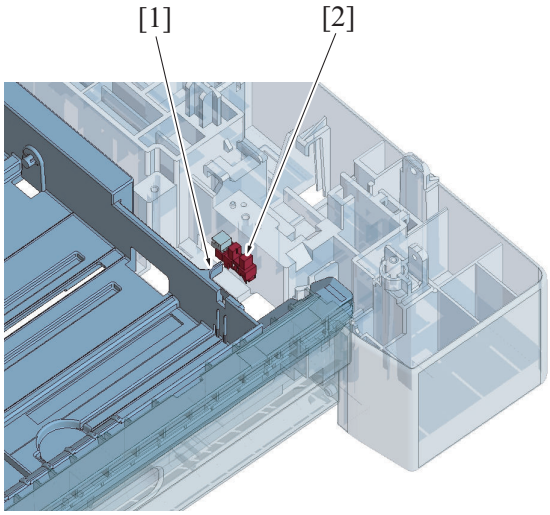


[1]	Paper feed solenoid (SD1)	[2]	Driving force from the MFP main motor (M1)
[3]	Transport roller	[4]	Paper empty sensor (PS1)
[5]	Feed roller	[6]	Paper feed sensor (PS2)

2. OPERATION

2.1 Paper feed tray-in-position detection

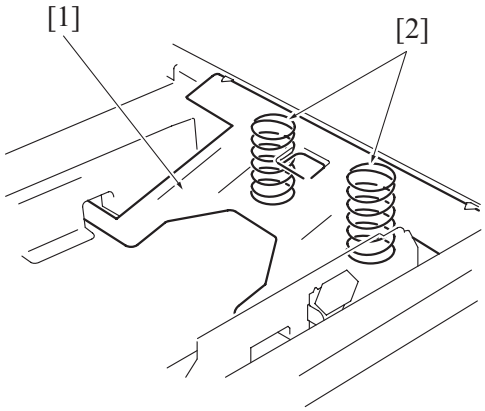
- When a tray is slid into the cabinet, the tray set sensor is blocked and the copier determines that the tray has been slid in position.

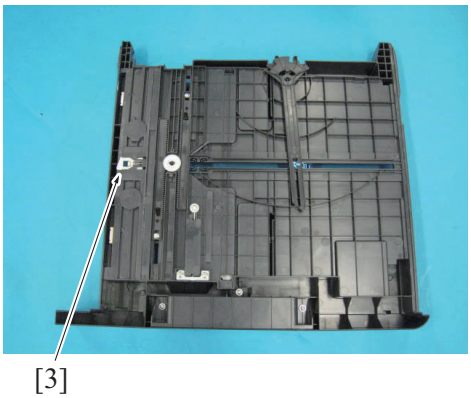


[1]	Light blocking plate	[2]	Tray set sensor (PS3)

2.2 Paper lifting plate

- The paper lifting plate is locked into position when it is pressed down. It is unlocked when the tray is slid into the unit.
- The paper lifting plate is pushed upward by the paper lifting springs at all times.

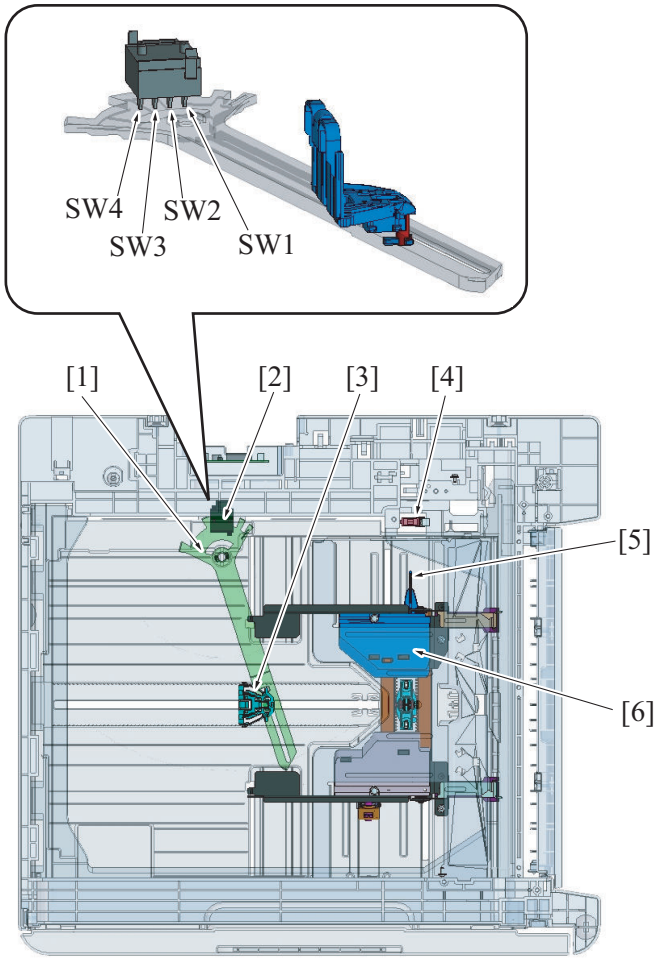




[1]	Paper Lifting Plate	[2]	Paper Lifting Spring
[3]	Lock release lever	-	

2.3 Paper size detecting mechanism

- The width and length of paper are detected, and their combination allows the paper size to be detected.
- To detect paper width, the light blocking plate provided in the paper CD guide unblocks or blocks the paper size sensor.
- To detect paper length, the paper FD size detect plate interlocking with the paper FD guide turns ON or OFF the paper size detect switch.



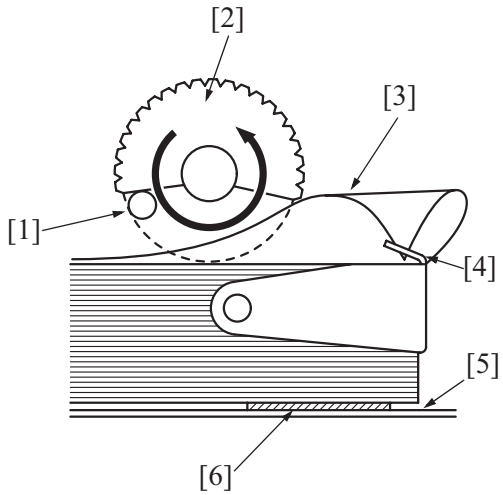
[1]	Paper FD size detect plate	[2]	Paper size detect switch (S1)
[3]	Paper FD guide	[4]	Paper size sensor (PS5)
[5]	Light blocking plate	[6]	Paper CD guide

Paper size sensor (PS5)	Paper size detect switch (S1)				Marketing area				
	SW4	SW3	SW2	SW1	Metric	Inch	China	Latin America (metric)	Latin America (inch)
-	ON	-	-	ON	B5	-	16K	B5	-
Blocked	ON	ON	-	-	A4	Letter	A4	A4	Letter
Blocked	ON	ON	ON	-	A4	Letter	A4	A4	Letter
-	ON	ON	ON	ON	B5S	Letter S	16K S	Letter S	Letter S
-	-	ON	ON	ON	A4S	Letter S	A4S	A4S	A4S
-	-	-	-	ON	FLS S*	Letter S	FLS*	FLS*	FLS S*
-	-	-	-	-	B4	Legal	8K	Legal	Legal
Blocked	-	-	-	-	B4	-	8K	Legal	-
Blocked	ON	-	-	-	A3	11 x 17	A3	A3	11 x 17

- *: FLS (Foolscap) can be specified by selecting any of the following paper sizes.
  8 1/2 x 13 1/2, 8 1/2 x 13, 8 1/4 x 13, 8 1/8 x 13 1/4, 8 x 13, 8 13/20 x 13

2.4 Paper separating mechanism

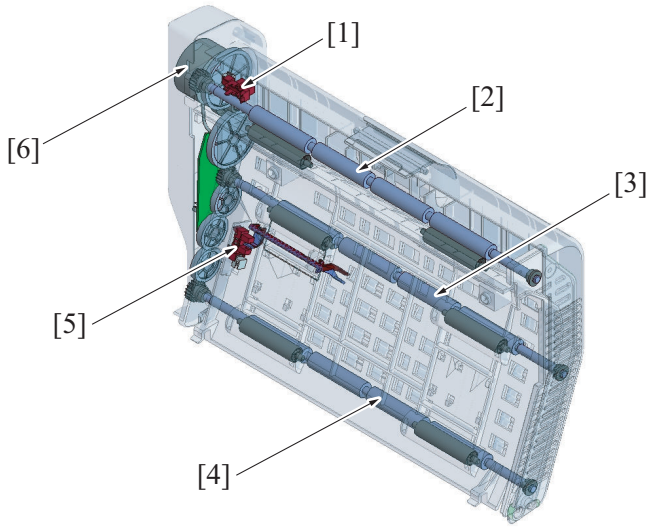
- A loop is formed in the paper between the separator fingers and the feed roller. The turning force of the feed roller overcomes the block of the separator fingers, causing the top sheet of paper to ride over the fingers and be fed out of the tray into the copier.
- When there are only two sheets of left in the tray and if the friction force of the paper lifting plate is low, the bottom sheet of paper is taken up and fed into the copier with the top sheet of paper. To prevent this situation from occurring, there is a friction plate provided on top of the paper lifting plate.
- Before the feed roller contacts the paper, the feed roller holds the paper down so that the paper remains stationary before its being taken up by the feed roller.



[1]	Roll	[2]	Feed roller
[3]	Paper	[4]	Separator finger
[5]	Paper lifting plate	[6]	Friction plate

PC THEORY OF OPERATION AD-509

1. CONFIGURATION/DRIVE

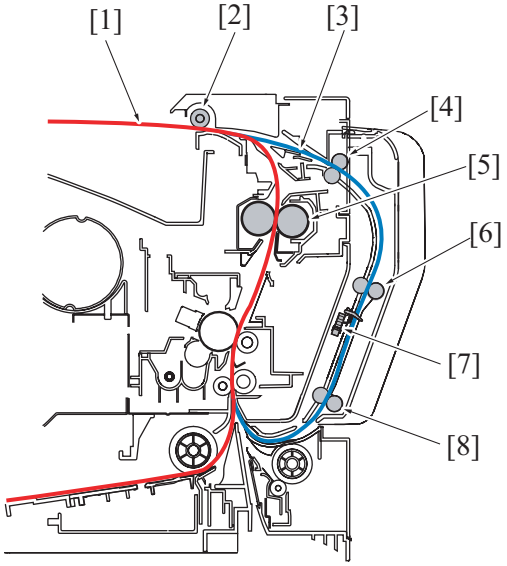


[1]	Door sensor (PS1)	[2]	Duplex transport roller/1
[3]	Duplex transport roller/2	[4]	Duplex transport roller/3
[5]	Transport sensor (PS2)	[6]	AD motor (M1)

2. OPERATION

2.1 Paper transport control

- Paper transported from the paper exit/switchback section is transported to the internal duplex unit by the duplex transport roller/1.
- Paper is transported to the registration section by the duplex transport roller/2 and /3 to re-transport the paper.



[1]	1-sided mode paper path	[2]	Paper exit/switchback roller
[3]	2-sided mode paper path	[4]	Duplex transport roller/1
[5]	Fusing roller (Heating roller/Pressure roller)	[6]	Duplex transport roller/2
[7]	Transport sensor (PS2)	[8]	Duplex transport roller/3

2.1.1 Transport roller control

- The duplex transport roller/1, duplex transport roller/2 and duplex transport roller/3 are connected to duplex transport motor. When the duplex transport motor is energized, these rollers start rotating to transport paper.

2.1.2 Paper entrance control

- The paper transported from the fusing section is temporarily fed in the paper exit direction. When the paper reaches a predetermined position, the switchback motor of the exit section is rotated backward. Then, the paper exit/switchback roller is rotated backward, so that the paper is fed to the duplex transport roller/1.
- When the paper reaches a predetermined position, the AD motor of the duplex unit is energized. The duplex transport roller/1 is then rotated to transport the paper fed from the paper exit section to the duplex transport roller/2.

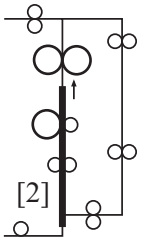
2.1.3 Duplex paper feed control

- The transport sensor located upstream of the duplex transport roller/3 along the paper path detects the leading edge of the paper transported from the duplex transport roller/2.
- When the leading edge of the paper moves past the transport sensor and reaches the specified position, the AD motor is deenergized to stop the transport of the paper temporarily (re-feeding position).
- At predetermined paper feed timing, the AD motor is energized to resume the transport of the paper.
- The paper is fed from the duplex transport roller/3 onto the registration roller at the vertical transport part.

2.2 Paper conveyance control in duplex unit

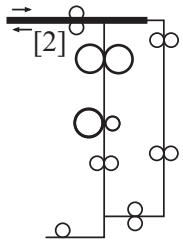
2.2.1 Paper conveyance with one sheet in duplex unit

(1) Operation 1



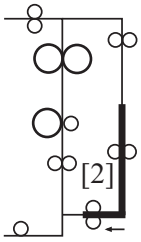
- The first sheet of paper is taken up and fed in from the main body drawer and the main body starts the first print cycle to produce the print image of the second page of the original [2].

(2) Operation 2



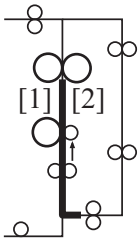
- The 1-sided print is transported to the paper exit/switchback section.
- When the paper reaches a predetermined position, the direction of rotation of the paper exit/switchback roller is changed and the 1-sided print is transported toward and into the duplex unit.

(3) Operation 3



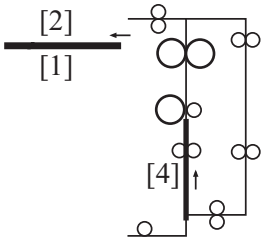
- The 1-sided print, which is being fed through the duplex unit, is temporarily stopped at the re-transport position and then re-transported.

(4) Operation 4



- The main body carries out the second print cycle to produce the print image of the first page of the original [1] on the other side of the 1-sided print.

(5) Operation 5

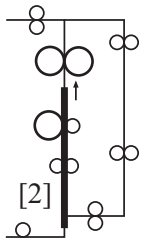


- The first 2-sided print is fed out to the exit section of the main body.
- At the same time that the first 2-sided print is fed out of the main body, the image of the fourth page of the original [4] is printed on the second sheet of paper.

- Steps 2 through 5 are repeated.

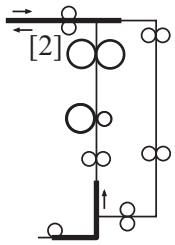
2.2.2 Paper conveyance with two sheets circulated in duplex unit

(1) Operation 1



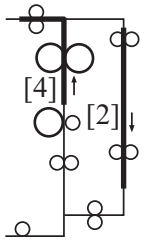
- The first sheet of paper is taken up and fed in from the main body drawer and the main body starts the first print cycle to produce the print image of the second page of the original [2].

(2) Operation 2



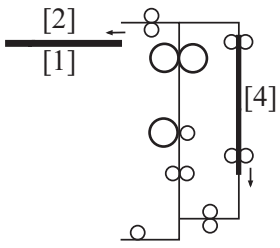
- The 1-sided print is transported to the paper exit/switchback section.
- When the paper reaches a predetermined position, the direction of rotation of the paper exit/switchback roller is changed and the 1-sided print is transported toward and into the duplex unit.
- At the same time that the 1-sided print is transported, the second sheet of paper is taken up and fed into the main body.

(3) Operation 3



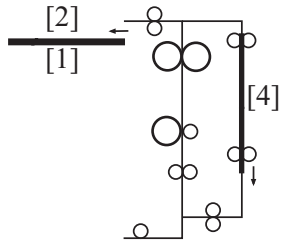
- The print image of the fourth page of the original is produced on the second sheet of paper [4] and the paper is transported to the paper exit/switchback section.
- At the same time, the first 1-sided print is transported through the duplex unit.

(4) Operation 4



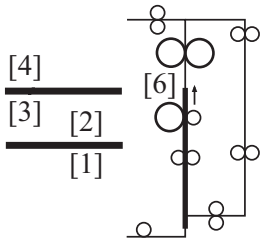
- The main body produces the print image of the first page of the original [1] on the first 1-sided print.
- The second 1-sided print is transported through the duplex unit.

(5) Operation 5



- While feeding the first 2-sided print out, main body produces the print image of the 3rd page of the original [4] on the second sheet of paper.

(6) Operation 6

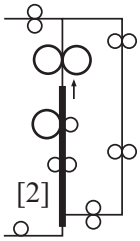


- While feeding the second 2-sided print out, main body produces the print image of the 6th page of the original [6] on the third sheet of paper.

- Steps 2 through 6 are repeated.

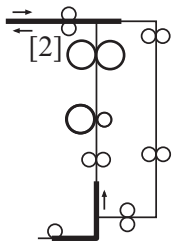
2.2.3 Two sheets alternatively conveyed in duplex unit

(1) Operation 1



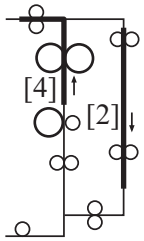
- The first sheet of paper is taken up and fed in from the main body drawer and the main body starts the first print cycle to produce the print image of the second page of the original [2].

(2) Operation 2



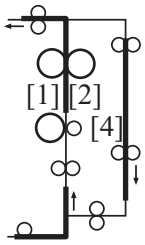
- The 1-sided print is transported to the paper exit/switchback section.
- When the paper reaches a predetermined position, the direction of rotation of the paper exit/switchback roller is changed and the 1-sided print is transported toward and into the duplex unit.
- At the same time that the 1-sided print is transported, the second sheet of paper is taken up and fed into the main body.

(3) Operation 3



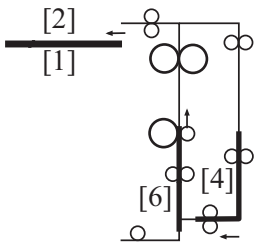
- The print image of the fourth page of the original is produced on the second sheet of paper [4] and the paper is transported to the paper exit/switchback section.
- At the same time, the first 1-sided print is transported through the duplex unit.

(4) Operation 4



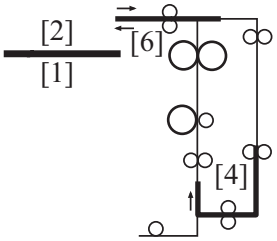
- The main body produces the print image of the first page of the original [1] on the first 1-sided print.
- At the same time that the image of the first page of the original is printed, the third sheet of paper is taken up and fed into the main body.
- The second 1-sided print is transported through the duplex section.

(5) Operation 5



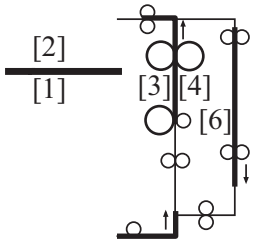
- While feeding the first 2-sided print out, main body produces the print image of the 6th page of the original [6] on the third sheet of paper.
- The second 1-sided print is stopped immediately after the duplex transport roller 3 and waits until the third sheet of paper undergoes the print process for printing the print image of the 6th page of the original.

(6) Operation 6



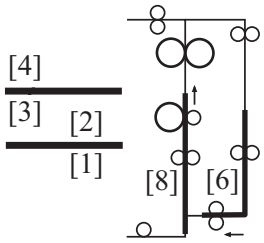
- The third 1-sided print is transported to the paper exit/switchback section.
- When the paper reaches a predetermined position, the direction of rotation of the paper exit/switchback roller is changed and the third 1-sided print is transported toward and into the duplex unit.
- At the same time, a sequence is started to re-feed the second 1-sided print that has been in the standby state in the duplex unit.

(7) Operation 7



- The main body carries out the first print cycle for the second sheet of paper to produce the print image of the third page of the original [3].
- At the same time, the third 1-sided print is transported through the duplex section.
- At the same time, the forth sheet of paper is taken up and fed into the main body.

(8) Operation 8



- While feeding the second 2-sided print out, main body produces the print image of the 8th page of the original [8] on the fourth sheet of paper.
- The third 1-sided print is stopped immediately after the duplex transport roller 3 and waits until the fourth sheet of paper undergoes the print process for printing the print image of the 8th page of the original.

- Steps 6 through 8 are repeated.

Q PARTS GUIDE MANUAL (1st Edition)

INFORMATION FOR PARTS GUIDE MANUAL

To find correct Parts No., refer to the “HOW TO MAKE THE BEST USE OF THIS MANUAL” in the following page.

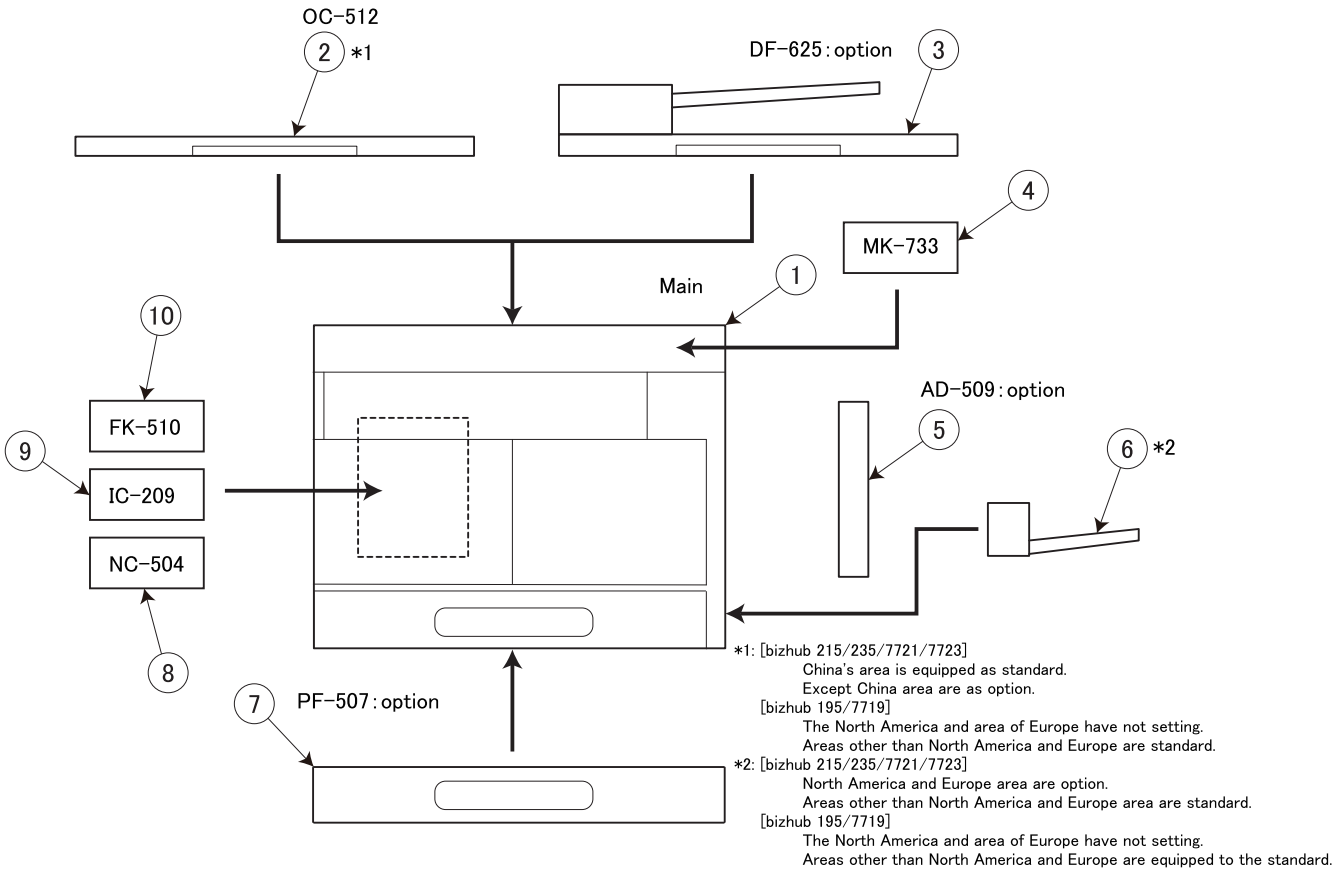
NOTICE

- This parts guide manual is 1st edition and will not be updated. Please ask your parts administrator about the newest parts information.

HOW TO MAKE THE BEST USE OF THIS MANUAL

1. When you order, please check the proper figures beforehand that are on Our Parts Guide Manual, and order with the appropriate figures.
2. For screws, Nuts, Washers, retaining rings and Pins which are used in this model, one letter is shown on the Standard parts column of Parts list and exploded diagrams.
3. In order to maintain safety of the product, some specific parts composed of this product are set up as "essential safety parts".
4. The assigned parts number for the "essential safety parts" is indicated as "SP00-****".
   When replacing these parts, follow precautions for disassembling and installing which are listed in the Service Manual.
   Do not use any parts that are not set up as
5. ♣ means that there are exclusive parts for each destination.
   Please check the appropriate destination when you order.
6. Revision Mark
   Marked as ▲ on the illustration shows that the revision has been made.
7. All rights reserved. (any reprints or quotations are prohibited.)
   Use of this parts guide manual should be strictly supervised to avoid disclosure of confidential information.

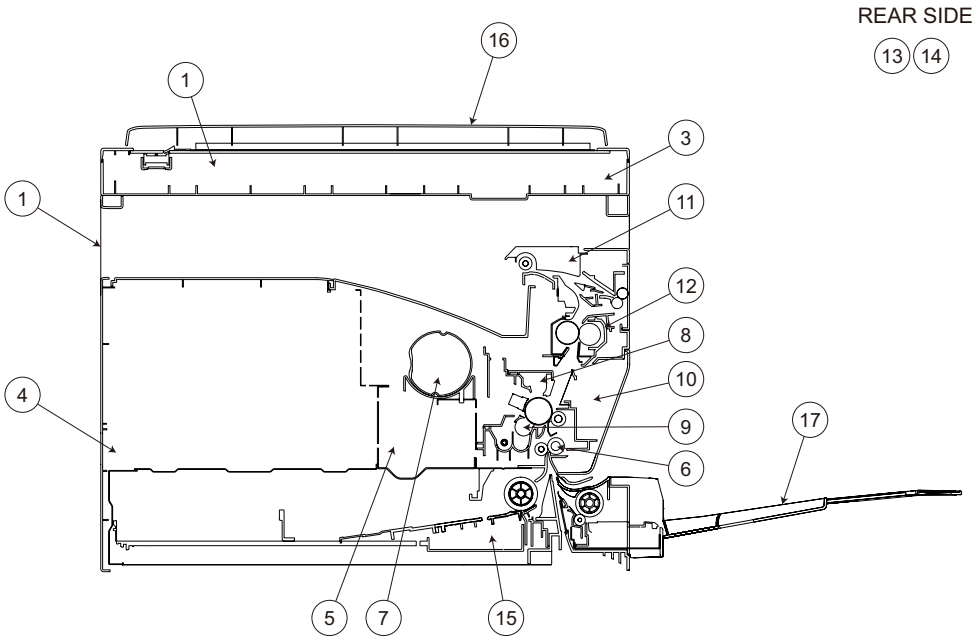
SYSTEM OUTLINE



No.	Description	Model
1	DIGITAL MFP B/W	bizhub 195/bizhub 215/ bizhub 235/ bizhub 7719/bizhub 7721/bizhub 7723
2	OTHER OPTION	OC-512
3	DOCUMENT FEEDER	DF-625
4	OTHER OPTION	MK-733
5	DUPLEX	AD-509
6	PAPER FEEDER	MB-505
7	PAPER FEEDER	PF-507
8	OTHER OPTION	NC-504
9	OTHER OPTION	IC-209
10	OTHER OPTION	FK-510

1. DIGITAL MFP B/W (bizhub 195/bizhub 215/bizhub 235/bizhub 7719/bizhub 7721/bizhub 7723)

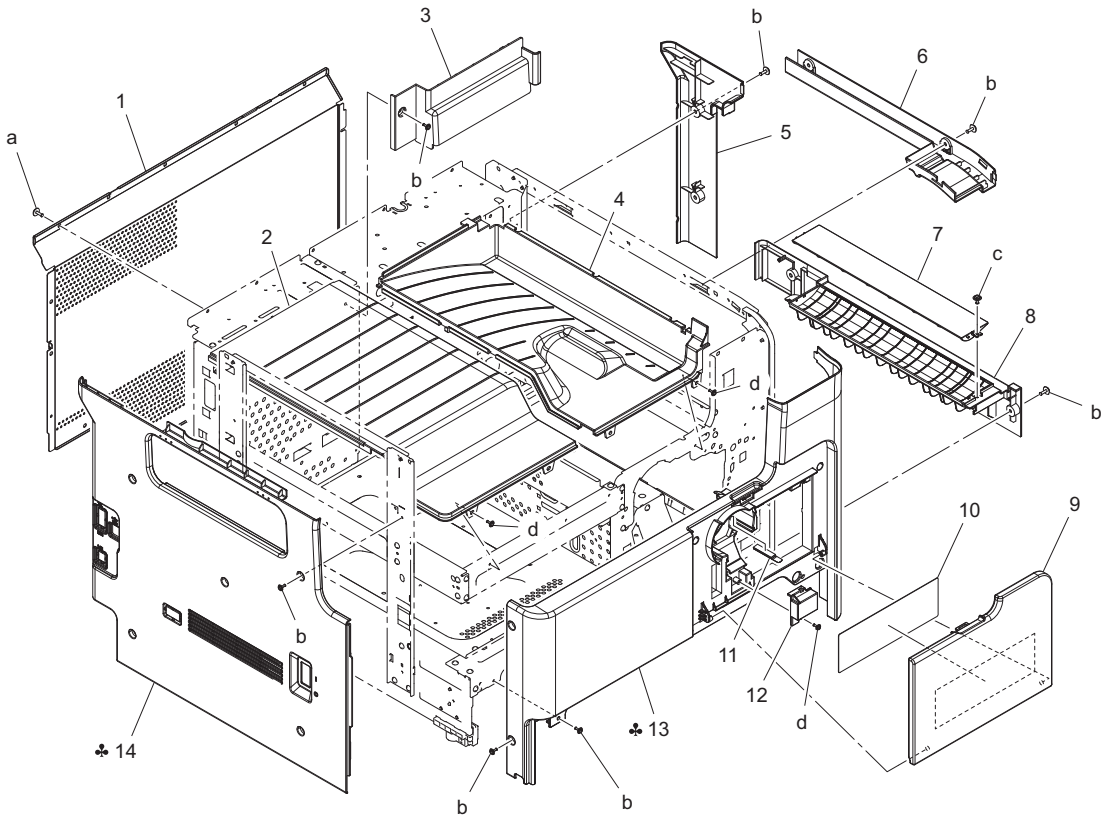
DIAGRAM OF MAIN PARTS SECTION



[1]	EXTERNAL PARTS	[2]	IR SECTION
[3]	CONTROL PANEL	[4]	FRAME SECTION
[5]	PRINT HEAD SECTION	[6]	PAPER TAKE-UP SECTION
[7]	HOPPER SECTION	[8]	CHARGE SECTION
[9]	DEVELOPING SECTION	[10]	PAPER TRANSPORT SECTION
[11]	PAPER EXIT SECTION	[12]	FUSING UNIT
[13]	DRIVE SECTION	[14]	ELECTRICAL COMPONENTS
[15]	CASSETTE SECTION	[16]	ORIGINAL COVER
[17]	MANUAL FEED TRAY	[18]	WIRING ACCESSORIES AND JIGS

1.1 EXTERNAL PARTS

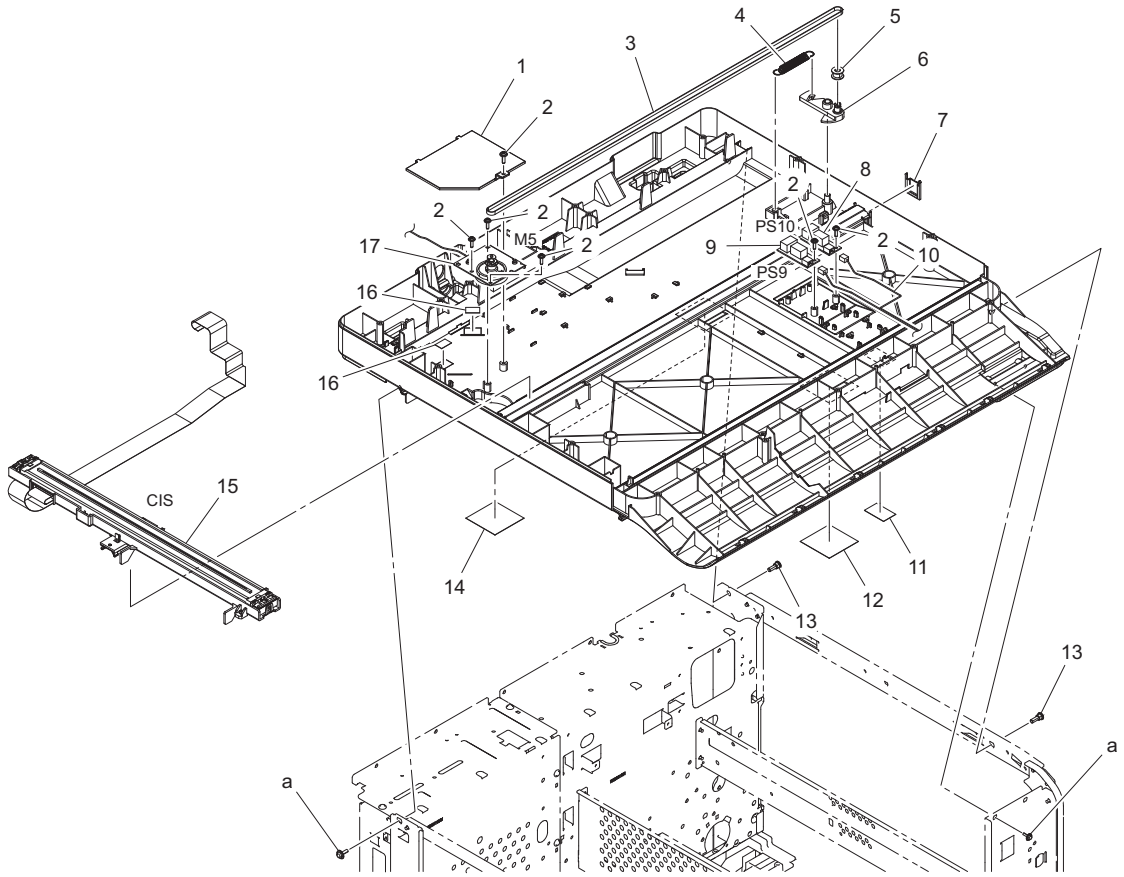
P 1



Page	Key	Parts No.	Description	Service Manual	Destinations	Class	Quantity
1	1	A3PEPP4T00	Rear Cover			D	1
1	2	A3PEPP4V00	Left Exit Tray			C	1
1	3	A3PEPP4W00	Cover			D	1
1	4	A3PEPP4U00	Right Exit Tray			C	1
1	5	A3PEPP5900	Right Rear Cover			C	1
1	6	A3PEPP5C00	Right Upper Cover		{bizhub 215/235/7721/7723}	C	1
1	6	A3PEPP5D00	Right Upper Cover		{bizhub 195/7719}	C	1
1	7	A3PEPP5B00	Right Lower Cover		{bizhub 215/235/7721/7723}	C	1
1	8	A3PEPP5A00	Right Lower Cover		{bizhub 215/235/7721/7723}	C	1
1	9	A3PEPP5500	Front Cover			C	1
1	10	A0XXPP5C01	Print Cover Panel			C	1
1	11	A0XXPP5J01	Spacer			C	1
1	12	A0XXPP5201	Cover			D	1
1	13	A3PEPP5000	Front Cover		B,D1,D3,E,F2,G1,G2,H,I,K	C	1
1	13	A3PEPP5100	Front Cover		C	C	1
1	13	A3PEPP5300	Front Cover		J	C	1
1	14	A3PEPP4X00	Left Cover		B,D1,D3,E,F2,G1,G2,H,I,J,K	C	1
1	14	A3PEPP4Y00	Left Cover		C	C	1
1	a	V137030603	screw			V	
1	b	V137030804	screw			V	
1	c	V153030804	screw			V	
1	d	V137030803	screw			V	

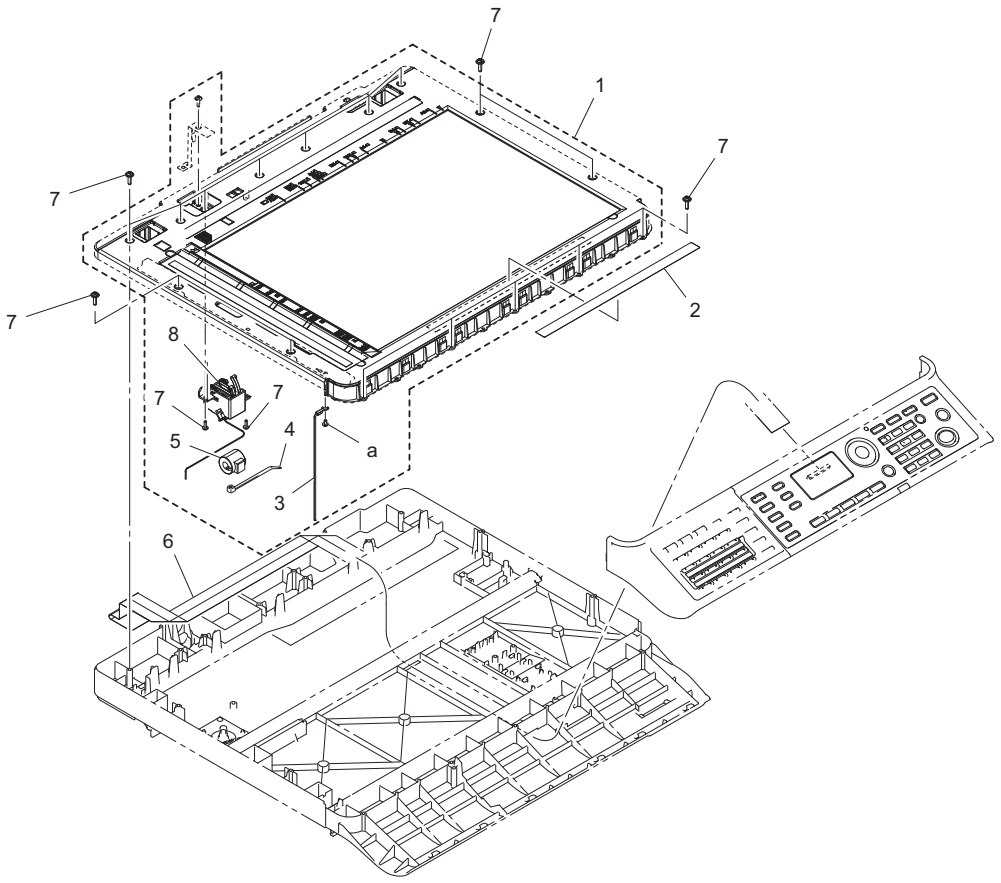
1.2 IR SECTION

P 2



Page	Key	Parts No.	Description	Service Manual	Destinations	Class	Quantity
2	1	A3PEPP0500	Holder			D	1
2	2	A3PEPP0800	Scew			C	6
2	3	A3PEPP0300	Timing Belt			C	1
2	4	A0XXPP1G00	Tension Spring			C	1
2	5	A0XXPP2C01	Pulley			C	1
2	6	A3PEPP0400	Holder			C	1
2	7	A3PEPP0C00	Cover			C	1
2	8	A3PEPP0600	Photoreflector	Original size sensor/2 (PS10)	(OPTION)	I	1
2	9	A3PEPP0600	Photoreflector	Original size sensor/1 (PS9)		I	1
2	10	A3PEPP0B01	WIRE HARNESS ASSY			D	1
2	11	A3PEPP0A00	Seal			C	1
2	12	A3PEPP0900	Seal			C	1
2	13	A0XXPP5U00	Shoulder Screw			C	2
2	14	A3PEPP6K00	Seal			C	1
2	15	A3PEPP0100	CIS Assy	CIS module (CIS)		C	1
2	16	A3PEPP0D00	Seal			C	2
2	17	A3PEPP0200	Motor Fix Assy	Scanner motor (M3)		C	1
2	a	V153030803	Screw			V	

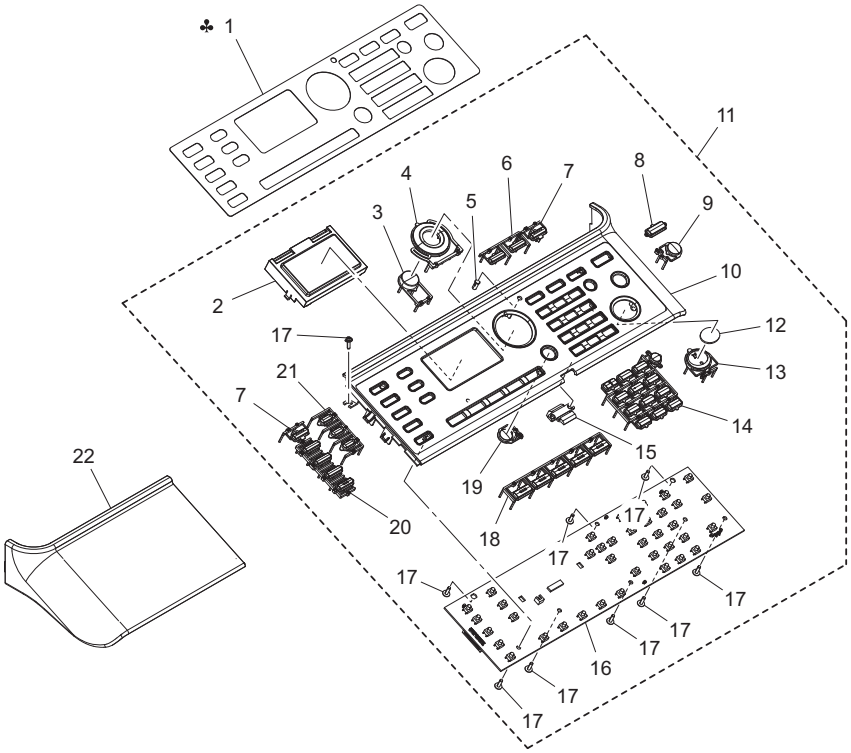
P 3



Page	Key	Parts No.	Description	Service Manual	Destinations	Class	Quantity
3	1	A3PEPP0F00	IR Cover Assy			C	1
3	2	A3PEPP0E00	Label Warning			C	1
3	3	A3PEPP0H01	Wire Harness Assy			D	1
3	4	A0HFPP1900	Cable Tie			D	1
3	5	A3PEPP7100	Ferrite Core			D	1
3	6	A3PEPP0000	FFC Panel			C	1
3	7	A3PEPP0800	Scew			C	18
3	8	A3PEPP0G00	Sensor Assy	Angle sensor (PS7) Original cover sensor (PS8)		I	1
3	a	V116030803	Screw			V	

1.3 CONTROL PANEL

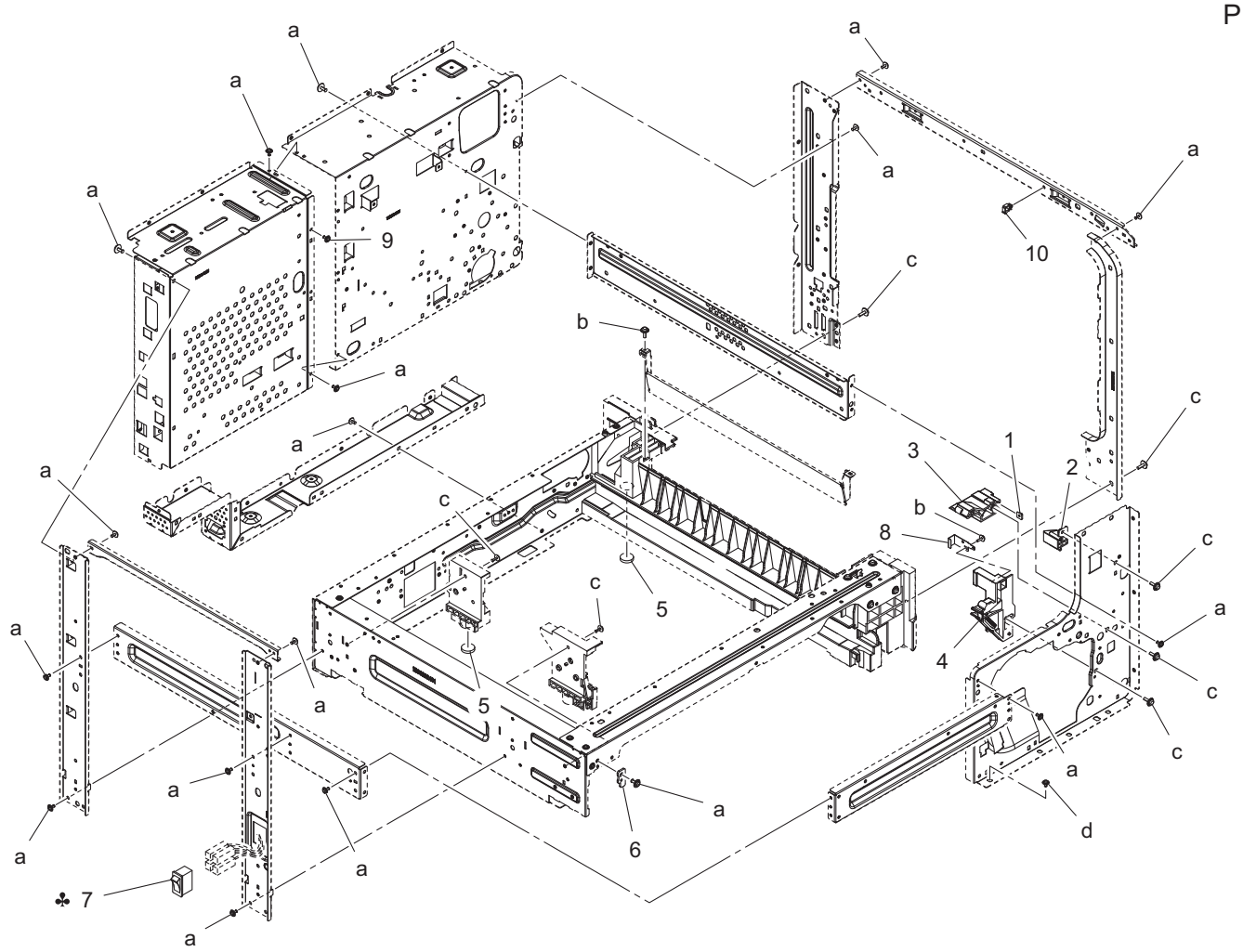
P 4



Page	Key	Parts No.	Description	Service Manual	Destinations	Class	Quantity
4	1	A3PEPP1300	Face Sheet (English)		B,C,D1,D3,E,F2,G1,G2,I,K	D	1
4	1	A3PEPP1400	Face Sheet (Simplified)		J	D	1
4	1	A3PEPP1500	Face Sheet (Traditional)		H	D	1
4	2	A3PEPP1700	LCD Assy			C	1
4	3	A3PEPP0R00	Print Select Key			D	1
4	4	A3PEPP0Q00	Print Arrow Key			D	1
4	5	A3PEPP1100	Cover			D	1
4	6	A3PEPP0P00	Mode Key			D	1
4	7	A3PEPP0N00	Interrupt Key			D	2
4	8	A3PEPP0M00	Reset Key			D	1
4	9	A3PEPP0U00	Print Stop Key			D	1
4	10	A3PEPP0K00	Control Panel			D	1
4	11	A3PEPP6E00	Control Panel Assy	Panel board		I	1
4	12	A3PEPP0V00	Print Start Key			D	1
4	13	A3PEPP0W00	Lens Start Key			D	1
4	14	A3PEPP0X00	Print Number Key			D	1
4	15	A3PEPP1200	Holder			D	1
4	16	A3PEPP1600	PW Board Assy			I	1
4	17	A3PEPP0800	Scew			C	9
4	18	A3PEPP1000	Print Copy Function Key 1			D	1
4	19	A3PEPP0Y00	Back Key			D	1
4	20	A3PEPP0T00	Copy Function Key 4			D	1
4	21	A3PEPP0S00	Copy Function Key 3			D	1
4	22	A3PEPP0J00	Cover			C	1

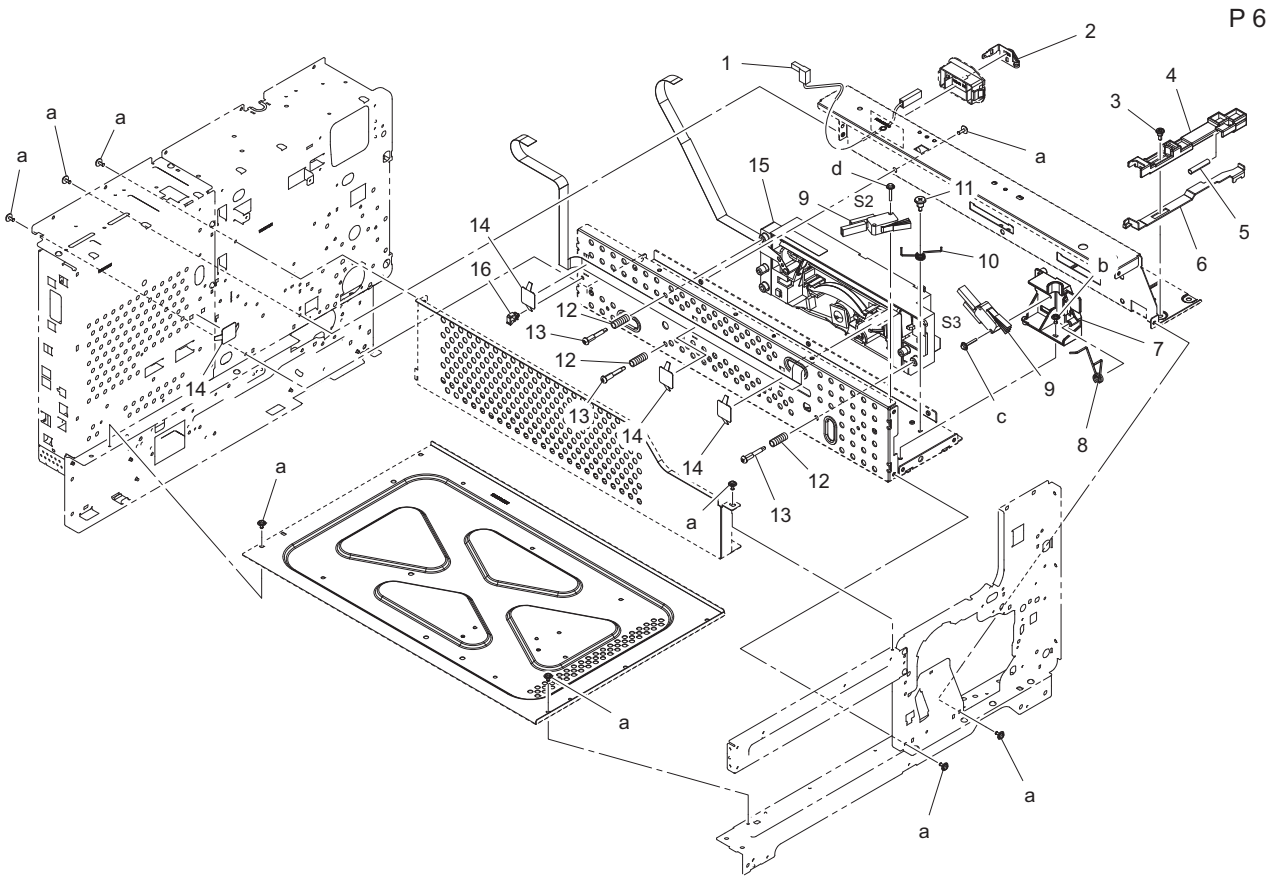
1.4 FRAME SECTION

P 5



Page	Key	Parts No.	Description	Service Manual	Destinations	Class	Quantity
5	1	4002504202	PLATE NUT			D	1
5	2	A3PEPP5H00	Holder			D	1
5	3	A3PEPP5J00	Holder			D	1
5	4	A3PEPP5G00	Holder			D	1
5	5	4128201901	RUBBER FOOT			D	2
5	6	4686330401	STOPPER			D	1
5	7	A3PEPP5E00	Main Switch	Power switch (S1)	C	C	1
5	7	A3PEPP5F00	Main Switch	Power switch (S1)	B,D1,D3,E,F2,G1,G2,H,I,J,K	C	1
5	8	A3PEPP5V00	Contact			C	1
5	9	A0FDPP8700	SCREW			C	1
5	10	A3PEPP6J00	Wiring Saddle			D	1
5	a	V137030603	screw			V	
5	b	V153030803	Screw			V	
5	c	V153041003	screw			V	
5	d	V144030603	Screw			V	

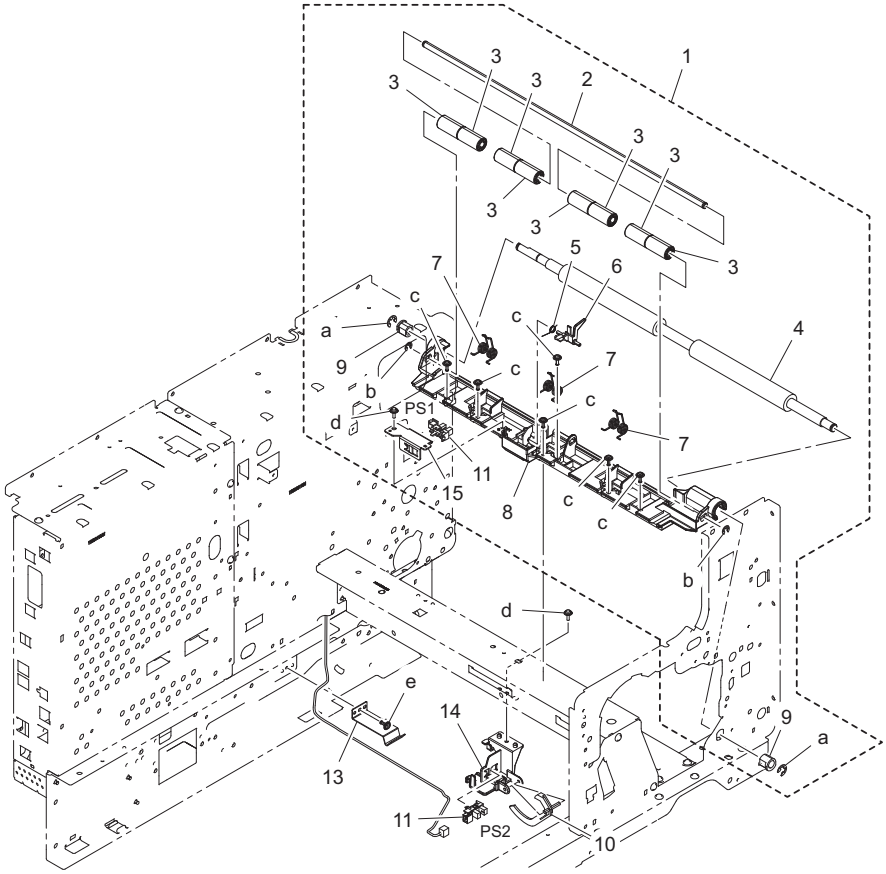
1.5 PRINT HEAD SECTION



Page	Key	Parts No.	Description	Service Manual	Destinations	Class	Quantity
6	1	A0XXPP0600	Wire Harness Assy			D	1
6	2	A0XXPP1700	Contact			C	1
6	3	A3PEPP6200	Screw			C	1
6	4	A3PEPP5X00	Arm			D	1
6	5	4034230501	PRESSURE SPRING			C	1
6	6	A3PEPP5Y00	Lever			D	1
6	7	A0XXPP4W01	Bracket			C	1
6	8	A0XXPP1R00	Torsion Spring			C	1
6	9	9J06M60100	MICRO SWITCH	Right door switch (S2) Front door switch (S3)		C	2
6	10	A3PEPP5W00	Torsion Spring			C	1
6	11	A3PEPP6100	Screw			C	1
6	12	A00J307000	Compressing Spring			C	3
6	13	A0XXPP5T00	Shoulder Screw			C	3
6	14	4034220501	SUPPORTER			D	4
6	15	A1XTR70100	PH Unit			I	1
6	16	A3PEPP6J00	Wiring Saddle			D	1
6	a	V137030603	screw			V	
6	b	V144030803	SCREW			V	
6	c	V149031603	Screw			V	
6	d	V116031603	Screw			V	

1.6 PAPER TAKE-UP SECTION

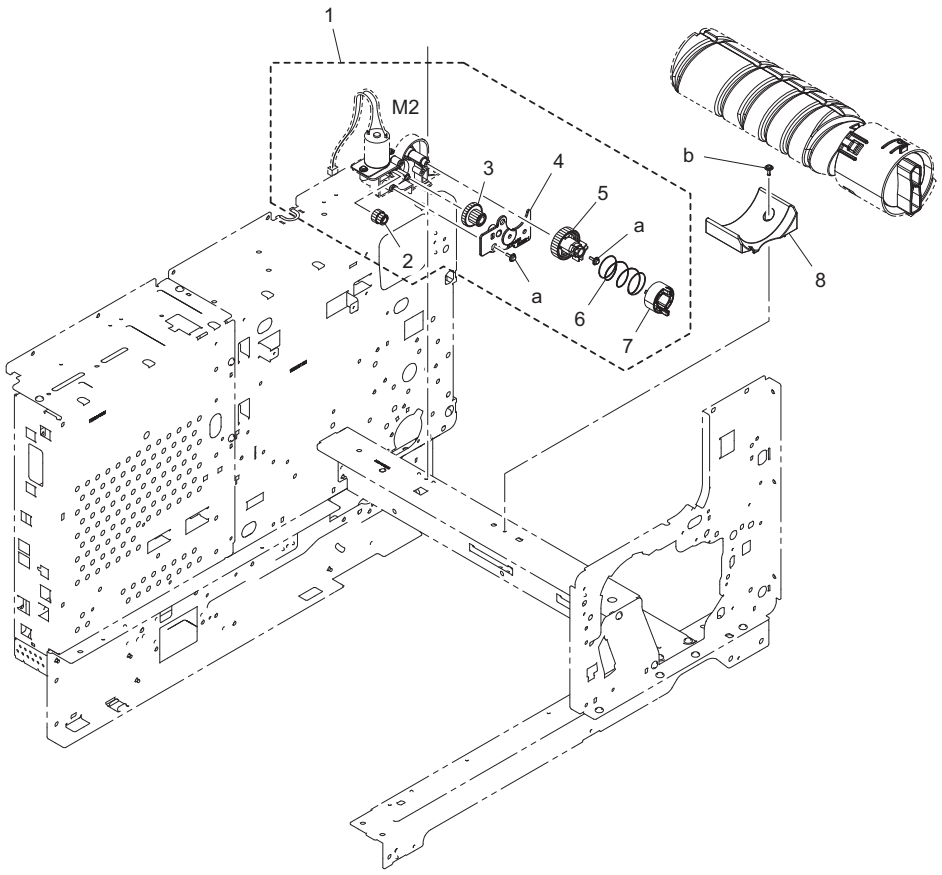
P 7



Page	Key	Parts No.	Description	Service Manual	Destinations	Class	Quantity
7	1	A3PEPP2Y00	Timing Roller Assy			S	1
7	2	A0XXPP2301	Shaft			D	1
7	3	A0XXPP3P00	Roller			C	8
7	4	A0XXPP5501	Roller			C	1
7	5	4034353401	TORSION SPRING			C	1
7	6	A0XXPP3N01	Actuator			C	1
7	7	A0XXPP0X01	Tension Spring			C	3
7	8	A3PEPP6G00	Timing Roller Holder Assy			C	1
7	9	4025357201	BUSHING			C	2
7	10	1164302701	ACTUATOR			C	1
7	11	A3PEPP1X00	Photointtrupter	Registration sensor (PS1) Tray1 empty sensor (PS2)		I	2
7	13	1164305401	PLATE SPRING			C	1
7	14	A0XXPP3G01	Holder			C	1
7	15	A0XXPP0W01	Bracket			C	1
7	a	V217060001	E Ring			V	
7	b	V217040001	E Ring			V	
7	c	V137030803	screw			V	
7	d	V153030803	Screw			V	
7	e	V137030603	screw			V	

1.7 HOPPER SECTION

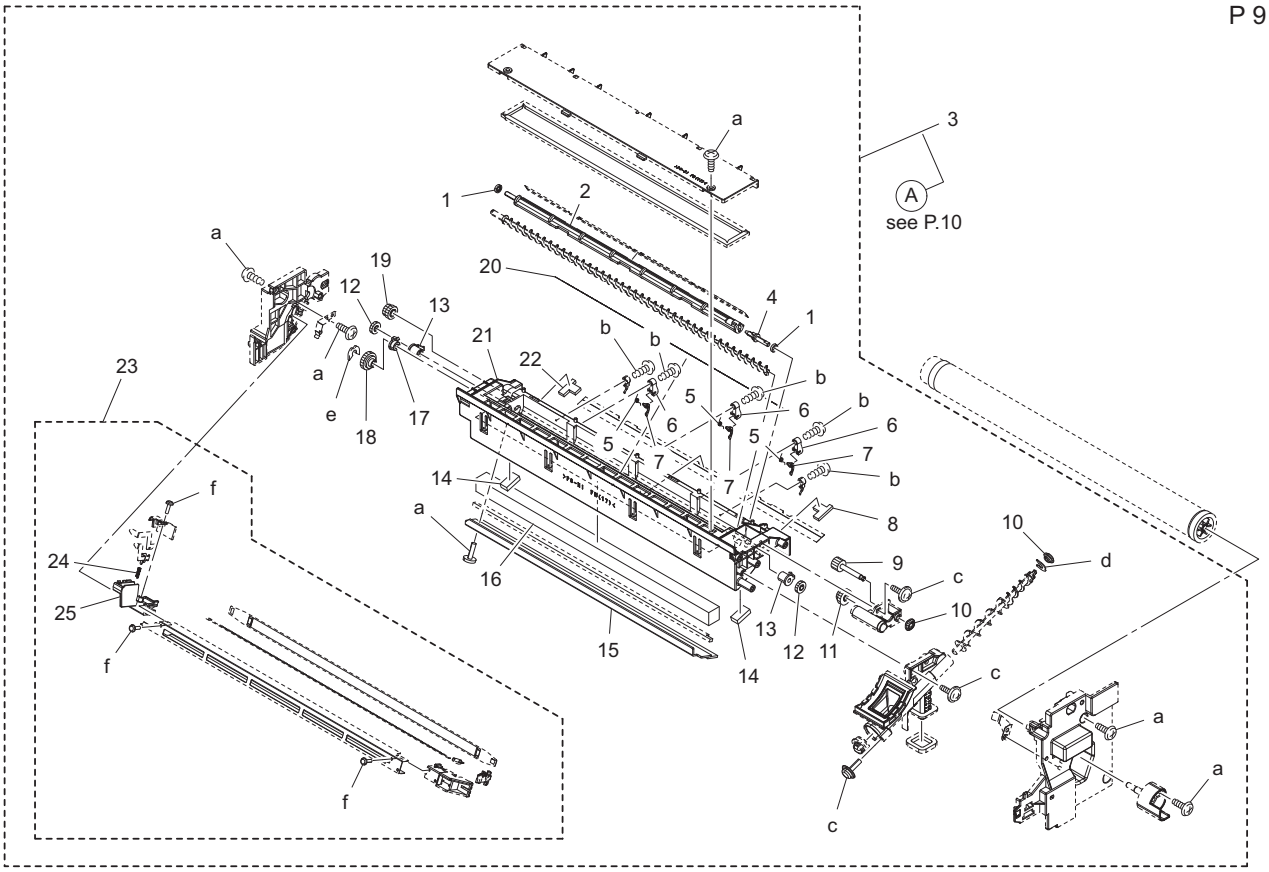
P 8



Page	Key	Parts No.	Description	Service Manual	Destinations	Class	Quantity
8	1	A3PEPP6F00	Hopper Drive Assy			C	1
8	2	A0XXPP3U01	Gear			C	1
8	3	A0XXPP3T01	Gear			C	1
8	4	A0XXPP3Q01	Cover			C	1
8	5	A0XXPP3S01	Gear			C	1
8	6	4038541202	PRESSURE SPRING			C	1
8	7	A0ED240700	Joint			C	1
8	8	A0XXPP3V01	Holder			C	1
8	a	V153030803	Screw			V	
8	b	V137030803	screw			V	

1.8 CHARGE SECTION

P 9

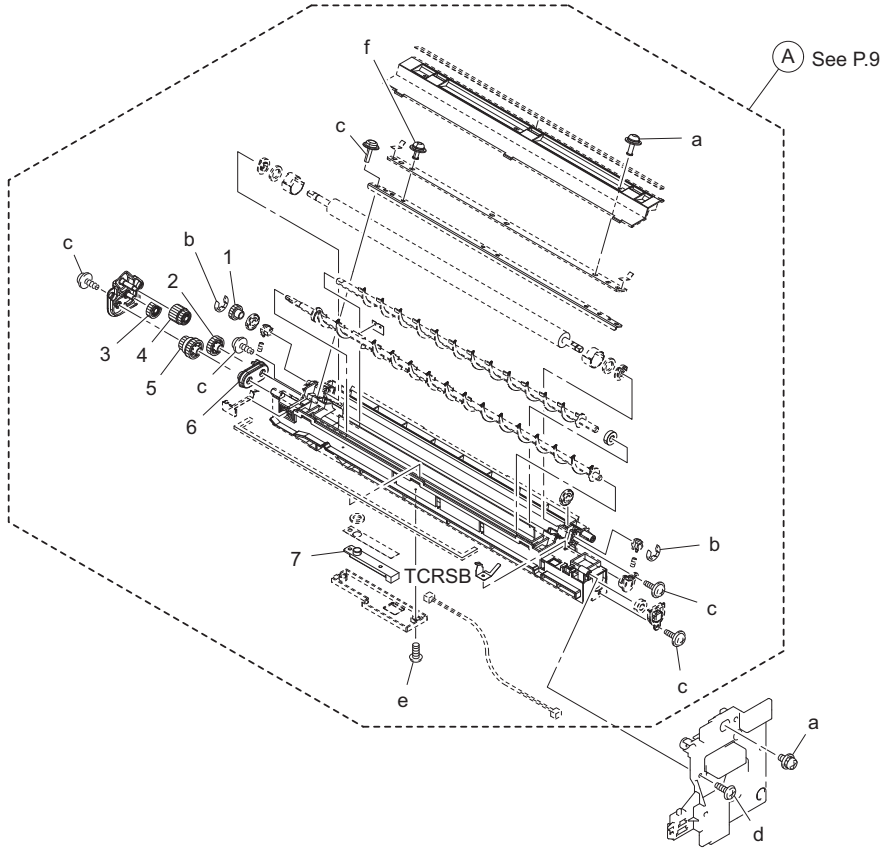


Page	Key	Parts No.	Description	Service Manual	Destinations	Class	Quantity
9	1	910550712	SEAL			C	2
9	2	4163560702	SCREW			C	1
9	3	A1XUR70000	IU After Assy			I	1
9	4	4021016602	SHAFT			D	1
9	5	4163407201	TORSION SPRING			C	3
9	6	4163436104	HOLDER			D	3
9	7	A0XX361100	Separating Claw			B	3
9	8	4163560503	SEAL			C	1
9	9	4021561601	GEAR 14T			C	1
9	10	4163563901	GEAR 14T			C	2
9	11	4021561501	GEAR 14/14T			C	1
9	12	4163560901	GEAR 14T			C	2
9	13	4163561101	BUSHING			C	2
9	14	4163560302	SEAL			C	2
9	15	A0XX361800	Cleaning Part			A	1
9	16	A0XX330100	Filter			C	1
9	17	4163562501	BUSHING			C	1
9	18	4021561901	GEAR 22T			C	1
9	19	4021561801	GEAR 14/16T			C	1
9	20	4163561701	SEAL			C	1
9	21	A0XX360200	Cleaning Housing			D	1
9	22	4163560403	SEAL			C	1
9	23	A1XUR70100	Drum Charge Unit			A	1
9	24	4021410801	SPRING			C	1
9	25	A0XX333201	Holder /Rear			C	1
9	a	V149030804	screw			V	
9	b	V166170404	screw			V	
9	c	V153030803	Screw			V	
9	d	V218060086	E ring			V	

9	e	V218030086	E ring			V	
9	f	V162020504	screw			V	

1.9 DEVELOPING SECTION

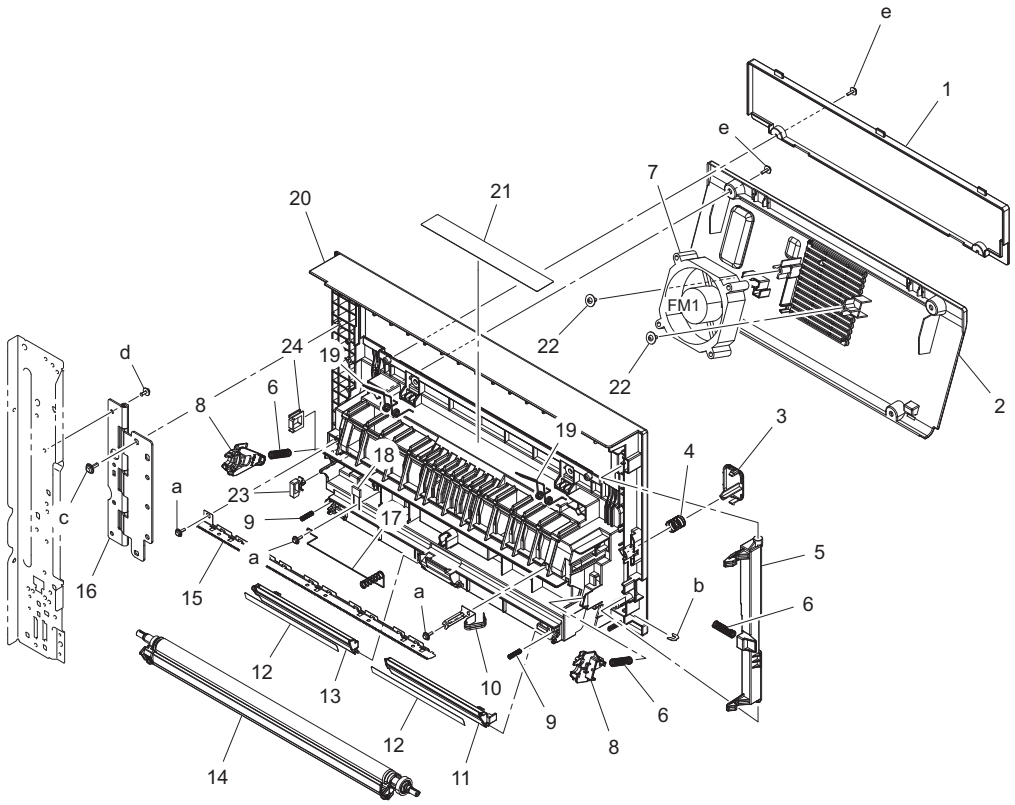
P 10



Page	Key	Parts No.	Description	Service Manual	Destinations	Class	Quantity
10	1	A0XX372200	Gear 16T			C	1
10	2	A0XX372500	Gear 21T			C	1
10	3	A0XX372300	Gear 18T			C	1
10	4	A0XX372100	Gear 15/18T			C	1
10	5	A0XX372400	Gear 15/22T			C	1
10	6	A0XX373600	Bushing			C	1
10	7	A1XUM50300	Magnetic sensor	TCR sensor board (TCRSB)		B	1
10	a	V116030803	Screw			V	
10	b	V217040001	E Ring			V	
10	c	V153030803	Screw			V	
10	d	V149030804	screw			V	
10	e	V162020504	screw			V	
10	f	V116030603	Screw			V	

1.10 PAPER TRANSPORT SECTION

P 11

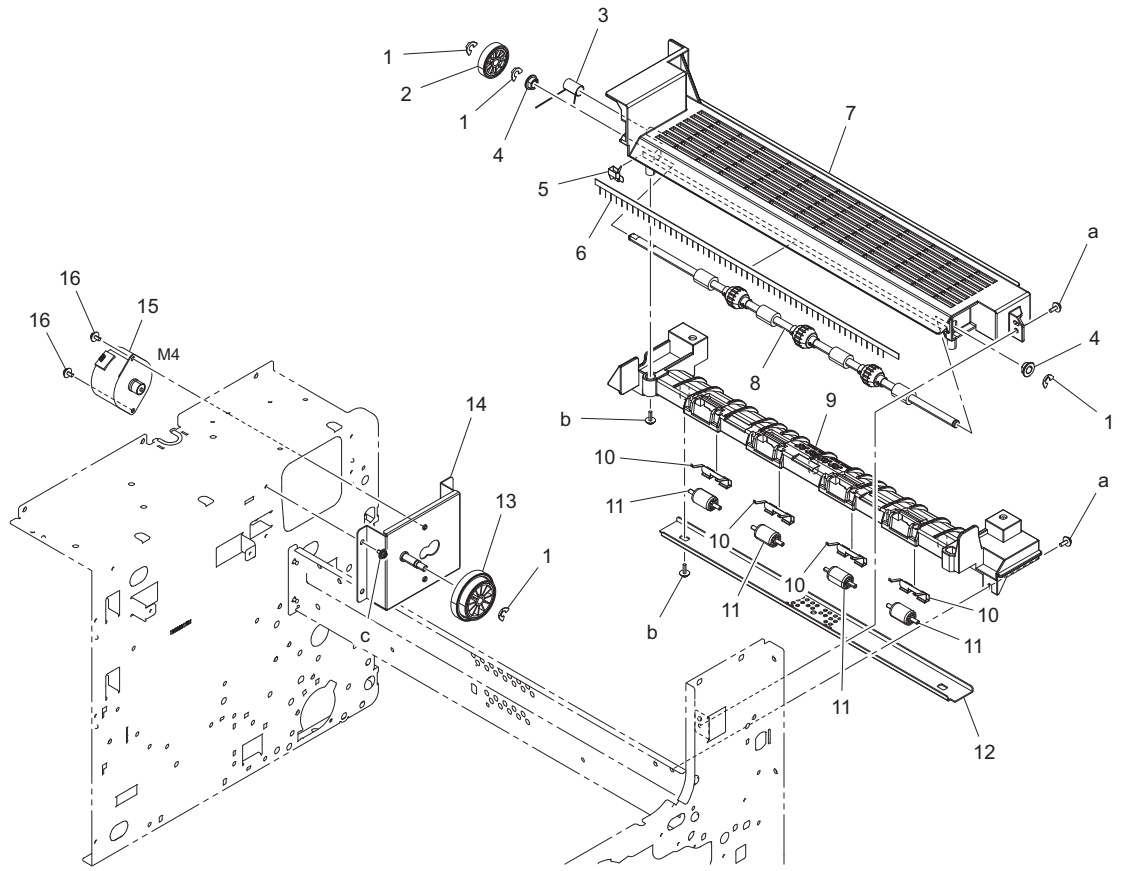


Page	Key	Parts No.	Description	Service Manual	Destinations	Class	Quantity
11	1	A3PEPP3300	Cover			C	1
11	2	A3PEPP3100	Cover			C	1
11	3	A3PEPP3400	Lever			C	1
11	4	A3PEPP3900	Pressure Spring			C	1
11	5	A3PEPP3700	Lever			C	1
11	6	A0XXPP1V01	Pressure Spring			C	3
11	7	9J03M10000	FAN MOTOR	Fusing cooling fan motor (FM1)		B	1
11	8	A0XXPP3H01	Bushing			C	2
11	9	A0XXPP1X01	Pressure Spring			C	2
11	10	A3PEPP3600	Contact			C	1
11	11	A0XXPP5002	Guide			C	1
11	12	A0XXPP5M01	Guide			C	2
11	13	A0XXPP5102	Guide			C	1
11	14	A0XXPP6H01	Transfer Roller Assy			C	1
11	15	A0XXPP0S00	Neutralizing Needle			C	1
11	16	A3PEPP3500	Hinge			C	1
11	17	A0XXPP0U00	Contact			C	1
11	18	A3PEPP6H00	Resistor			C	1
11	19	A3PEPP3800	Torsion Spring			C	2
11	20	A3PEPP3200	Frame			D	1
11	21	A3PEPP3D00	Label Jam Remove			C	1
11	22	4163529301	SCREW			C	2
11	23	A3PEPP3B00	Saddle			D	1
11	24	A3PEPP3C00	Saddle			D	1
11	a	V153030803	Screw			V	
11	b	V218040086	E ring			V	
11	c	V153041003	screw			V	
11	d	V116030803	Screw			V	

11	e	V153030804	screw			V	

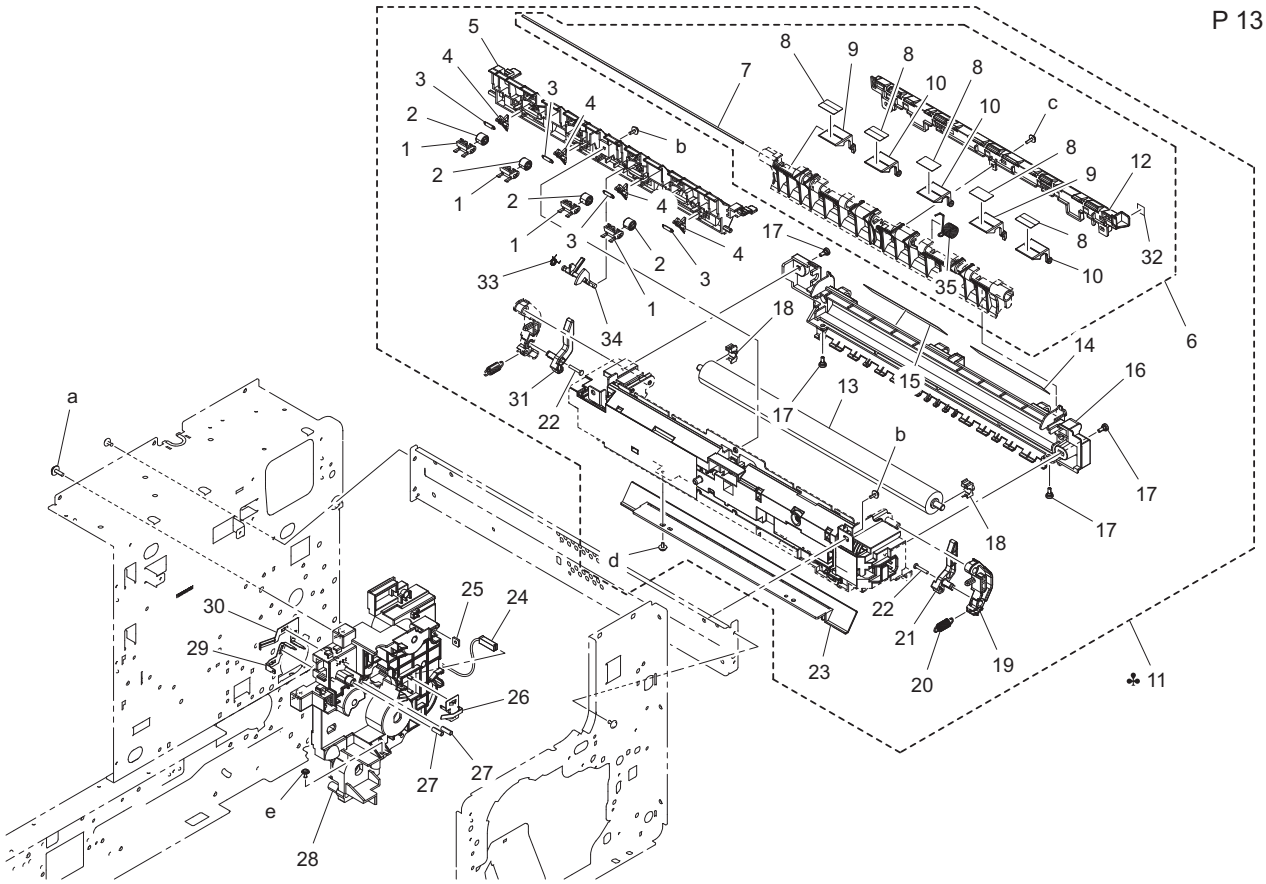
1.11 PAPER EXIT SECTION

P 12



Page	Key	Parts No.	Description	Service Manual	Destinations	Class	Quantity
12	1	A3PEPP3U00	E ring			C	4
12	2	A3PEPP3P00	Gear 26T			C	1
12	3	A3PEPP3R00	Torsion Spring			C	1
12	4	A3PEPP3N00	Bush			C	2
12	5	A3PEPP3T00	Contact			C	1
12	6	A3PEPP3M00	Neutralizing Brush			C	1
12	7	A3PEPP3E00	Cover			C	1
12	8	A3PEPP3F00	Roller			C	1
12	9	A3PEPP3G00	Frame			D	1
12	10	A3PEPP6R00	Holder			C	4
12	11	4021580201	ROLL			C	4
12	12	A3PEPP3S00	Bracket			D	1
12	13	A3PEPP3K00	Gear			C	1
12	14	A3PEPP3J00	Bracket			D	1
12	15	A3PEPP3H00	Motor	Switchback motor (M4)		C	1
12	16	A0FDPP8700	SCREW			C	2
12	a	V116030803	Screw			V	
12	b	V153030803	Screw			V	
12	c	V116030603	Screw			V	

1.12 FUSING UNIT

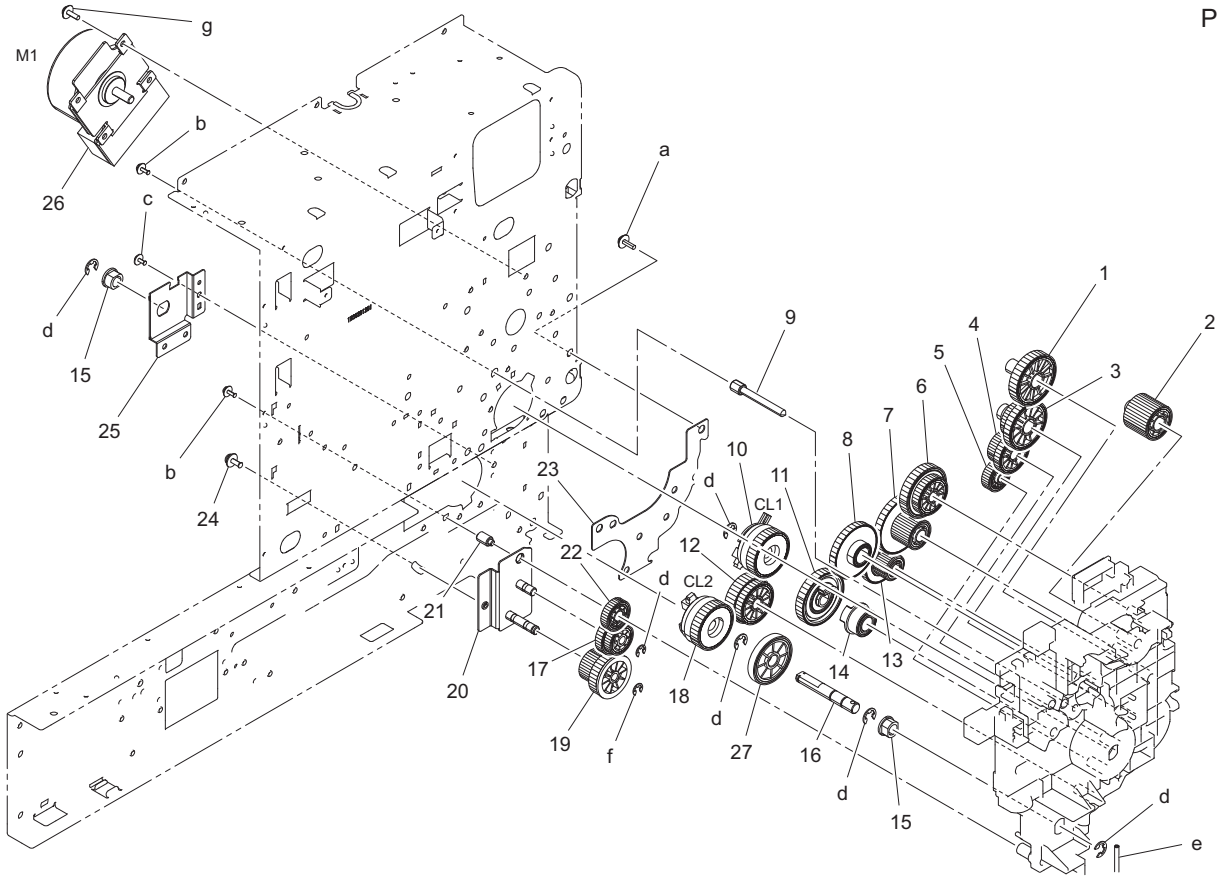


Page	Key	Parts No.	Description	Service Manual	Destinations	Class	Quantity
13	1	A3PEPP4900	Holder			C	4
13	2	A3PEPP4800	Roll			C	4
13	3	4034578701	TENSION SPRING			C	4
13	4	4021572002	SEPARATOR			A	4
13	5	A3PEPP4400	Guide			D	1
13	6	A3PEPP4D00	Jam Remove Assy			C	1
13	7	4034578601	SHAFT			D	1
13	8	4011585801	SEAL			C	5
13	9	4034578501	GUIDE			D	2
13	10	4034578401	GUIDE			D	3
13	11	A3PEPP3V00	Fusing Unit (230V)		C,D1,D3,E,F2,G1,I,J,K	A	1
13	11	A3PEPP3W00	Fusing Unit (120V)		B,G2	A	1
13	11	A3PEPP3X00	Fusing Unit (110V)		H	A	1
13	12	A3PEPP4500	Cover			C	1
13	13	A3PEPP4300	Fusing Roller			C	1
13	14	A3PEPP4A00	Label Warning			C	1
13	15	A3PEPP4B00	Label Warning			C	1
13	16	A3PEPP3Y00	Cover			C	1
13	17	4036576501	SHOULDER SCREW			C	4
13	18	4034571101	BUSHING			C	2
13	19	A3PEPP4200	Lever			C	1
13	20	4021572712	TENSION SPRING			C	1
13	21	A3PEPP4000	Lever			C	1
13	22	A3PEPP4C00	Shoulder Screw			C	2
13	23	A3PEPP4700	Guide			D	1
13	24	A3PEPP4S01	Wire Harness Assy			D	1
13	25	4002504202	PLATE NUT			D	1
13	26	A0XXPP1401	Contact			D	1
13	27	4021210101	PRESSURE SPRING			C	2

13	28	A3PEPP4G00	Holder			C	1
13	29	A0XXPP1601	Contact			D	1
13	30	A0XXPP1501	Contact			D	1
13	31	A3PEPP4100	Lever			C	1
13	32	A3PEPP4600	Label			C	1
13	33	4034572301	TORSION SPRING			C	1
13	34	4034572201	ACTUATOR			D	1
13	35	4034571501	TORSION SPRING			C	1
13	a	V153041003	screw			V	
13	b	V116031003	Screw			V	
13	c	V153030803	Screw			V	
13	d	V116030603	Screw			V	
13	e	V137030603	screw			V	

1.13 DRIVE SECTION

P 14

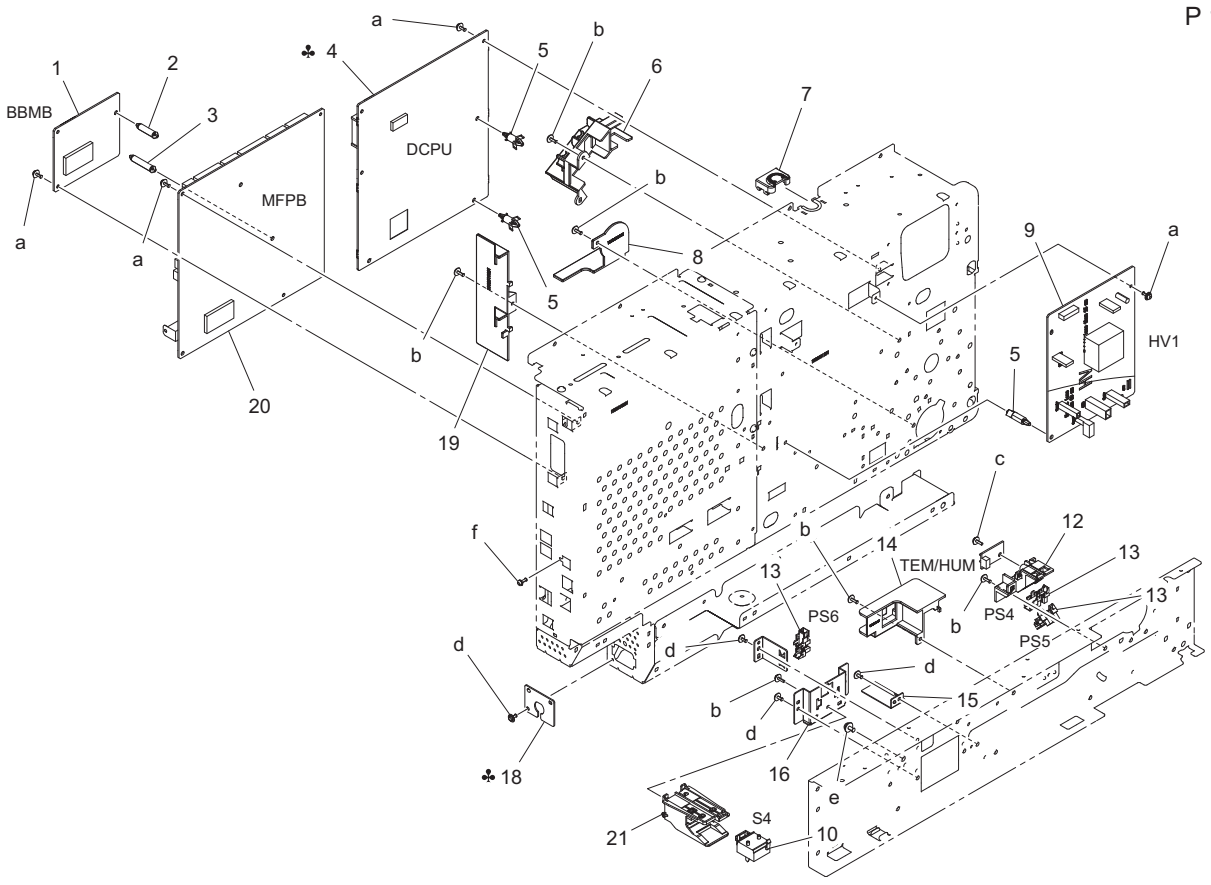


Page	Key	Parts No.	Description	Service Manual	Destinations	Class	Quantity
14	1	A0XXPP3501	Gear			C	1
14	2	A0XXPP3401	Gear			C	1
14	3	A0XXPP3601	Gear			C	1
14	4	A0XXPP3701	Gear			C	1
14	5	A0XXPP3201	Gear			C	1
14	6	A0XXPP3301	Gear			C	1
14	7	A0XXPP3101	Gear			C	1
14	8	A0XXPP2W01	Gear			C	1
14	9	A3PEPP4H00	Shaft			D	1
14	10	A3PEPP4F00	Cluch	Registration clutch (CL1)		C	1
14	11	A0XXPP2Y01	Gear			C	1
14	12	A3PEPP6T00	Gear			C	1
14	13	A0XXPP2X01	Gear			C	1
14	14	A0XXPP3001	Gear			C	1
14	15	4021254702	BUSHING			C	2

14	16	A3PEPP6S00	Shaft			C	1
14	17	A3PEPP6W00	Gear 21/26T			C	1
14	18	A3PEPP6Y00	Cluch	Tray1 paper feed clutch (CL2)		C	1
14	19	A3PEPP6X00	Gear 21/30T			C	1
14	20	A3PEPP4J00	Bracket			D	1
14	21	A3PEPP4Q00	Shaft			D	1
14	22	A3PEPP6V00	Gear 21T			C	1
14	23	A3PEPP4E00	Bracket			D	1
14	24	A3PEPP4P00	Screw			C	1
14	25	A3PEPP6U00	Bracket			D	1
14	26	A3PEPP4R00	Motor	Main motor (M1)		C	1
14	27	A3PEPP7000	Gear 33T			C	1
14	a	V153041003	screw			V	
14	b	V116030803	Screw			V	
14	c	V137030603	screw			V	
14	d	V217060001	E Ring			V	
14	e	V232302209	pin			V	
14	f	V217040001	E Ring			V	
14	g	V116030603	Screw			V	

1.14 ELECTRICAL COMPONENTS

P 15

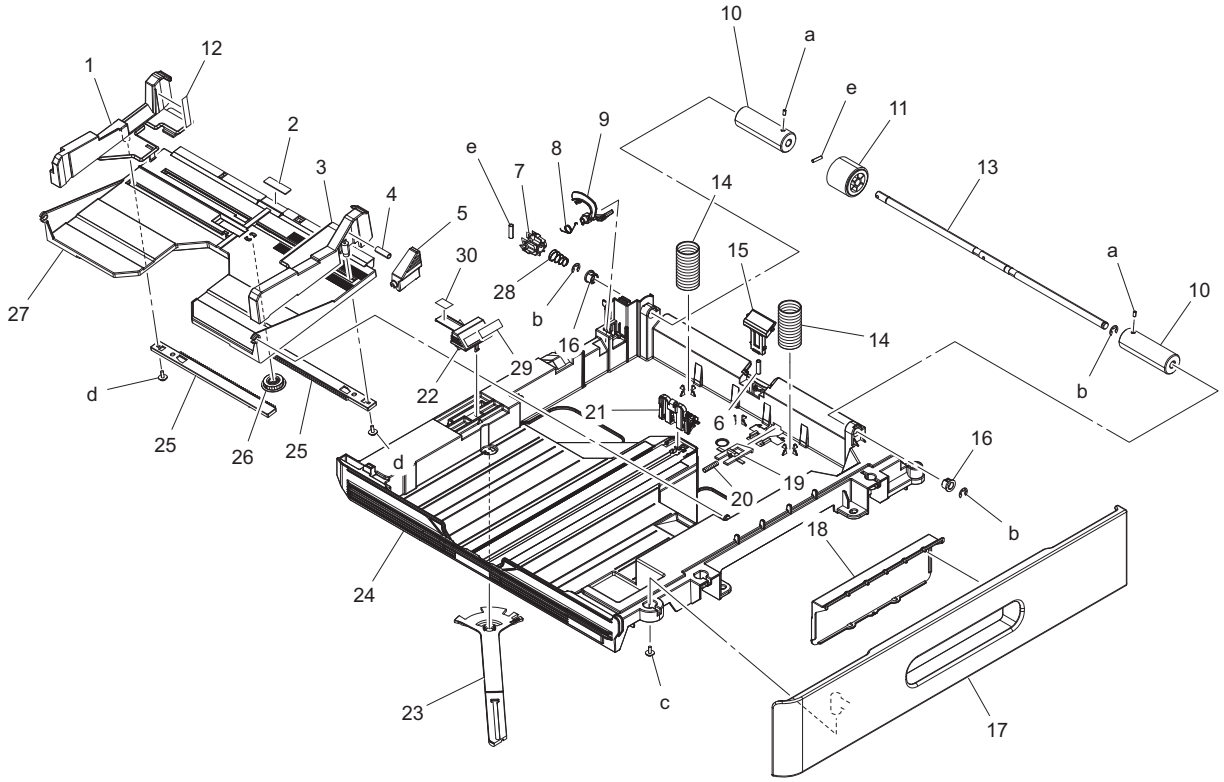


Page	Key	Parts No.	Description	Service Manual	Destinations	Class	Quantity
15	1	A3PEPP6600	PW Board Assy BB/M	BB module board (BBMB)		I	1
15	2	A3PEPP6A00	PWB Support			D	1
15	3	A3PEPP6C00	PWB Support			D	1
15	4	A3PEPP6700	PW Board Assy LV (200V)	DC power supply (DCPU)	C,D1,D3,E,F2,G1,I,J,K	I	1
15	4	A3PEPP6801	PW Board Assy LV (100V)	DC power supply (DCPU)	B,G2,H	I	1
15	5	A3PEPP6900	PWB Support			D	3
15	6	A3PEPP5K00	Holder			D	1
15	7	A3PEPP6000	Cover			D	1
15	8	A3PEPP5N00	Cover			D	1

15	9	A3PEPP6300	HV Transformer	High voltage unit (HV1)		I	1
15	10	A3PEPP2T00	Switch	Paper size detect switch (S4)		C	1
15	12	A3PEPP5P00	Holder			D	1
15	13	A3PEPP1X00	Photointtrupter	Paper size sensor (PS5) Inch/metric sensor (PS6)		I	3
15	14	A3PEPP5Q00	Holder			D	1
15	15	A3PEPP5S00	Bracket			D	1
15	16	A3PEPP5R00	Bracket			D	1
15	18	A0XXPP1S00	Bracket		J	D	1
15	18	A3PEPP5T00	Bracket		B	D	1
15	18	A3PEPP5U00	Bracket		H	D	1
15	19	A3PEPP5M00	Bracket			D	1
15	20	A3PEPP6400	PW Board Assy CC/MM 21PPM	MFP board (MFPB)	{bizhub 215/235/7721/7723}	I	1
15	20	A3PEPP6500	PW Board Assy CC/MM 19PPM		{bizhub 195/7719}	I	1
15	21	A3PEPP2S00	Holder			D	1
15	a	V116030803	Screw			V	
15	b	V137030803	screw			V	
15	c	V153030803	Screw			V	
15	d	V137030603	screw			V	
15	e	V116040603	Screw			V	
15	f	V115030803	Screw			V	

1.15 CASSETTE SECTION

P 16

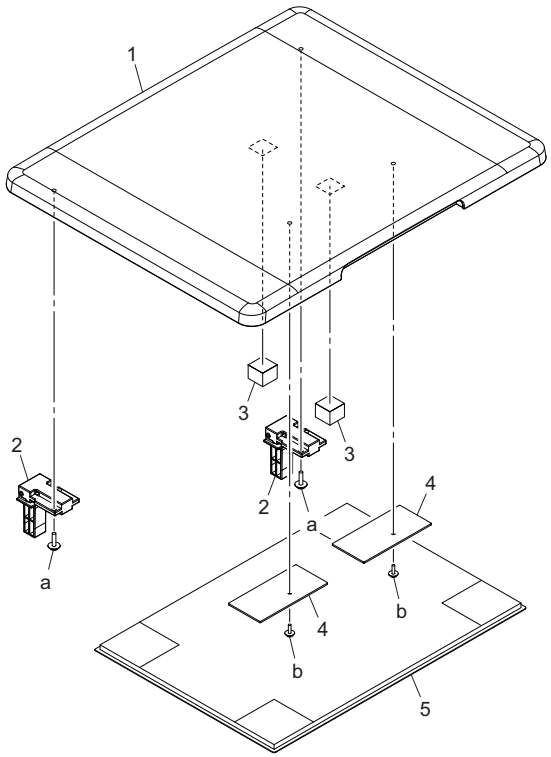


Page	Key	Parts No.	Description	Service Manual	Destinations	Class	Quantity
16	1	A02F621200	Regulating plate			C	1
16	2	A0XXPP7900	Friction Sheet			C	1
16	3	A02F621101	Regulating Plate			C	1
16	4	4038560100	PRESSURE SPRING			C	1
16	5	4037321001	LEVER			C	1

16	6	A0XXPP0R01	Pressure Spring			C	1
16	7	1164300403	PAWL			C	1
16	8	A3PEPP2V00	Torsion Spring			C	1
16	9	A3PEPP2U00	Lever			C	1
16	10	A3PEPP2P00	Weight			C	2
16	11	A0XX560200	Paper feed Roller			C	1
16	12	A02F944100	Label Level			C	1
16	13	A0XXPP2101	Shaft			C	1
16	14	A0XXPP7A00	Pressure Spring			C	2
16	15	A0XXPP6E01	Separator Assy			C	1
16	16	A0XXPP3A01	Bushing			C	2
16	17	A3PEPP2X00	Front Cover			C	1
16	18	A0XXPP3E00	Handle			C	1
16	19	1164306101	LEVER			C	1
16	20	1164306201	PRESSURE SPRING			C	1
16	21	A3PEPP2Q00	Regulating Plate			C	1
16	22	A3PEPP2W00	Lever			C	1
16	23	A3PEPP2R00	Lever			C	1
16	24	A3PEPP2N00	Cassette			D	1
16	25	A02F623200	Rack			C	2
16	26	1164304501	GEAR 20T			C	1
16	27	A0XXPP3B01	Lifting Plate			C	1
16	28	A02F625400	Pressure Spring			C	1
16	29	A3PEPP6N00	Label Metric/Inch			C	1
16	30	A3PEPP6P00	Mylar			C	1
16	a	V192040609	screw			V	
16	b	V217060001	E Ring			V	
16	c	V153041003	screw			V	
16	d	V153031203	screw			V	
16	e	V231301450	pin			V	2

1.16 ORIGINAL COVER

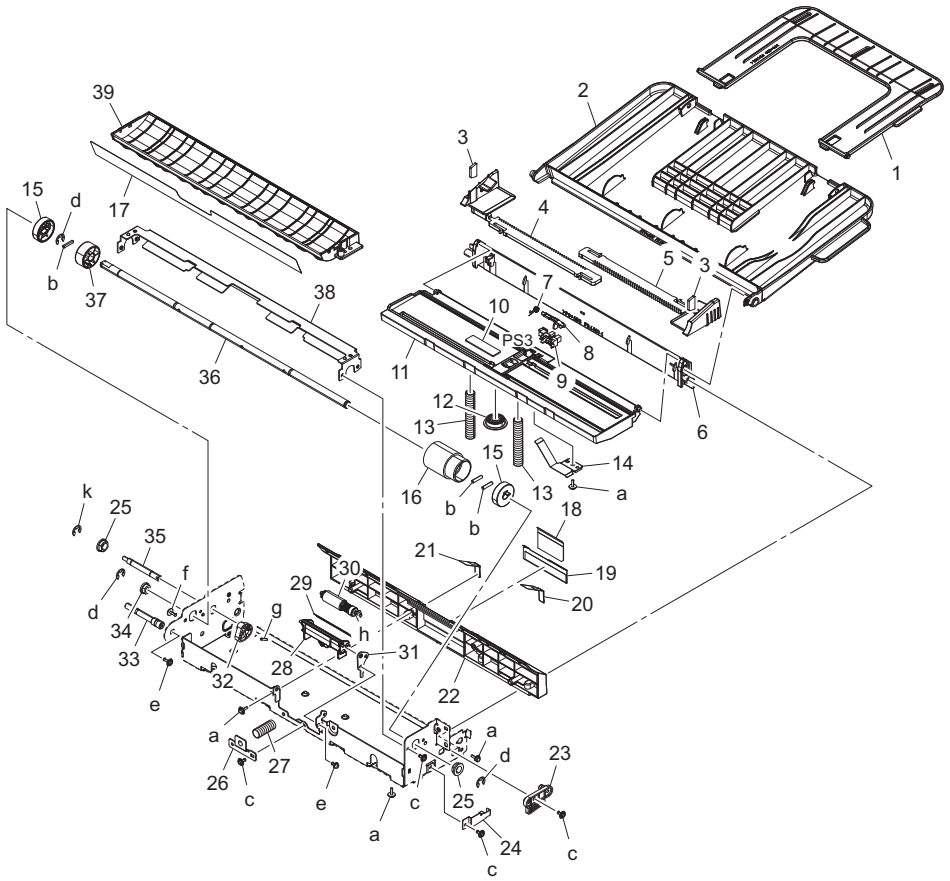
P 17



Page	Key	Parts No.	Description	Service Manual	Destinations	Class	Quantity
17	1	A0XXPP4N00	Original Cover			C	1
17	2	A4M4PP1000	Hinge			C	2
17	3	A4M4PP1300	Sponge			D	2
17	4	A4M4PP1200	Reinforce Plate			D	2
17	5	A0XXPP5P02	Pad			C	1
17	a	V153041204	screw			V	
17	b	V153030803	Screw			V	

1.17 MANUAL FEED TRAY

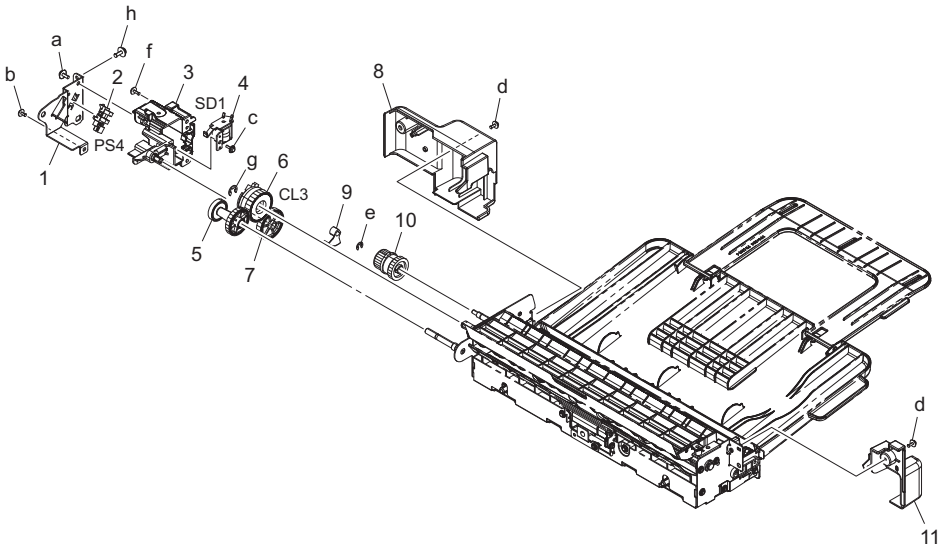
P 18



Page	Key	Parts No.	Description	Service Manual	Destinations	Class	Quantity
18	1	A0XXPP4A01	Tray			C	1
18	2	A0XXPP4902	Tray			C	1
18	3	4038328601	BRAKE			C	2
18	4	A0XXPP4D00	Regulating Plate			C	1
18	5	A0XXPP4C00	Regulating Plate			C	1
18	6	A0XXPP1N00	Holder			D	1
18	7	A0XXPP1D01	Torsion Spring			C	1
18	8	A0XXPP4M01	Actuator			C	1
18	9	A3PEPP1X00	Photointtrupter	Exit sensor (PS3)		I	1
18	10	4687328101	FRICTION SHEET			C	1
18	11	A0XXPP4B01	Guide			C	1
18	12	A0XXPP4E01	Gear			C	1
18	13	A0XXPP1T00	Pressure Spring			C	2
18	14	4038325501	BRAKE			D	1
18	15	A0XXPP6S00	Collar			C	2
18	16	A0XX594700	Paper feed Roller			C	1
18	17	A3PHPP1500	Seal			D	1
18	18	4030340301	GUIDE			C	1
18	19	4030340201	GUIDE PLATE			C	1

18	20	4038326802	GUIDE			C	1
18	21	4038326902	GUIDE			C	1
18	22	A3PHPP1200	Guide			D	1
18	23	4038321501	HOLD PLATE			D	1
18	24	4039328201	PLATE SPRING			D	1
18	25	4131353202	BUSHING			C	2
18	26	A0XXPP1W01	Holder			D	1
18	27	4030347501	PRESSURE SPRING			C	1
18	28	A0XXPP4V00	Holder			C	1
18	29	A0XXPP6T00	Guide			C	1
18	30	4034015101	SEPARATION ROLLER			A	1
18	31	A3PHPP1700	Adjust Plate			D	1
18	32	4038323601	CAM			C	1
18	33	A0XXPP2601	Shaft			D	1
18	34	4030309301	BUSHING			C	1
18	35	A0XXPP2501	Shaft			D	1
18	36	A0XXPP2401	Shaft			C	1
18	37	A0XXPP5700	Collar			C	1
18	38	A3PHPP1300	Bracket			D	1
18	39	A3PHPP1400	Guide			D	1
18	a	V153030803	Screw			V	
18	b	V231301450	pin			V	
18	c	V137030603	screw			V	
18	d	V217060001	E Ring			V	
18	e	V116030803	Screw			V	
18	f	V137030803	screw			V	
18	g	V231201050	pin			V	
18	h	V218030086	E ring			V	
18	k	V217040001	E Ring			V	

P 19

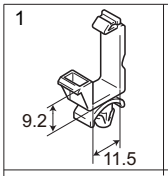
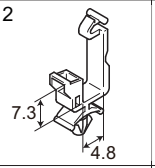
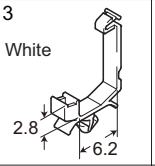
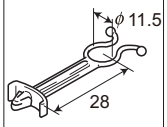
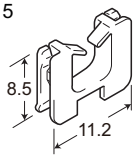


Page	Key	Parts No.	Description	Service Manual	Destinations	Class	Quantity
19	1	A3PHPP1601	Frame			D	1

19	2	A3PEPP1X00	Photointtrupter			I	1
19	3	A0XXPP4G01	Holder			C	1
19	4	9J06M20000	SOLENOID	Tray set sensor (PS4)		C	1
19	5	A0XXPP4K01	Gear			C	1
19	6	A3PEPP4F00	Cluch			C	1
19	7	A0XXPP4H01	Gear			C	1
19	8	A3PHPP1900	Rear Cover			D	1
19	9	A0XXPP4J01	Lever			C	1
19	10	4038326001	CLUTCH ASSY			C	1
19	11	A3PHPP1800	Front Cover			D	1
19	a	V153040803	screw			V	
19	b	V137030603	screw			V	
19	c	V153030803	Screw			V	
19	d	V116030804	Screw			V	
19	e	V217040001	E Ring			V	
19	f	V137030803	screw			V	
19	g	V217060001	E Ring			V	
19	h	V116030803	Screw			V	

1.18 WIRING ACCESSORIES AND JIGS

P 20

1 							
2 							
3 							
4 							
5 							

Page	Key	Parts No.	Description	Service Manual	Destinations	Class	Quantity
20	1	V500010005	saddle			D	
20	2	V500010020	Saddle			D	
20	3	V500010046	saddle			D	
20	4	V500020042	locker			D	
20	5	V570010021	Saddle			D	

1.19 MAINTENANCE LIST

- The items with no Page/Key numbers are not handled as spare parts.

No.	Section	PM Parts Description	Maintenance Cycle (K=1,000)	Parts No.	Destinations	Page/Key	Note

			QTY	Replace				
1	Processing section	Developer	1	55K	-		P9-15	
2		Drum	1	55K	-		P9-23	
3		Cleaning blade	1	55K	A0XX361800		P9-3	
4		Drum charge corona assy	1	55K	A1XUR70100			
5		Toner bottle (TN119) *1	1	5.4K	-			
6			1	12K	-			
7		Toner bottle (TN118) Toner bottle (TN119H) *1	1	12K	-			
8		Imaging unit	1	165K	A1XUR70000			
9	Fusing section	Fusing unit	1	165K	A3PEPP3V00	220-240V	P13-11	*2
10		Fusing unit	1	165K	A3PEPP3X00	110V	P13-11	*2
11		Fusing unit	1	165K	A3PEPP3W00	120-127V	P13-11	*2
12	Paper feed section	Feed roller	1	165K	A0XX560200		P16-11	
13		Separation pad	1	165K	A0XXPP6E01		P16-15	
14	Conveyance section	Transfer roller unit	1	165K	A0XXPP6H01		P11-14	
15	Manual feed tray	Feed roller	1	165K	A0XX594700		P18-16	
16		Separation roller	1	165K	4034015101		P18-30	

- *1:Only for China
- *2: Actual durable cycle (PM counter value)

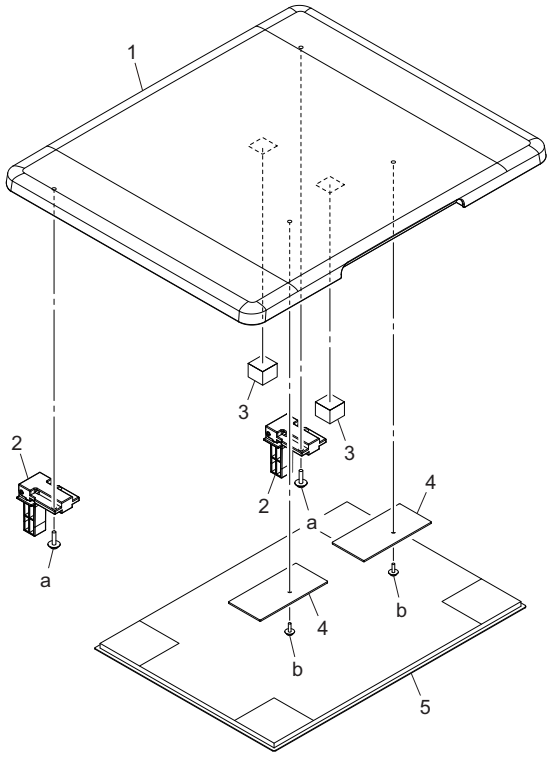
1.20 DESTINATION

Destination No.		Destinations		V	Hz	Model No.
A	A1	JAPAN				
	A2	JAPAN				
B		USA, CANADA		120	60	A3PE-011
C		EUROPEAN TYPE		220-240	50/60	A3PE-021
D	D1	S.E ASIA TYPE	THAILAND,SRI LANKA,SINGAPORE,MALAYSIA,HONGKONG, PAKISTAN,INDIA,BANGLADESH,INDONESIA	220-240	50/60	A3PE-041 A3R2-041
	D3	OCEAINA TYPE	AUSTRALIA,NEW ZEALAND	220-240	50/60	A3PE-041 A3R2-041
E		PHILIPPINES		220-240	50/60	A3PE-041 A3R2-041
F	F1	SAUDI ARABIA				
	F2	SAUDI ARABIA		220-240	50/60	A3PE-041 A3R2-041
G	G1	C.S AMERICA		220-240	50/60	A3PE-041 A3R2-041
	G2	C.S AMERICA		120	60	A3PE-0M1 A3R2-0M1
H		TAIWAN		110	60	A3PE-071 A3R2-071
I		JORDAN, LEBANON, SYRIA, SOUTH AFRICA, IRAQ, IRAN, N.YEMEN, CAMEROON, UAE, BAHRAIN, OMAN, QATAR, KUWAIT, KENYA, TUNISIA, IVORY COAST, MOROCCO		220-240	50/60	A3PE-041 A3R2-041
J		CHINA		220-240	50/60	A3PE-081 A3PE-082 A3PE-083 A3PE-084 A3R2-083 A3R2-084
K		KOREA		220-240	50/60	A3PE-041 A3R2-041

2. OTHER OPTION (OC-512)

2.1 OC-512

P 1



Page	Key	Parts No.	Description	Service Manual	Destinations	Class	Quantity
1	1	A0XXPP4N00	Original Cover			C	1
1	2	A4M4PP1000	Hinge			C	2
1	3	A4M4PP1300	Sponge			D	2
1	4	A4M4PP1200	Reinforce Plate			D	2
1	5	A0XXPP5P02	Pad			C	1
1	a	V153041204	screw			V	
1	b	V153030803	Screw			V	

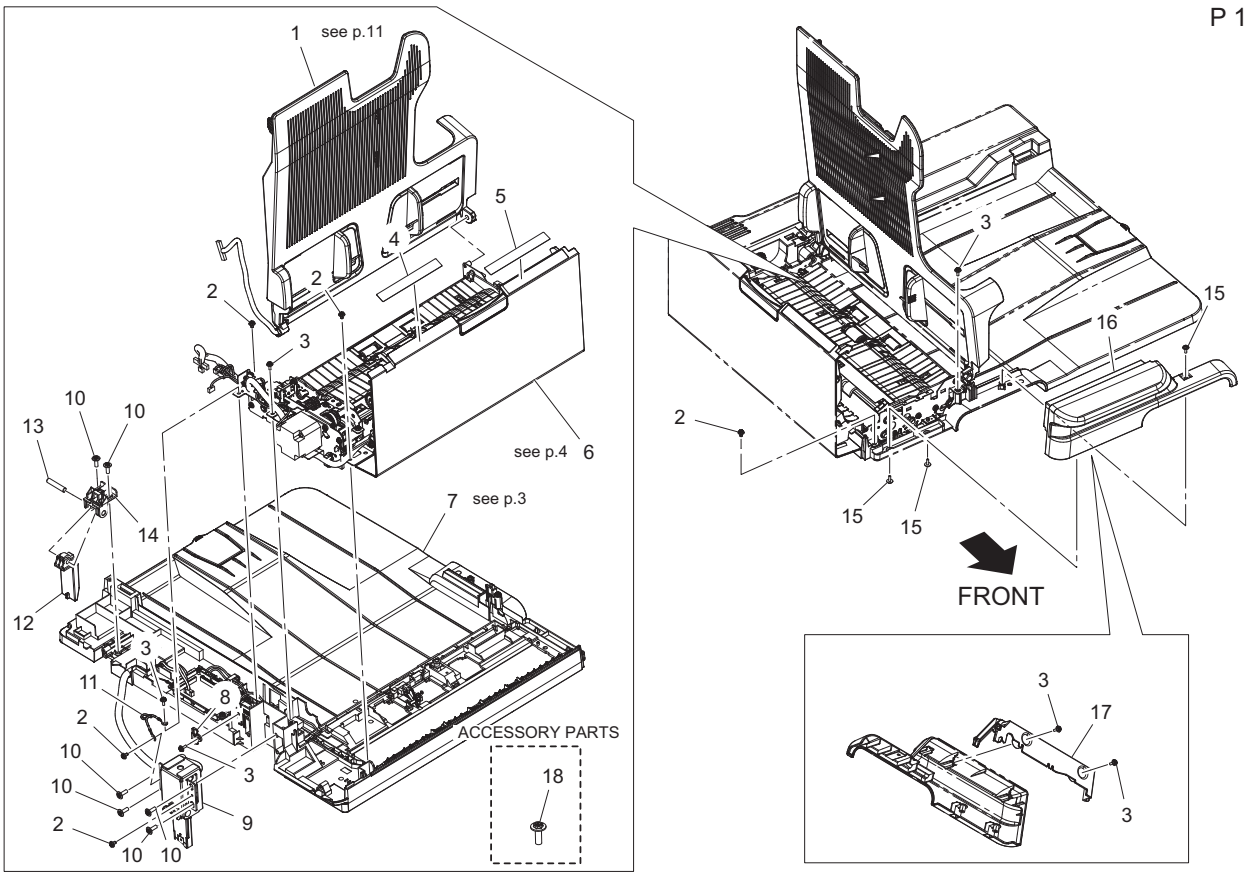
2.2 DESTINATION

Destination No.		Destinations		V	Hz	Model No.
A	A1	JAPAN				
	A2	JAPAN				
B		USA, CANADA		120	60	A4M4WY1
C		EUROPEAN TYPE		220-240	50/60	A4M4WY1
D	D1	S.E ASIA TYPE	THAILAND,SRI LANKA,SINGAPORE,MALAYSIA,HONGKONG, PAKISTAN,INDIA,BANGLADESH,INDONESIA	220-240	50/60	A4M4WY1
	D3	OCEAINA TYPE	AUSTRALIA,NEW ZEALAND	220-240	50/60	A4M4WY1
E		PHILIPPINES		220-240	50/60	A4M4WY1
F	F1	SAUDI ARABIA				
	F2	SAUDI ARABIA		220-240	50/60	A4M4WY1
G	G1	C.S AMERICA		220-240	50/60	A4M4WY1
	G2	C.S AMERICA		120	60	A4M4WY1

H	TAIWAN	110	60	A4M4WY1
I	JORDAN, LEBANON, SYRIA, SOUTH AFRICA, IRAQ, IRAN, N.YEMEN, CAMEROON, UAE, BAHRAIN, OMAN, QATAR, KUWAIT, KENYA, TUNISIA, IVORY COAST, MOROCCO	220-240	50/60	A4M4WY1
J	CHINA			
K	KOREA	220-240	50/60	A4M4WY1

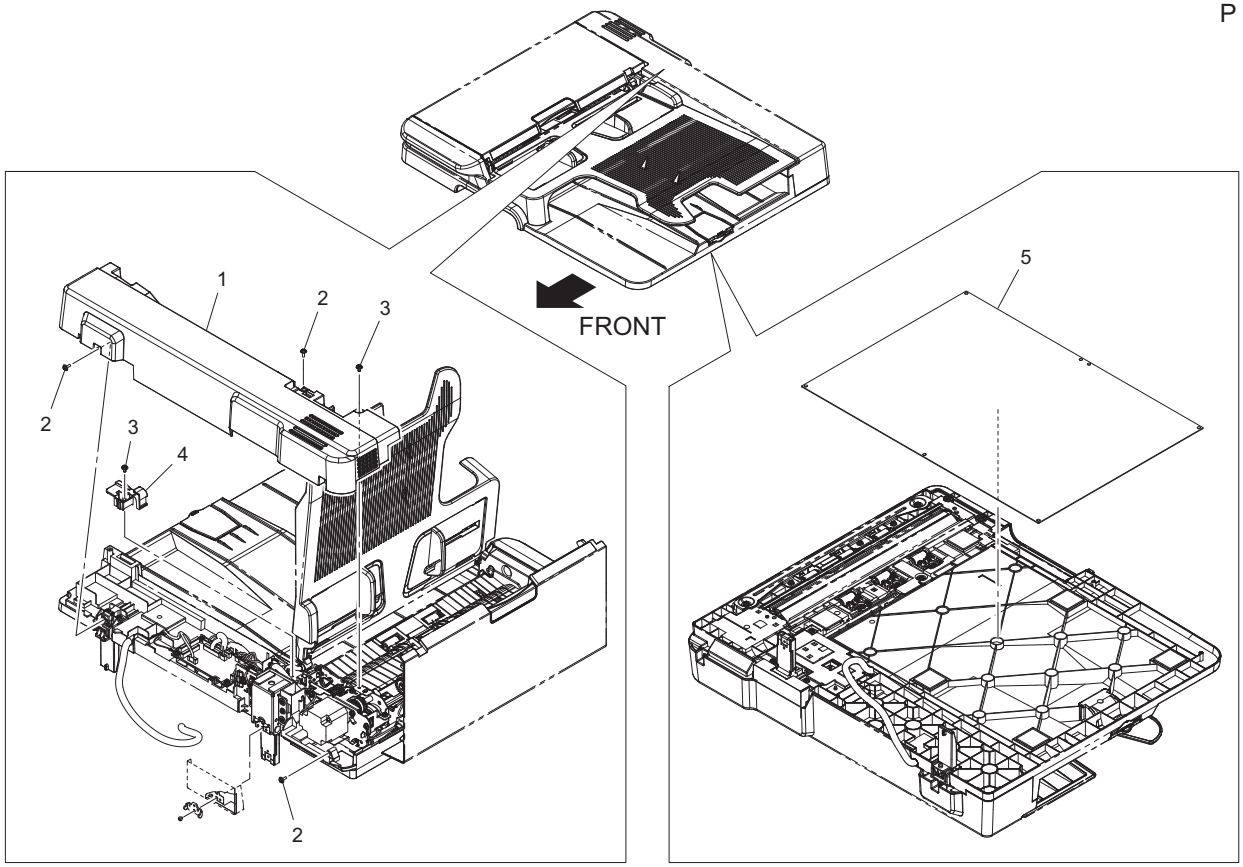
3. DOCUMENT FEEDER (DF-625)

3.1 EXTERNAL PARTS

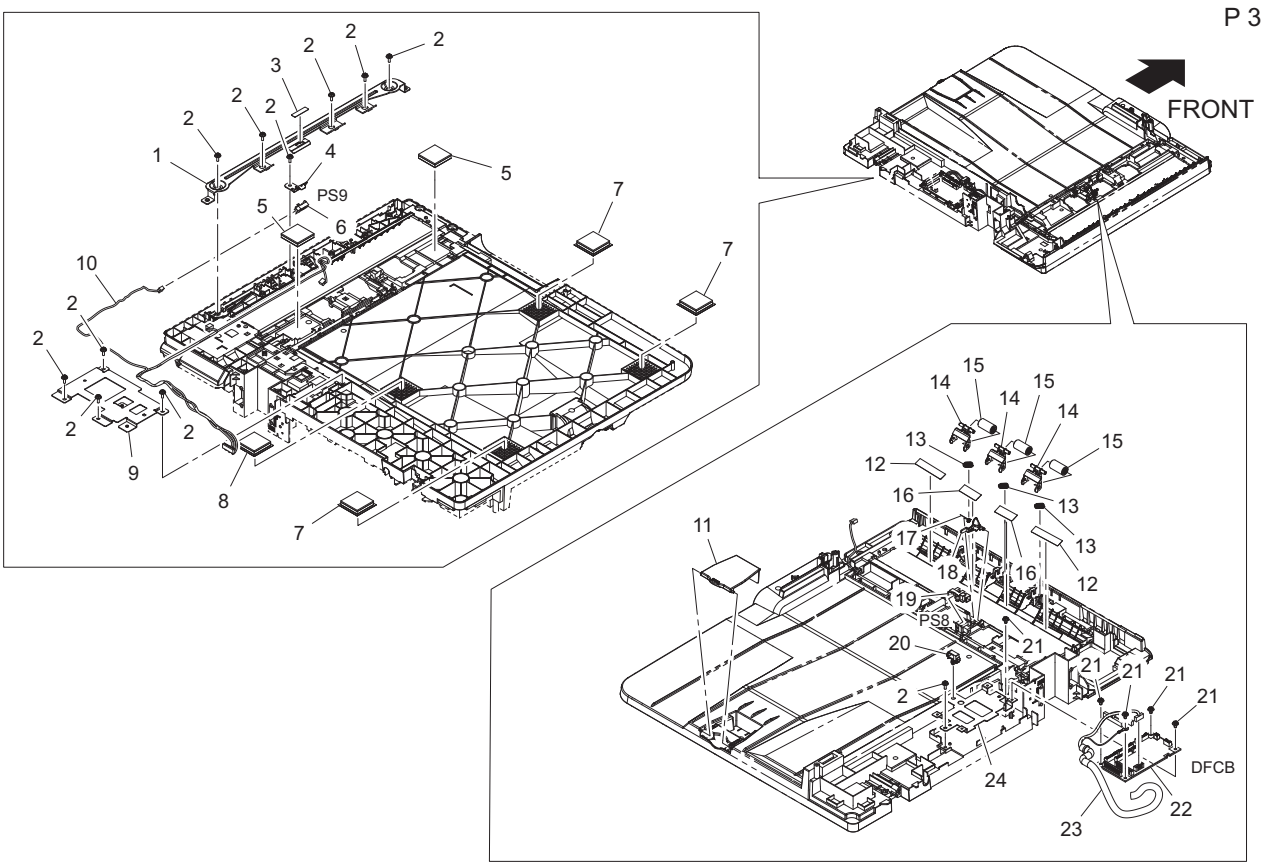


Page	Key	Parts No.	Description	Service Manual	Destinations	Class	Quantity
1	1	A3JHPP0200	Tray Assy			C	1
1	2	A3JHPP0G00	Scew			C	5
1	3	A0EYPP5700	Screw 3x8			D	6
1	4	A3JHPP0D00	Label Document Instruction			C	1
1	5	A3JHPP0B00	Label Scale			C	1
1	6	A3JHPP0100	Paper Take-up Assy			S	1
1	7	A3JHPP0000	Base Frame Assy			D	1
1	8	A3JHPP0F00	Stopper			C	1
1	9	A3JHPP4P00	Hinge L Assy			C	1
1	10	A0EYPP4400	Screw 4x12			D	6
1	11	A3JHPP0A00	Wire Harness Assy			D	1
1	12	A3JHPP0800	Hinge R (Bottom)			C	1
1	13	A3JHPP0C00	Shaft			D	1
1	14	A3JHPP0700	Hinge R (Upper)			C	1
1	15	A3JHPP0H00	Scew			C	3
1	16	A3JHPP0500	Front Cover			C	1
1	17	A3JHPP0600	Cover			D	1
1	18	A3JHPP4Q00	Scew			C	1

P 2



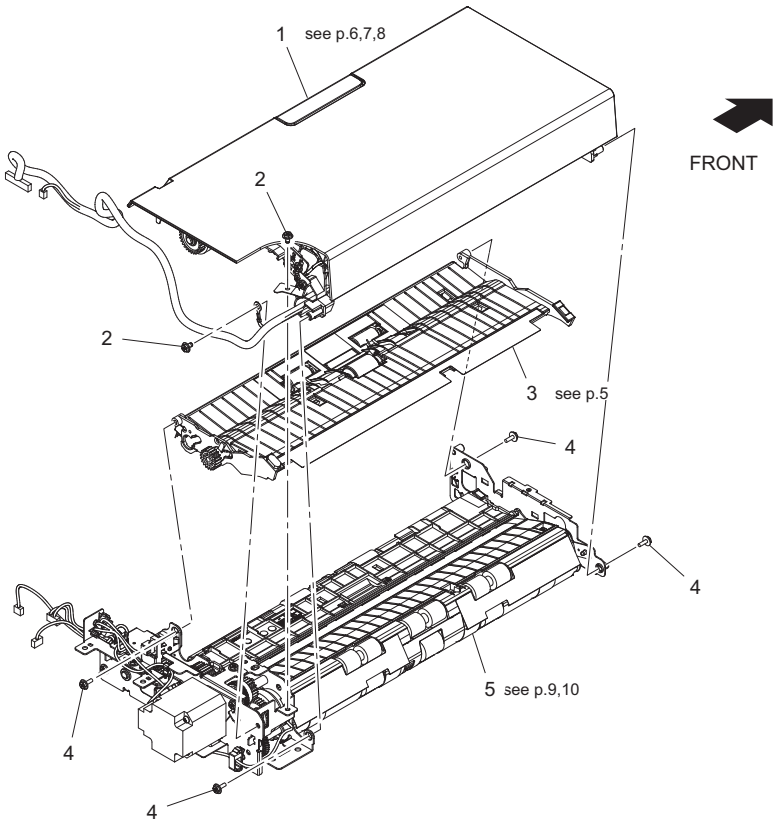
Page	Key	Parts No.	Description	Service Manual	Destinations	Class	Quantity
2	1	A3JHPP0400	Rear Cover			C	1
2	2	A3JHPP0H00	Scew			C	3
2	3	A3JHPP0G00	Scew			C	2
2	4	A3JHPP0E00	Holder			D	1
2	5	A3JHPP0300	Mat			C	1



Page	Key	Parts No.	Description	Service Manual	Destinations	Class	Quantity
3	1	A3JHPP0R00	Reinforce Plate			D	1
3	2	A0EYPP5700	Screw 3x8			D	11
3	3	A3JHPP0X00	Sheet			C	1
3	4	A3JHPP0S00	Plate Spring			D	1
3	5	A3JHPP0Y00	Magic Tape			D	2
3	6	A3JHPP1100	Photoreflector	Document transport sensor (PS9)		I	1
3	7	A3JHPP1000	Magic Tape			D	3
3	8	A3JHPP1600	Magic Tape			D	1
3	9	A3JHPP0P00	Bracket			D	1
3	10	A3JHPP1300	Wire Harness Assy			D	1
3	11	A3JHPP0J00	Guide			D	1
3	12	A3JHPP0W00	Guide			C	2
3	13	A3JHPP0U00	Pressure Spring			C	3
3	14	A3JHPP0M00	Holder			C	3
3	15	A3JHPP0N00	Roll			C	3
3	16	A3JHPP0V00	Guide			C	2
3	17	A3JHPP0T00	Torsion Spring			C	1
3	18	A3JHPP0K00	Actuator			D	1
3	19	A0EYPP4600	Photo Interrupter	Document registration sensor (PS8)		C	1
3	20	A3JHPP1200	Saddle			D	1
3	21	A3JHPP0G00	Scew			C	5
3	22	A3JHPP1500	PW Boad Assy	DF control board (DFCB)		I	1
3	23	A3JHPP1400	Wire Harness Assy			C	1
3	24	A3JHPP0Q00	Bracket			D	1

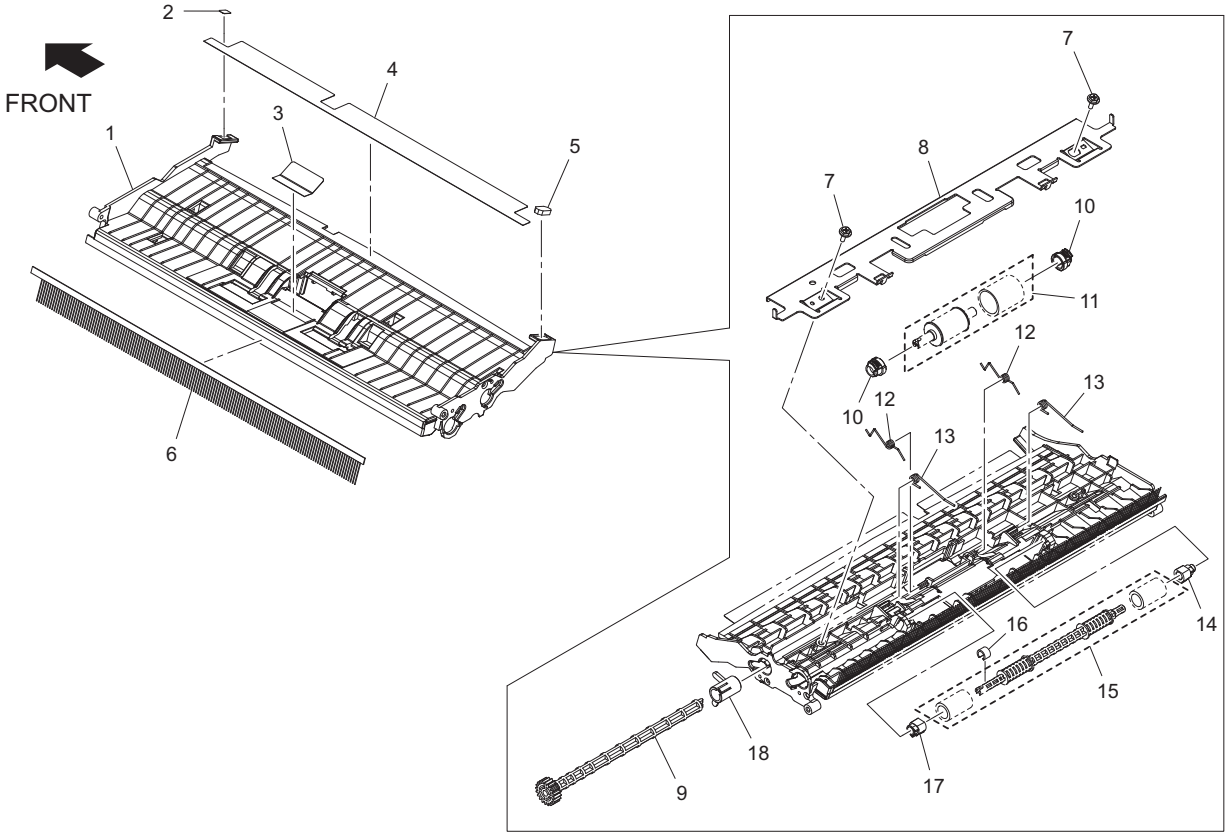
3.2 PAPER FEED SECTION

P 4



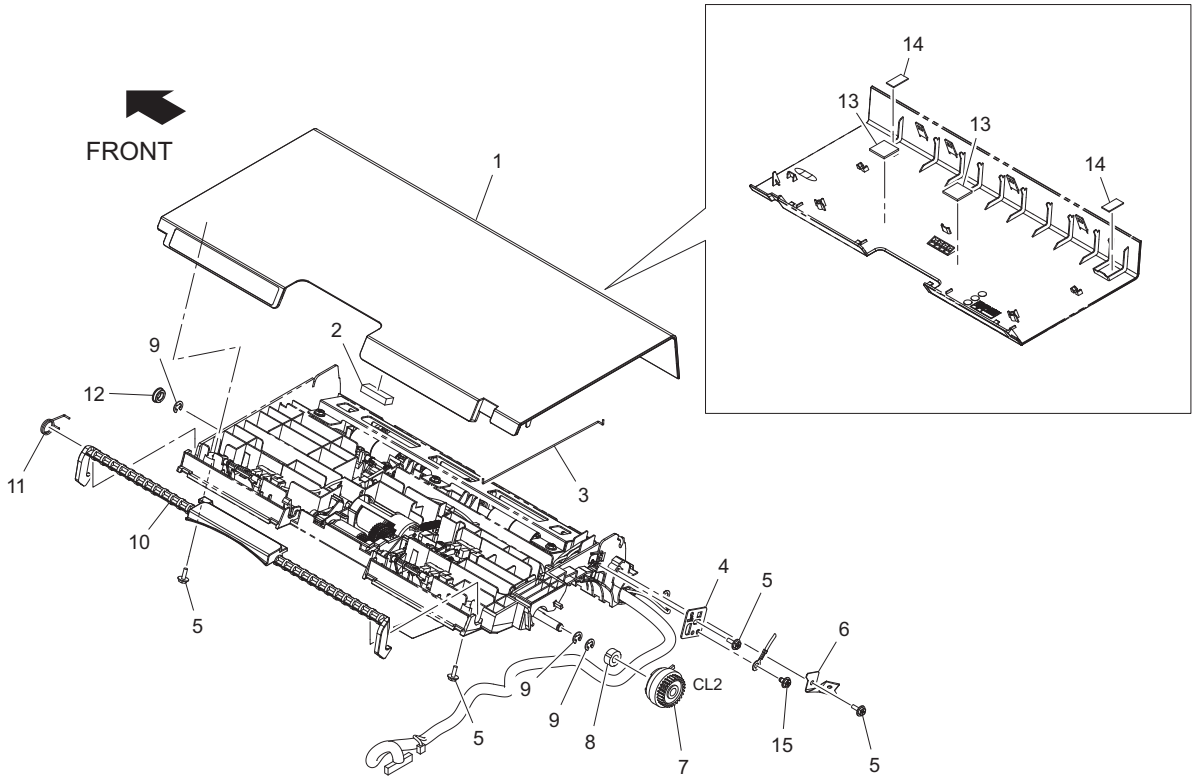
Page	Key	Parts No.	Description	Service Manual	Destinations	Class	Quantity
4	1	A3JHPP1900	Top Cover Assy			S	1
4	2	A3JHPP0G00	Scew			C	2
4	3	A3JHPP1800	Guide Assy			S	1
4	4	A0EYPP5700	Screw 3x8			D	4
4	5	A3JHPP1700	Paper Take-up Assy			S	1

P 5



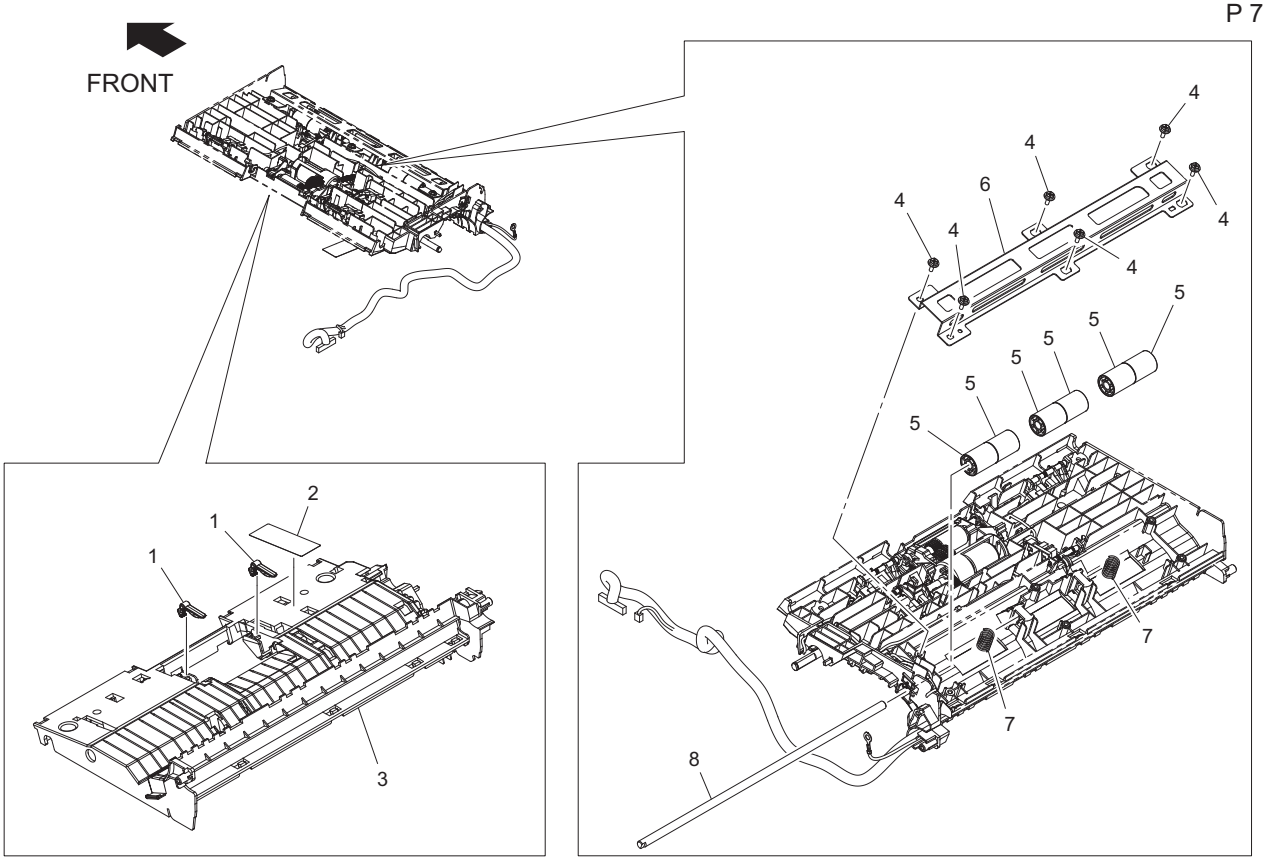
Page	Key	Parts No.	Description	Service Manual	Destinations	Class	Quantity
5	1	A3JHPP2V01	Guide			D	1
5	2	A3JHPP3800	Label			C	1
5	3	A3JHPP4R00	Guide			C	1
5	4	A3JHPP3500	Guide			C	1
5	5	A3JHPP3700	Cushion			D	1
5	6	A3JHPP3900	Neutralizing Brush			C	1
5	7	A0EYPP5700	Screw 3x8			D	2
5	8	A3JHPP3200	Bracket			D	1
5	9	A3JHPP3100	Gear			C	1
5	10	A3JHPP2X00	Bush			C	2
5	11	A3JHPP3B00	Roller Assy			A	1
5	12	A3JHPP3300	Torsion Spring			C	2
5	13	A3JHPP3400	Torsion Spring			C	2
5	14	A3JHPP2Y00	Bush			C	1
5	15	A3JHPP3A00	Roller Assy			C	1
5	16	A3JHPP2K00	Collar			C	1
5	17	A3JHPP3000	Bush			C	1
5	18	A3JHPP2W00	Bush			C	1

P 6



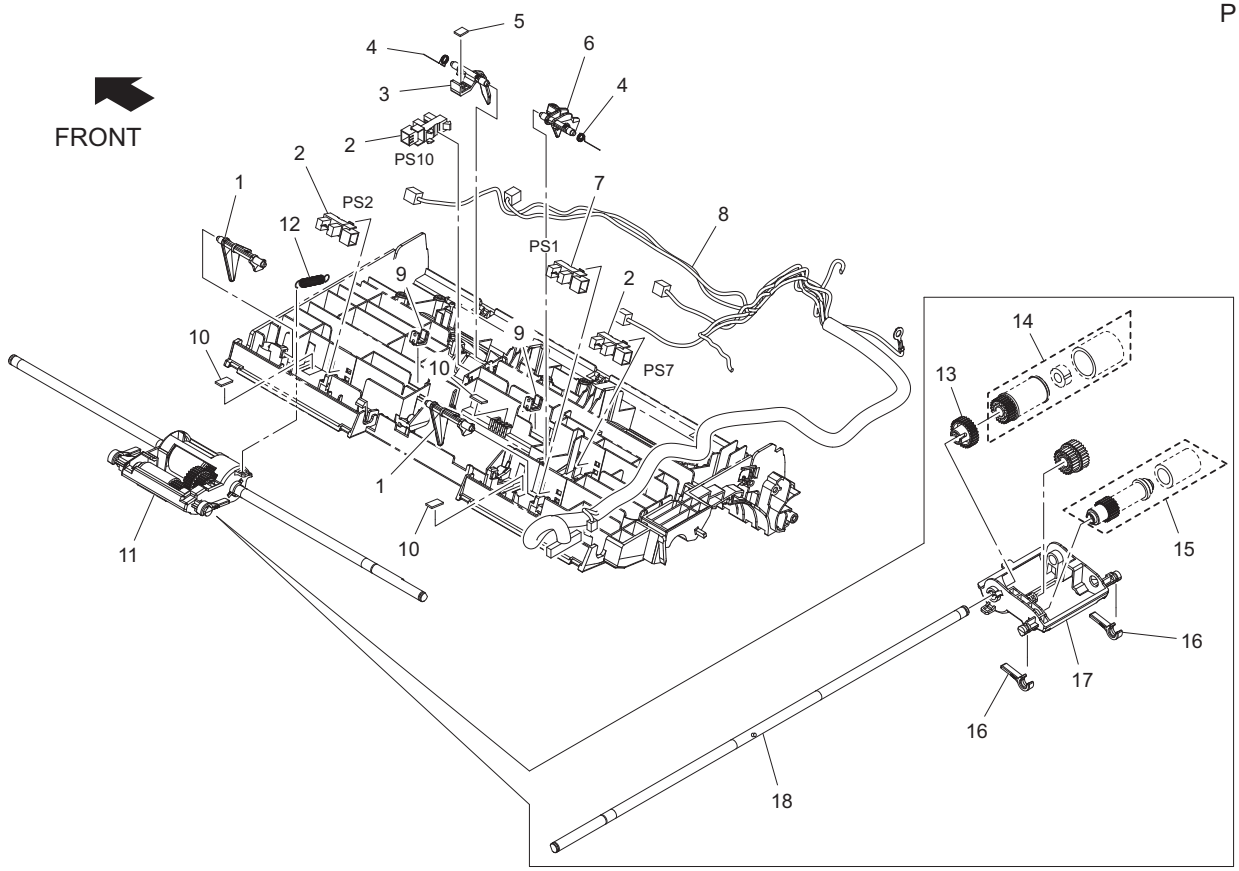
Page	Key	Parts No.	Description	Service Manual	Destinations	Class	Quantity
6	1	A3JHPP3D00	Top Cover			C	1
6	2	A3JHPP3W00	Cushion			D	1
6	3	A3JHPP3U00	Contact			C	1
6	4	A3JHPP3N00	Bracket			D	1
6	5	A0EYPP5700	Screw 3x8			D	4
6	6	A3JHPP3V00	Stoper			C	1
6	7	A3JHPP2A00	Cluch	Document registration clutch (CL2)		C	1
6	8	A3JHPP2M00	One Way Cluch			C	1
6	9	A0EYPP0100	E ring			D	3
6	10	A3JHPP3F00	Lever			C	1
6	11	A3JHPP3R01	Torsion Spring			C	1
6	12	A3JHPP2C00	Bush			C	1
6	13	A3JHPP4S00	Cushion			D	2
6	14	A3JHPP4200	Cushion			D	2
6	15	A3JHPP0G00	Scew			C	1

P 7



Page	Key	Parts No.	Description	Service Manual	Destinations	Class	Quantity
7	1	A3JHPP3H00	Lever			C	2
7	2	A3JHPP4300	Guide			C	1
7	3	A3JHPP3E00	Guide			D	1
7	4	A0EYPP5700	Screw 3x8			D	6
7	5	A3JHPP3G00	Roll			C	6
7	6	A3JHPP3P00	Bracket			D	1
7	7	A3JHPP3S00	Pressure Spring			C	2
7	8	A3JHPP3Q00	Shaft			D	1

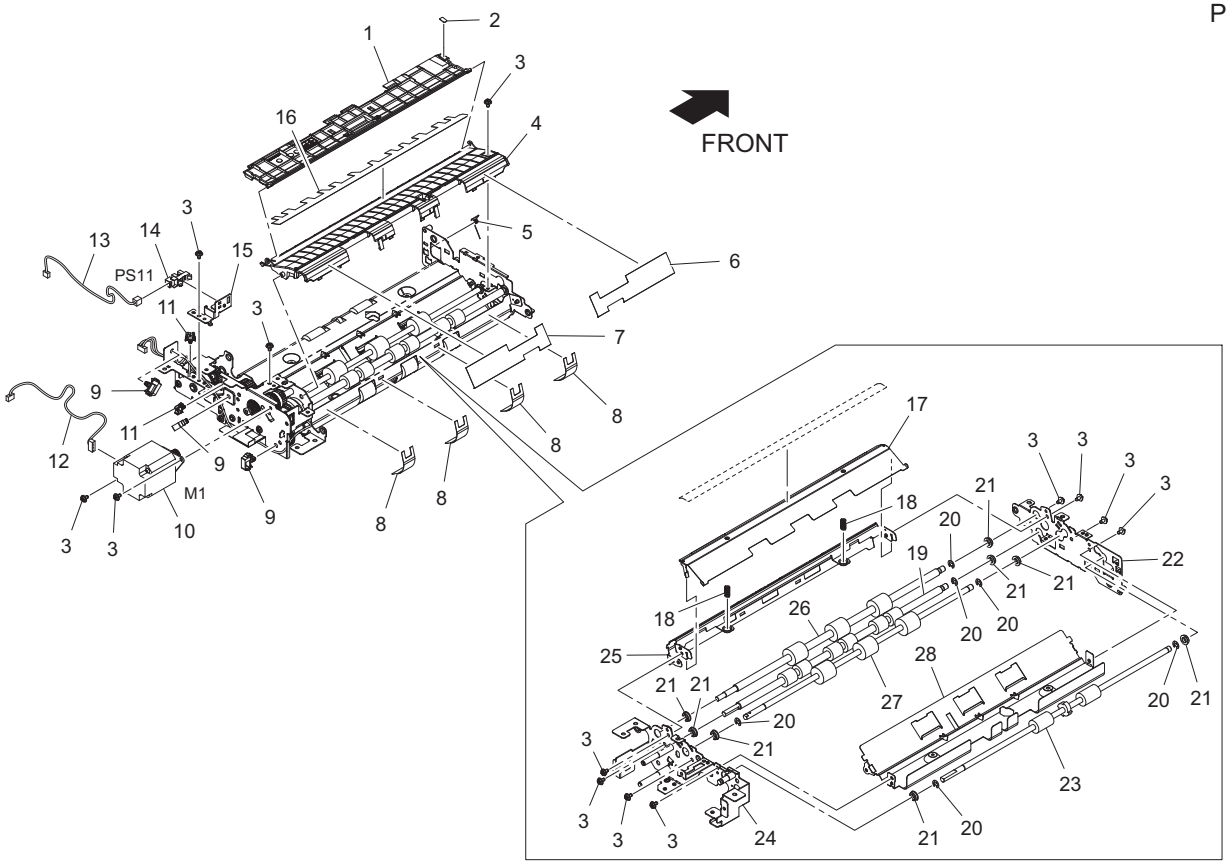
P 8



Page	Key	Parts No.	Description	Service Manual	Destinations	Class	Quantity
8	1	A3JHPP3K00	Actuator			D	2
8	2	A0EYPP4600	Photo Interrupter	Document set sensor (PS1) Document size sensor (PS2) Document feed sensor (PS7) Document exit sensor (PS10)		C	3
8	3	A3JHPP3J00	Actuator			D	1
8	4	A3JHPP0T00	Torsion Spring			C	2
8	5	A3JHPP4000	Cushion			D	1
8	6	A3JHPP3M00	Actuator			D	1
8	7	A3JHPP3X00	Photointtrupter			I	1
8	8	A3JHPP4100	Wire Harness Assy			C	1
8	9	A3JHPP4401	Bush			D	2
8	10	A3JHPP3Y00	Cushion			D	2
8	11	A3JHPP3C00	Roller Assy			C	1
8	12	A3JHPP3T00	Tension Spring			C	1
8	13	A3JHPP4700	Gear 28T			C	1
8	14	A3JHPP4A00	Roller Assy			C	1
8	15	A3JHPP4900	Roller Assy			C	1
8	16	A3JHPP4600	Lever			C	2
8	17	A3JHPP4500	Holder			C	1
8	18	A3JHPP4800	Shaft			D	1

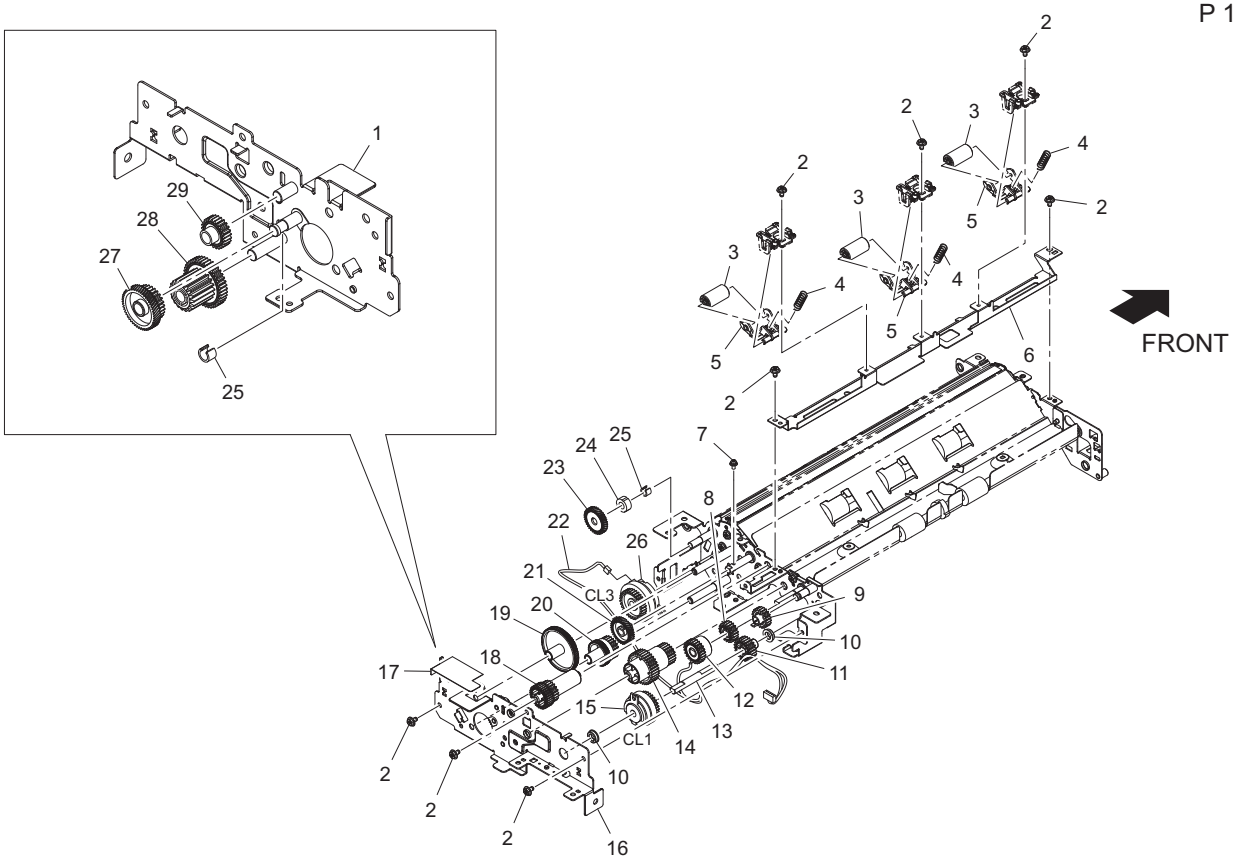
3.3 DRIVE SECTION

P 9



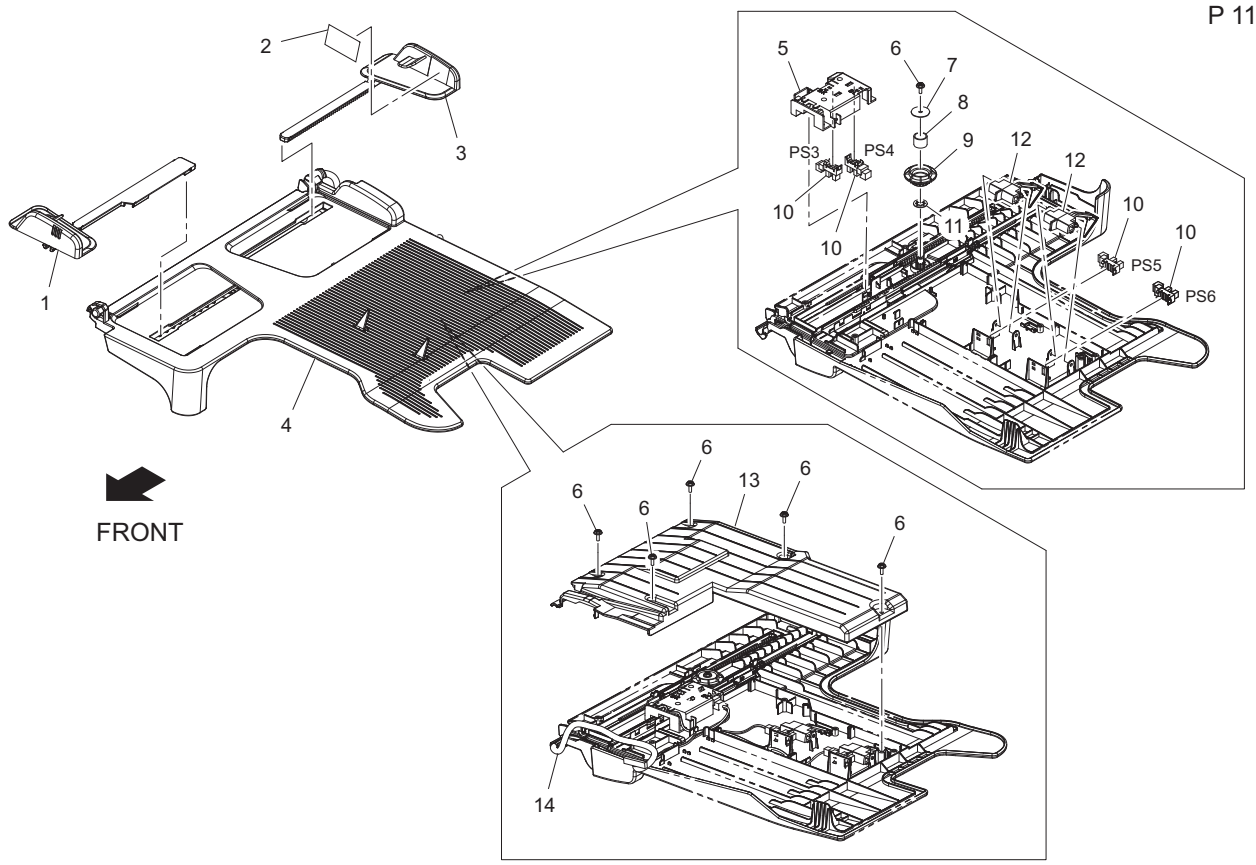
Page	Key	Parts No.	Description	Service Manual	Destinations	Class	Quantity
9	1	A3JHPP1B00	Guide			D	1
9	2	A3JHPP2F00	Label			C	1
9	3	A3JHPP0G00	Scew			C	13
9	4	A3JHPP1C01	Guide			D	1
9	5	A3JHPP2200	Torsion Spring			C	1
9	6	A3JHPP2500	Guide			C	1
9	7	A3JHPP2600	Guide			C	1
9	8	A3JHPP2700	Guide			C	4
9	9	A3JHPP1200	Saddle			D	3
9	10	A3JHPP2800	Motor	DF motor (M1)		C	1
9	11	A3JHPP2E00	Saddle			D	2
9	12	A3JHPP2G00	Wire Harness Assy			D	1
9	13	A3JHPP2J00	Wire Harness Assy			D	1
9	14	A0EYPP4600	Photo Interrupter	Upper door sensor (PS11)		C	1
9	15	A3JHPP1K00	Bracket			D	1
9	16	A3JHPP2400	Guide			C	1
9	17	A3JHPP1H01	Guide Plate			D	1
9	18	A3JHPP2100	Pressure Spring			C	2
9	19	A3JHPP1Y00	Roller			C	1
9	20	A0EYPP0100	E ring			D	6
9	21	A3JHPP2C00	Bush			C	8
9	22	A3JHPP1G00	Bracket			D	1
9	23	A3JHPP2000	Roller			C	1
9	24	A3JHPP1D00	Bracket			D	1
9	25	A3JHPP1F00	Guide Plate			D	1
9	26	A3JHPP1W00	Roller			C	1
9	27	A3JHPP1X00	Roller			C	1
9	28	A3JHPP1E00	Guide Plate			D	1

P 10



Page	Key	Parts No.	Description	Service Manual	Destinations	Class	Quantity
10	1	A3JHPP2R00	Bracket			D	1
10	2	A3JHPP0G00	Scew			C	8
10	3	A3JHPP0N00	Roll			C	3
10	4	A3JHPP2300	Pressure Spring			C	3
10	5	A3JHPP0M00	Holder			C	3
10	6	A3JHPP1J00	Guide Plate			D	1
10	7	A3JHPP2Q00	Scew			C	1
10	8	A3JHPP1U00	Gear 20T			C	1
10	9	A3JHPP1S00	Gear 20T			C	1
10	10	A3JHPP2C00	Bush			C	2
10	11	A3JHPP1T00	Gear 23T			C	1
10	12	A3JHPP2900	Torque Limiter			C	1
10	13	A3JHPP1V00	Shaft			D	1
10	14	A3JHPP1P00	Gear 34/21T			C	1
10	15	A3JHPP2A00	Cluch	Document feed clutch (CL1)		C	1
10	16	A3JHPP1A00	Bracket Assy			C	1
10	17	A3JHPP2P00	Sheet			C	1
10	18	A3JHPP1R00	Gear 33/21T			C	1
10	19	A3JHPP1M00	Gear 91/36T			C	1
10	20	A3JHPP1N00	Gear 50/22T			C	1
10	21	A3JHPP1Q00	Gear 35T			C	1
10	22	A3JHPP2H00	Wire Harness Assy			D	1
10	23	A3JHPP2N00	Gear 35T			C	1
10	24	A3JHPP2M00	One Way Cluch			C	1
10	25	A3JHPP2K00	Collar			C	2
10	26	A3JHPP2B00	Cluch	Switchback clutch (CL3)		C	1
10	27	A3JHPP2U00	Gear 51/28T			C	1
10	28	A3JHPP2T00	Gear 41/19T			C	1
10	29	A3JHPP2S00	Gear 25T			C	1

3.4 PAPER FEED TRAY SECTION



Page	Key	Parts No.	Description	Service Manual	Destinations	Class	Quantity
11	1	A3JHPP4D00	Regurating Plate (Front)			C	1
11	2	A3JHPP4M00	Label Max			C	1
11	3	A3JHPP4C00	Regurating Plate (Rear)			C	1
11	4	A3JHPP4B00	Tray			C	1
11	5	A3JHPP4E00	Holder			D	1
11	6	A0EYPP5700	Screw 3x8			D	6
11	7	A3JHPP4H00	Washer			C	1
11	8	A3JHPP4T00	Pressure Spring			C	1
11	9	A3JHPP4J00	Gear			C	1
11	10	A0EYPP4600	Photo Interrupter	Document CD size sensor/1 (PS3) Document CD size sensor/2 (PS4) Document FD size sensor/1 (PS5) Document FD size sensor/2 (PS6)		C	4
11	11	A3JHPP4U00	Sheet			C	1
11	12	A3JHPP4G00	Actuator			D	2
11	13	A3JHPP4F00	Cover			C	1
11	14	A3JHPP4N00	Wire Harness Assy			C	1

3.5 MAINTENANCE LIST

- The items with no Page/Key numbers are not handled as spare parts.

No.	Section	PM Parts Description	Maintenance Cycle (K=1,000)		Parts No.	Destinations	Page/Key	Note
			QTY	Replace				
1	DF	Separation roller	1	110K	A3JHPP3B00		P5-11	

3.6 DESTINATION

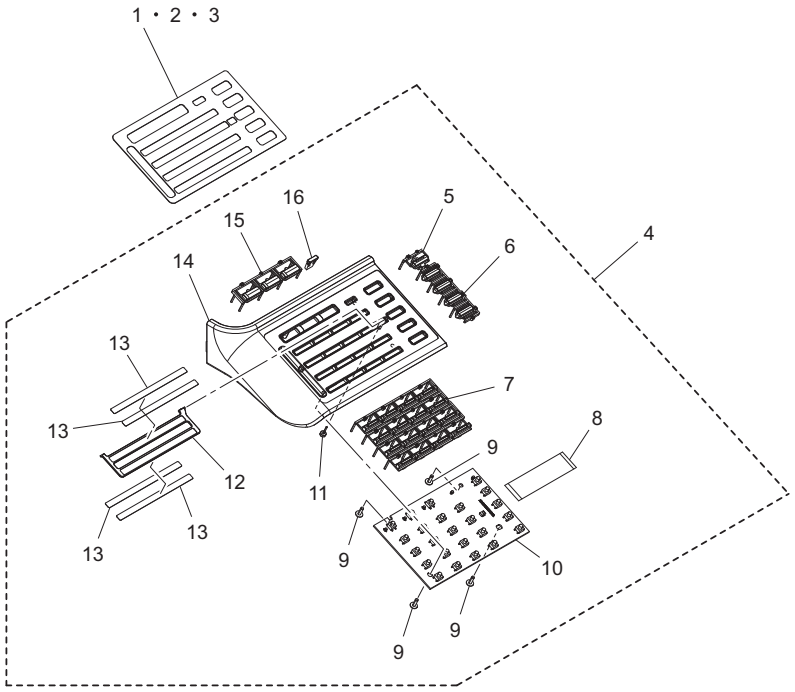
Destination No.	Destinations	V	Hz	Model No.

A	A1	JAPAN		100	50/60	
	A2	JAPAN		200	50/60	
B		USA, CANADA		120	60	A3JH-WY1
C		EUROPEAN TYPE		220-240	50/60	A3JH-WY1
D	D1	S.E ASIA TYPE	THAILAND,SRI LANKA,SINGAPORE,MALAYSIA,HONGKONG, PAKISTAN,INDIA,BANGLADESH,INDONESIA	220-240	50/60	A3JH-WY1
	D3	OCEAINA TYPE	AUSTRALIA,NEW ZEALAND	220-240	50/60	A3JH-WY1
E		PHILIPPINES		220-240	50/60	A3JH-WY1
F	F1	SAUDI ARABIA		127	60	
	F2	SAUDI ARABIA		220-240	50/60	A3JH-WY1
G	G1	C.S AMERICA		220-240	50/60	A3JH-WY1
	G2	C.S AMERICA		120	60	A3JH-WY1
H		TAIWAN		110	60	A3JH-WY1
I		JORDAN, LEBANON, SYRIA, SOUTH AFRICA, IRAQ, IRAN, N.YEMEN, CAMEROON, UAE, BAHRAIN, OMAN, QATAR, KUWAIT, KENYA, TUNISIA, IVORY COAST, MOROCCO		220-240	50/60	A3JH-WY1
J		CHINA		220-240	50/60	A3JH-WY1
K		KOREA		220-240	50/60	A3JH-WY1

4. OTHER OPTION (MK-733)

4.1 MK-733

P 1



Page	Key	Parts No.	Description	Service Manual	Destinations	Class	Quantity
1	1	A3PEPP1G00	Fax Sheet (English)			D	1
1	2	A3PEPP1H00	Fax Sheet (Simplified)			D	1
1	3	A3PEPP1J00	Fax Sheet (Traditional)			D	1
1	4	A3PEPP6D00	Control Panel Assy (FAX)			I	1
1	5	A3PEPP0N00	Interrupt Key			D	1
1	6	A3PEPP1D00	Copy Function Key 2			D	1
1	7	A3PEPP1C00	One Touch Key			D	1
1	8	A3PEPP1M01	FLAT CABLE			C	1
1	9	A3PEPP0800	Scew			C	4
1	10	A3PEPP1K00	PW Board Assy			I	1
1	11	A3PEPP1A00	Button			D	1
1	12	A3PEPP1900	Flip			D	1
1	13	A3PEPP1F00	Number Sheet			D	4
1	14	A3PEPP1800	Control Panel (FAX)			D	1
1	15	A3PEPP1B00	Fax Function Key			D	1
1	16	A3PEPP1E00	Cover			D	1

4.2 DESTINATION

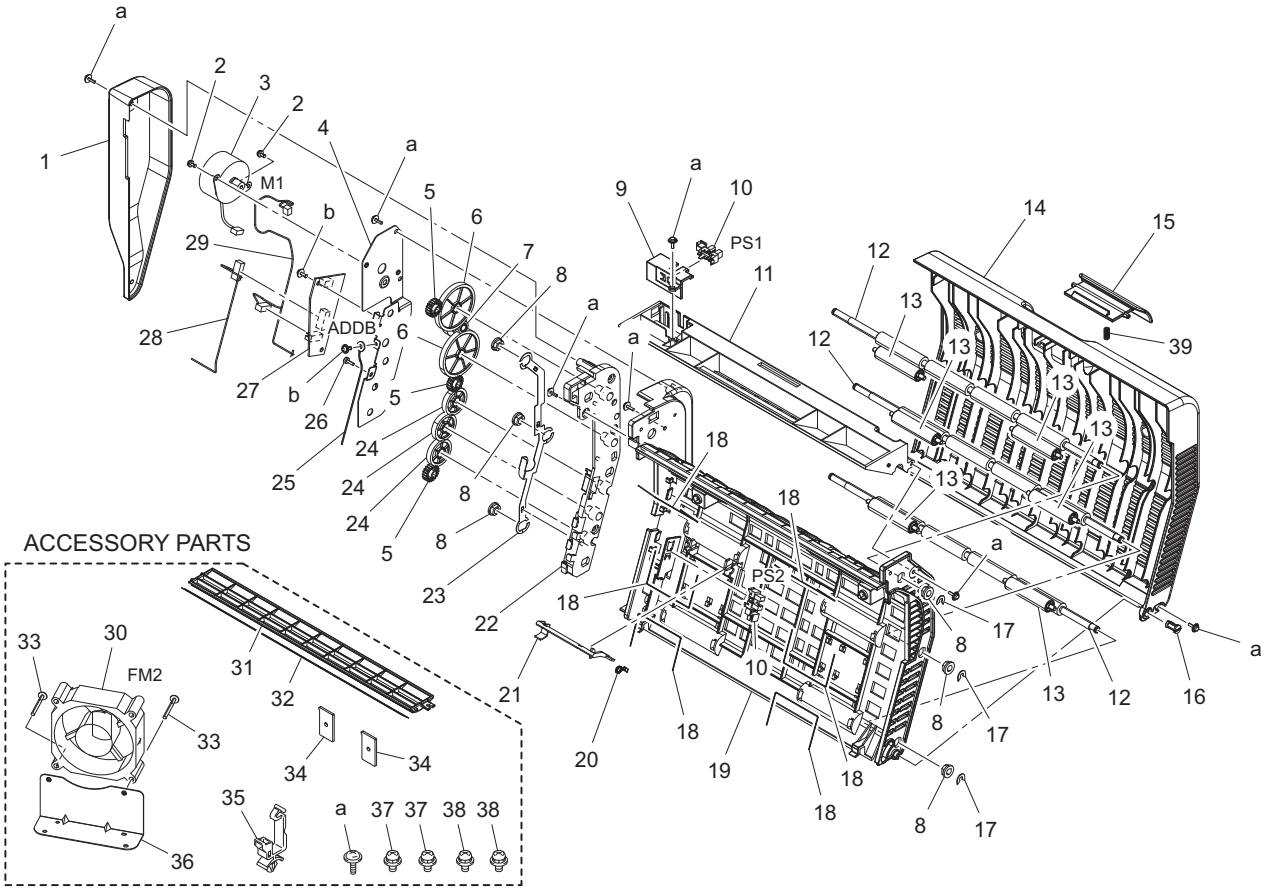
Destination No.		Destinations		V	Hz	Model No.
A	A1	JAPAN		100	50/60	
	A2	JAPAN		200	50/60	
B		USA, CANADA		120	60	A4M6-WY1
C		EUROPEAN TYPE		220-240	50/60	A4M6-WY1
D	D1	S.E ASIA TYPE	THAILAND,SRI LANKA,SINGAPORE,MALAYSIA,HONGKONG, PAKISTAN,INDIA,BANGLADESH,INDONESIA	220-240	50/60	A4M6-WY1

	D3	OCEAINA TYPE	AUSTRALIA,NEW ZEALAND	220-240	50/60	A4M6-WY1
E		PHILIPPINES		220-240	50/60	A4M6-WY1
F	F1	SAUDI ARABIA		127	60	
	F2	SAUDI ARABIA		220-240	50/60	A4M6-WY1
G	G1	C.S AMERICA		220-240	50/60	A4M6-WY1
	G2	C.S AMERICA		120	60	A4M6-WY1
H		TAIWAN		110	60	A4M6-WY1
I		JORDAN, LEBANON, SYRIA, SOUTH AFRICA, IRAQ, IRAN, N.YEMEN, CAMEROON, UAE, BAHRAIN, OMAN, QATAR, KUWAIT, KENYA, TUNISIA, IVORY COAST, MOROCCO		220-240	50/60	A4M6-WY1
J		CHINA		220-240	50/60	A4M6-WY1
K		KOREA		220-240	50/60	A4M6-WY1

5. DUPLEX (AD-509)

5.1 AD-509

P 1



Page	Key	Parts No.	Description	Service Manual	Destinations	Class	Quantity
1	1	A3PEPP2500	Cover			C	1
1	2	A0FDPP8700	SCREW			C	2
1	3	A3PEPP2200	Stepping Motor	AD motor (M1)		C	1
1	4	A3PEPP1W00	Bracket			D	1
1	5	4497311701	GEAR 20T			C	3
1	6	A3PEPP1U00	Gear 60T			C	2
1	7	A3PEPP1V00	Gear			C	1
1	8	4030309301	BUSHING			C	6
1	9	A3PEPP1Y00	Holder			D	1
1	10	A3PEPP1X00	Photointtrupter	Door sensor (PS1) Transport sensor (PS2)		I	2
1	11	A3PEPP1R00	Guide			C	1
1	12	A3PEPP1Q00	Roller			C	3
1	13	4497311601	ROLL			C	6
1	14	A3PEPP2400	Cover			C	1
1	15	A3PEPP2600	Lever			C	1
1	16	A3PEPP2F00	Pin			C	1
1	17	A3PEPP2B00	E ring			C	3
1	18	A3PEPP1P00	Spring			D	6
1	19	A3PEPP1N00	Frame			D	1
1	20	A3PEPP2A00	Torsion Spring			C	1
1	21	A3PEPP2000	Actuator			C	1
1	22	A3PEPP1S00	Holder			D	1
1	23	A3PEPP1T00	Ground Plate			D	1
1	24	A3PEPP2E00	Gear 34T			C	3
1	25	A3PEPP2801	WIRE HARNESS ASSY			D	1
1	26	A3PEPP2900	Scew			C	1

1	27	A3PEPP2100	PW Board Assy	AD drive board (ADDB)		I	1
1	28	A3PEPP2300	Wire Harness Assy			D	1
1	29	A3PEPP2700	Wire Harness Assy			D	1
1	30	9J03M10000	FAN MOTOR			B	1
1	31	A3PEPP2H00	Guide			C	1
1	32	A3PEPP2M00	Mylar			C	1
1	33	A3PEPP2K00	Scew			C	2
1	34	A3PEPP2D00	Plate Nut			C	2
1	35	V500010020	Saddle			D	1
1	36	A3PEPP2J00	Bracket			D	1
1	37	A3PEPP2C00	Shoulder Screw			C	2
1	38	A3PEPP6M00	SCREW			C	2
1	39	A3PEPP2G00	Pressure Spring			C	1
1	a	V153030804	screw			V	14
1	b	V116030803	Screw			V	3

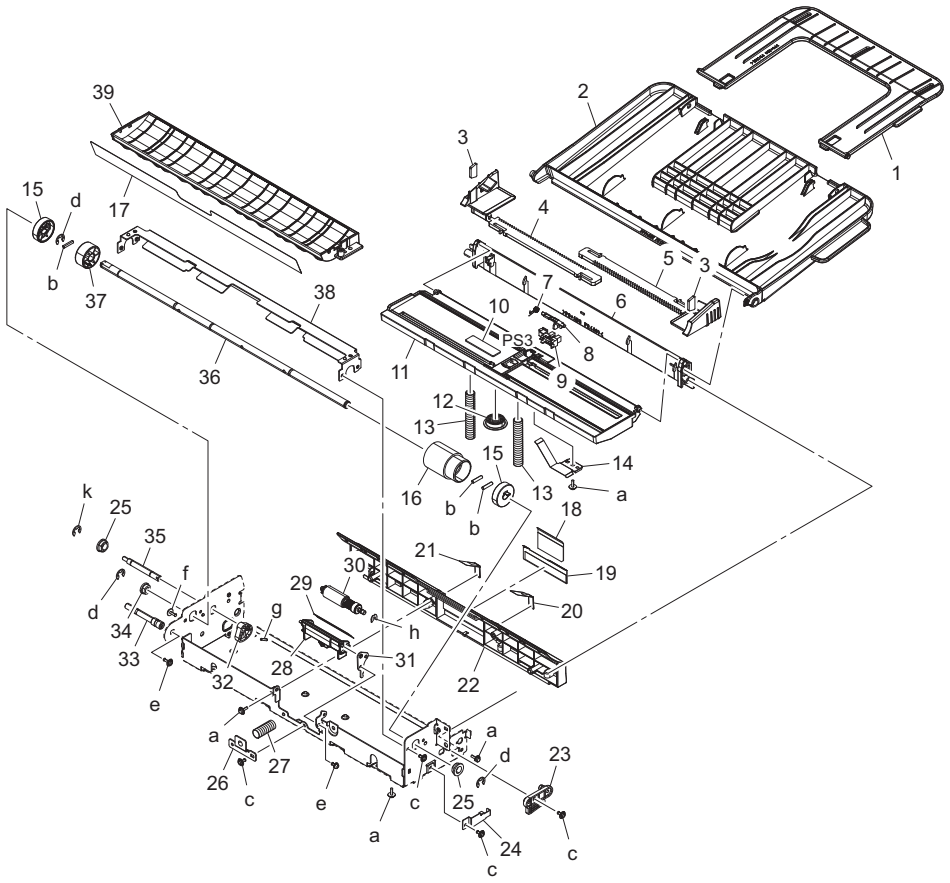
5.2 DESTINATION

Destination No.		Destinations		V	Hz	Model No.
A	A1	JAPAN		100	50/60	
	A2	JAPAN		200	50/60	
B		USA, CANADA		120	60	A3PG-WY1
C		EUROPEAN TYPE		220-240	50/60	A3PG-WY1
D	D1	S.E ASIA TYPE	THAILAND,SRI LANKA,SINGAPORE,MALAYSIA,HONGKONG, PAKISTAN,INDIA,BANGLADESH,INDONESIA	220-240	50/60	A3PG-WY1
	D3	OCEAINA TYPE	AUSTRALIA,NEW ZEALAND	220-240	50/60	A3PG-WY1
E		PHILIPPINES		220-240	50/60	A3PG-WY1
F	F1	SAUDI ARABIA		127	60	
	F2	SAUDI ARABIA		220-240	50/60	A3PG-WY1
G	G1	C.S AMERICA		220-240	50/60	A3PG-WY1
	G2	C.S AMERICA		120	60	A3PG-WY1
H		TAIWAN		110	60	A3PG-WY1
I		JORDAN, LEBANON, SYRIA, SOUTH AFRICA, IRAQ, IRAN, N.YEMEN, CAMEROON, UAE, BAHRAIN, OMAN, QATAR, KUWAIT, KENYA, TUNISIA, IVORY COAST, MOROCCO		220-240	50/60	A3PG-WY1
J		CHINA		220-240	50/60	A3PG-WY1
K		KOREA		220-240	50/60	A3PG-WY1

6. PAPER FEEDER (MB-505)

6.1 MANUAL PAPER FEED SECTION

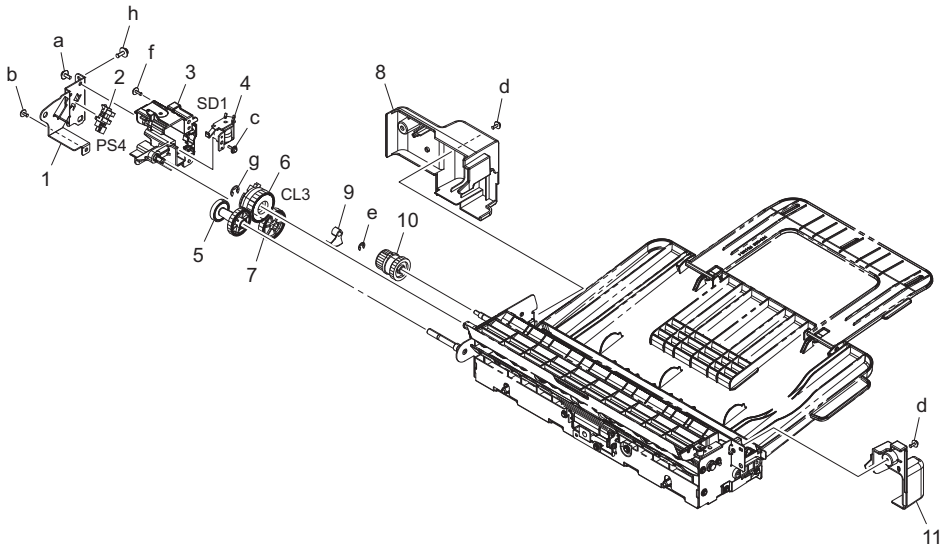
P 1



Page	Key	Parts No.	Description	Service Manual	Destinations	Class	Quantity
1	1	A0XXPP4A00	Tray			C	1
1	2	A0XXPP4900	Tray			C	1
1	3	4038328601	BRAKE			C	2
1	4	A0XXPP4D00	Regulating Plate			C	1
1	5	A0XXPP4C00	Regulating Plate			C	1
1	6	A0XXPP1N00	Holder			D	1
1	7	A0XXPP1D00	Torsion Spring			C	1
1	8	A0XXPP4M00	Actuator			C	1
1	9	A3PEPP1X00	Photointtrupter	Bypass paper empty sensor (PS3)		I	1
1	10	4687328101	FRICTION SHEET			C	1
1	11	A0XXPP4B00	Guide			C	1
1	12	A0XXPP4E00	Gear			C	1
1	13	A0XXPP1T00	Pressure Spring			C	2
1	14	4038325501	BRAKE			D	1
1	15	A0XXPP6S00	Collar			C	2
1	16	A0XX594700	Paper feed Roller			C	1
1	17	A3PHPP1500	Seal			D	1
1	18	4030340301	GUIDE			C	1
1	19	4030340201	GUIDE PLATE			C	1
1	20	4038326802	GUIDE			C	1
1	21	4038326902	GUIDE			C	1
1	22	A3PHPP1200	Guide			D	1
1	23	4038321501	HOLD PLATE			D	1
1	24	4039328201	PLATE SPRING			D	1
1	25	4131353202	BUSHING			C	2
1	26	A0XXPP1W00	Holder			D	1
1	27	4030347501	PRESSURE SPRING			C	1

1	28	A0XXPP4V00	Holder			C	1
1	29	A0XXPP6T00	Guide			C	1
1	30	4034015101	SEPARATION ROLLER			A	1
1	31	A3PHPP1700	Adjust Plate			D	1
1	32	4038323601	CAM			C	1
1	33	A0XXPP2600	Shaft			D	1
1	34	4030309301	BUSHING			C	1
1	35	A0XXPP2500	Shaft			D	1
1	36	A0XXPP2400	Shaft			C	1
1	37	A0XXPP5700	Collar			C	1
1	38	A3PHPP1300	Bracket			D	1
1	39	A3PHPP1400	Guide			D	1
1	a	V153030803	Screw			V	
1	b	V231301450	pin			V	
1	c	V137030603	screw			V	
1	d	V217060001	E Ring			V	
1	e	V116030803	Screw			V	
1	f	V137030803	screw			V	
1	g	V231201050	pin			V	
1	h	V218030086	E ring			V	
1	k	V217040001	E Ring			V	

P 2

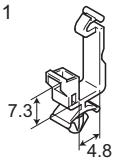
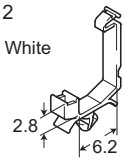


Page	Key	Parts No.	Description	Service Manual	Destinations	Class	Quantity
2	1	A3PHPP1601	Frame			D	1
2	2	A3PEPP1X00	Photointtrupter	Bypass lift sensor (PS4)		I	1
2	3	A0XXPP4G00	Holder			C	1
2	4	9J06M20000	SOLENOID	Bypass pick-up solenoid (SD1)		C	1
2	5	A0XXPP4K00	Gear			C	1
2	6	A3PEPP4F00	Cluch	Bypass paper feed clutch (CL3)		C	1
2	7	A0XXPP4H00	Gear			C	1
2	8	A3PHPP1900	Rear Cover			D	1
2	9	A0XXPP4J00	Lever			C	1

2	10	4038326001	CLUTCH ASSY			C	1
2	11	A3PHPP1800	Front Cover			D	1
2	a	V153040803	screw			V	
2	b	V137030603	screw			V	
2	c	V153030803	Screw			V	
2	d	V116030804	Screw			V	
2	e	V217040001	E Ring			V	
2	f	V137030803	screw			V	
2	g	V217060001	E Ring			V	
2	h	V116030803	Screw			V	

6.2 WIRING ACCESSORIES AND JIGS

P 3

1 	6	11	16	21	26	31	36
2 	7	12	17	22	27	32	37
3	8	13	18	23	28	33	38
4	9	14	19	24	29	34	39
5	10	15	20	25	30	35	40

Page	Key	Parts No.	Description	Service Manual	Destinations	Class	Quantity
3	1	V500010020	Saddle			D	
3	2	V500010046	saddle			D	

6.3 MAINTENANCE LIST

- The items with no Page/Key numbers are not handled as spare parts.

No.	Section	PM Parts Description	Maintenance Cycle (K=1,000)		Parts No.	Destinations	Page/Key	Note
			QTY	Replace				
1	MB-505	Feed roller	1	165K	A0XX594700		P1-16	
2	MB-505	Separation roller	1	165K	4034015101			

6.4 DESTINATION

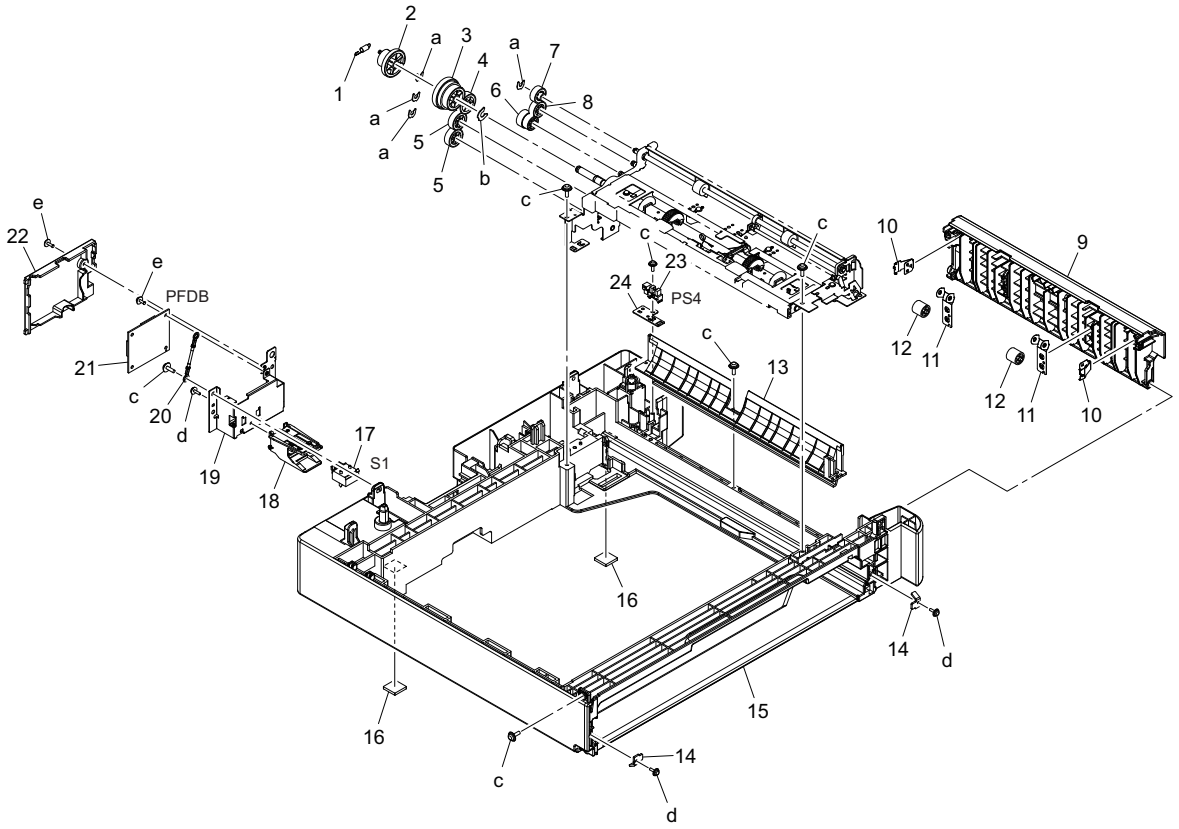
Destination No.		Destinations	V	Hz	Model No.
A	A1	JAPAN			
	A2	JAPAN			
B		USA, CANADA	120	60	A3PHWY1

C		EUROPEAN TYPE		220-240	50/60	A3PHWY1
D	D1	S.E ASIA TYPE	THAILAND,SRI LANKA,SINGAPORE,MALAYSIA,HONGKONG, PAKISTAN,INDIA,BANGLADESH,INDONESIA			
	D3	OCEAINA TYPE	AUSTRALIA,NEW ZEALAND			
E		PHILIPPINES				
F	F1	SAUDI ARABIA				
	F2	SAUDI ARABIA				
G	G1	C.S AMERICA				
	G2	C.S AMERICA		120	60	A3PHWY1
H		TAIWAN				
I		JORDAN, LEBANON, SYRIA, SOUTH AFRICA, IRAQ, IRAN, N.YEMEN, CAMEROON, UAE, BAHRAIN, OMAN, QATAR, KUWAIT, KENYA, TUNISIA, IVORY COAST, MOROCCO				
J		CHINA				
K		KOREA				

7. PAPER FEEDER (PF-507)

7.1 EXTERNAL PARTS

P 1

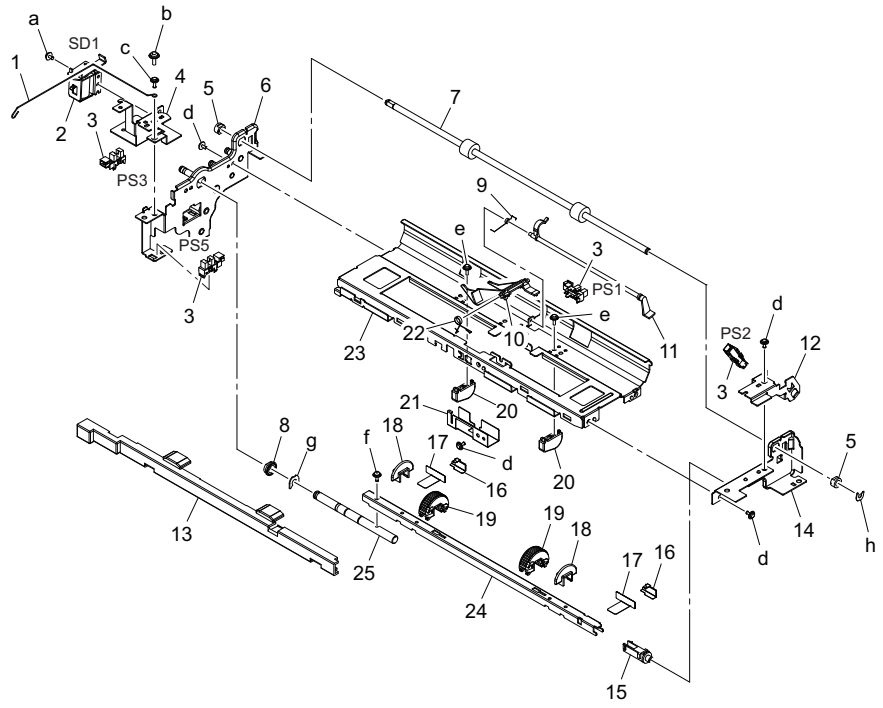


Page	Key	Parts No.	Description	Service Manual	Destinations	Class	Quantity
1	1	4686335901	TENSION SPRING			C	1
1	2	A3PFPP1200	Gear 29/38T			C	1
1	3	4686335801	GEAR			C	1
1	4	4686330801	GEAR 20/25T			C	1
1	5	4686334101	GEAR 22T			C	2
1	6	4686334301	GEAR 17/19T			C	1
1	7	4686336101	GEAR 18T			C	1
1	8	4686335101	GEAR 20T			C	1
1	9	A3PFPP1F00	Cover			D	1
1	10	4686333501	PLATE SPRING			C	2
1	11	4686336201	PLATE SPRING			C	2
1	12	4686336401	ROLL			C	2
1	13	4686331801	GUIDE			D	1
1	14	A3PFPP1C00	Stopper			C	2
1	15	A3PFPP1000	Frame			D	1
1	16	4156382601	RUBBER FOOT			D	2
1	17	A3PEPP2T00	Switch	Paper size detect switch (S1)		C	1
1	18	A3PEPP2S00	Holder			D	1
1	19	A3PFPP1100	Bracket			D	1
1	20	A3PFPP1500	Harness			D	1
1	21	A3PFPP1300	PCB Assy	PF drive board (PFDB)		I	1
1	22	A3PFPP1400	Cover			D	1
1	23	A3PEPP1X00	Photointtrupter	Door sensor (PS4)		I	1
1	24	4686331901	BRACKET			D	1
1	a	V218040086	E ring			V	
1	b	A3PFPP1G00	E ring			C	
1	c	V153041003	screw			V	

1	d	A3PEPP0800	Scew			C	
1	e	V116030803	Screw			V	

7.2 PAPER TAKE-UP SECTION

P 2

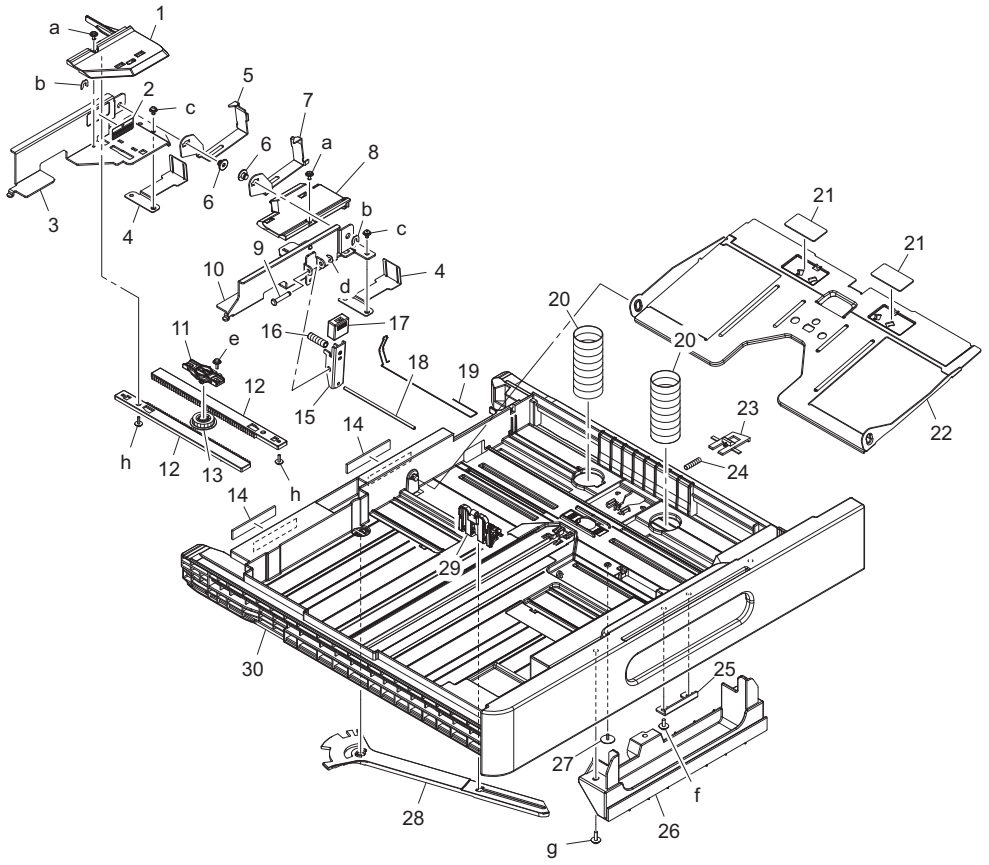


Page	Key	Parts No.	Description	Service Manual	Destinations	Class	Quantity
2	1	A3PFPP1J00	Ground Part			C	1
2	2	A3PFPP1800	Solenoid	Paper feed solenoid (SD1)		C	1
2	3	A3PEPP1X00	Photointtrupter	Paper empty sensor (PS1) Paper feed sensor (PS2) Tray set sensor (PS3) Paper size sensor (PS5)		I	4
2	4	A3PFPP1700	Bracket			D	1
2	5	1139316901	BUSHING			C	2
2	6	A3PFPP2300	Frame			D	1
2	7	4686336001	ROLLER			C	1
2	8	4011250401	BUSHING			C	1
2	9	4686333401	TORSION SPRING			C	1
2	10	4686333601	ACTUATOR			C	1
2	11	4686331001	ACTUATOR			C	1
2	12	4686333301	BRACKET			D	1
2	13	4658314402	COVER			D	1
2	14	4686331401	FRAME			D	1
2	15	4686335401	JOINT			D	1
2	16	4686335701	HOLD PLATE			D	2
2	17	4686335601	SEAL			C	2
2	18	4686331201	COLLAR			C	2
2	19	A3PFPP1H00	Feed Roller			A	2
2	20	4686333701	GUIDE			D	2
2	21	4498332801	BRACKET			D	1
2	22	4686335301	TORSION SPRING			C	1
2	23	4686335501	GUIDE PLATE			D	1

2	24	4498333302	AXLE PLATE			D	1
2	25	4686331301	SHAFT			D	1
2	a	A3PFPP1900	screw			C	
2	b	V153041003	screw			V	
2	c	V137030803	screw			V	
2	d	V137030603	screw			V	
2	e	V153030803	Screw			V	
2	f	V116030803	Screw			V	
2	g	A3PFPP1G00	E ring			C	
2	h	V218040086	E ring			V	

7.3 PAPER TRAY UNIT

P 3

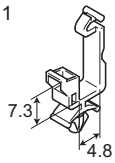
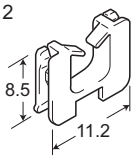


Page	Key	Parts No.	Description	Service Manual	Destinations	Class	Quantity
3	1	A3PFPP1U00	Regulating Plate			D	1
3	2	4002730601	LABEL CARRYING CAPACITY			C	1
3	3	A3PFPP1T00	Regulating Plate			D	1
3	4	A3PFPP1V00	Guide			D	2
3	5	A3PFPP1X00	Guide			D	1
3	6	4498334504	HOLD PLATE			D	2
3	7	A3PFPP2100	Guide			D	1
3	8	A3PFPP2000	Regulating Plate			D	1
3	9	4498382601	SHAFT			D	1
3	10	A3PFPP1Y00	Regulating Plate			D	1
3	11	A3PFPP2400	Adjust Plate			D	1
3	12	A02F623200	Rack			C	2
3	13	1164304501	GEAR 20T			C	1
3	14	4498383301	FRICTION SHEET			C	2
3	15	4686334601	LEVER			C	1
3	16	4686334701	PRESSURE SPRING			C	1
3	17	A3PFPP2200	Cover			D	1

3	18	4686334802	SHAFT			D	1
3	19	A3PFPP1L00	Ground Part			C	1
3	20	4686336601	PRESSURE SPRING			C	2
3	21	4686336501	FRICTION SHEET			C	2
3	22	A3PFPP1Q00	Lifting Plate			D	1
3	23	1164306101	LEVER			C	1
3	24	A3PFPP1600	Pressure Spring			C	1
3	25	4686334901	BRACKET			D	1
3	26	A3PFPP1P00	Cover			D	1
3	27	4109200301	SHOULDER SCREW			C	1
3	28	A3PEPP2R00	Lever			C	1
3	29	A3PEPP2Q00	Regulating Plate			C	1
3	30	A3PFPP1K00	Cassette			D	1
3	a	V137030603	screw			V	
3	b	V218040086	E ring			V	
3	c	V116030603	Screw			V	
3	d	V218030086	E ring			V	
3	e	A3PEPP0800	Scew			C	
3	f	V153040803	screw			V	
3	g	V153041003	screw			V	
3	h	V153030803	Screw			V	

7.4 WIRING ACCESSORIES AND JIGS

P 4

1 	6	11	16	21	26	31	36
2 	7	12	17	22	27	32	37
3	8	13	18	23	28	33	38
4	9	14	19	24	29	34	39
5	10	15	20	25	30	35	40

Page	Key	Parts No.	Description	Service Manual	Destinations	Class	Quantity
4	1	V500010020	Saddle			D	
4	2	V570010021	Saddle			D	

7.5 MAINTENANCE LIST

- The items with no Page/Key numbers are not handled as spare parts.

No.	Section	PM Parts Description	Maintenance Cycle (K=1,000)	Parts No.	Destinations	Page/Key	Note

			QTY	Replace				
1	PF-507	Feed roller	1	165K	A3PFPP1H00		P2-19	

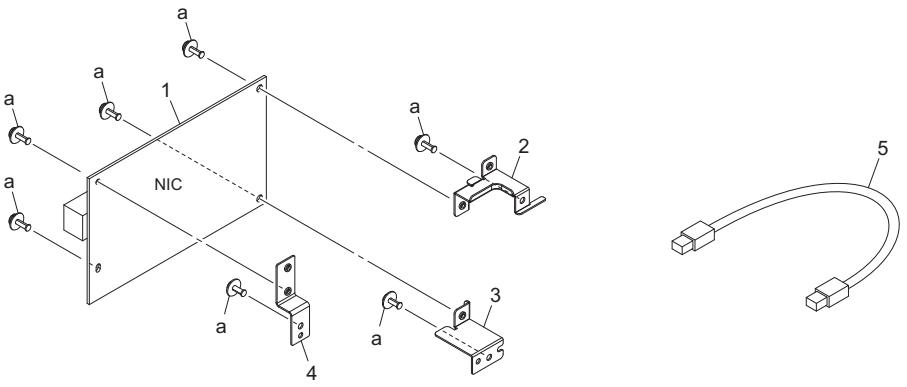
7.6 DESTINATION

Destination No.		Destinations		V	Hz	Model No.
A	A1	JAPAN				
	A2	JAPAN				
B		USA, CANADA		120	60	A3PFWY1
C		EUROPEAN TYPE		220-240	50/60	A3PFWY1
D	D1	S.E ASIA TYPE	THAILAND,SRI LANKA,SINGAPORE,MALAYSIA,HONGKONG, PAKISTAN,INDIA,BANGLADESH,INDONESIA	220-240	50/60	A3PFWY1
	D3	OCEAINA TYPE	AUSTRALIA,NEW ZEALAND	220-240	50/60	A3PFWY1
E		PHILIPPINES				
F	F1	SAUDI ARABIA				
	F2	SAUDI ARABIA		220-240	50/60	A3PFWY1
G	G1	C.S AMERICA		220-240	50/60	A3PFWY1
	G2	C.S AMERICA		120	60	A3PHWY1
H		TAIWAN		110	60	A3PFWY1
I		JORDAN, LEBANON, SYRIA, SOUTH AFRICA, IRAQ, IRAN, N.YEMEN, CAMEROON, UAE, BAHRAIN, OMAN, QATAR, KUWAIT, KENYA, TUNISIA, IVORY COAST, MOROCCO		220-240	50/60	A3PFWY1
J		CHINA		220-240	50/60	A3PFWY1
K		KOREA		220-240	50/60	A3PFWY1

8. OTHER OPTION (NC-504)

8.1 NC-504

P 1



Page	Key	Parts No.	Description	Service Manual	Destinations	Class	Quantity
1	1	A4M3PP1000	NIC Borard			I	1
1	2	A4M1PP1100	Bracket			D	1
1	3	A4M1PP1000	Bracket			D	1
1	4	A4M1PP1300	Bracket			D	1
1	5	A4M1PP1400	Wire Harness Assy			D	1
1	a	V116030803	Screw			V	

8.2 DESTINATION

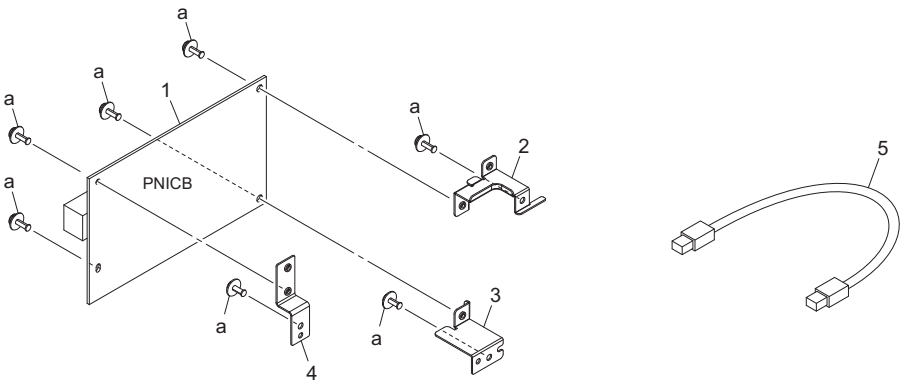
Destination No.		Destinations		V	Hz	Model No.
A	A1	JAPAN				
	A2	JAPAN				
B		USA, CANADA		120	60	A4M3WY1
C		EUROPEAN TYPE		220-240	50/60	A4M3WY3
D	D1	S.E ASIA TYPE	THAILAND,SRI LANKA,SINGAPORE,MALAYSIA,HONGKONG, PAKISTAN,INDIA,BANGLADESH,INDONESIA	220-240	50/60	A4M3WY1
	D3	OCEAINA TYPE	AUSTRALIA,NEW ZEALAND	220-240	50/60	A4M3WY1
E		PHILIPPINES		220-240	50/60	A4M3WY1
F	F1	SAUDI ARABIA				
	F2	SAUDI ARABIA		220-240	50/60	A4M3WY1
G	G1	C.S AMERICA		220-240	50/60	A4M3WY1
	G2	C.S AMERICA		120	60	A4M3WY1
H		TAIWAN		110	60	A4M3WY1

I	JORDAN, LEBANON, SYRIA, SOUTH AFRICA, IRAQ, IRAN, N.YEMEN, CAMEROON, UAE, BAHRAIN, OMAN, QATAR, KUWAIT, KENYA, TUNISIA, IVORY COAST, MOROCCO	220-240	50/60	A4M3WY1
J	CHINA	220-240	50/60	A4M3WY1
K	KOREA	220-240	50/60	A4M3WY1

9. OTHER OPTION (IC-209)

9.1 IC-209

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Page	Key	Parts No.	Description	Service Manual	Destinations	Class	Quantity
1	1	A4M1PP1200	NIC Borard			I	1
1	2	A4M1PP1100	Bracket			D	1
1	3	A4M1PP1000	Bracket			D	1
1	4	A4M1PP1300	Bracket			D	1
1	5	A4M1PP1400	Wire Harness Assy			D	1
1	a	V116030803	Screw			V	

9.2 DESTINATION

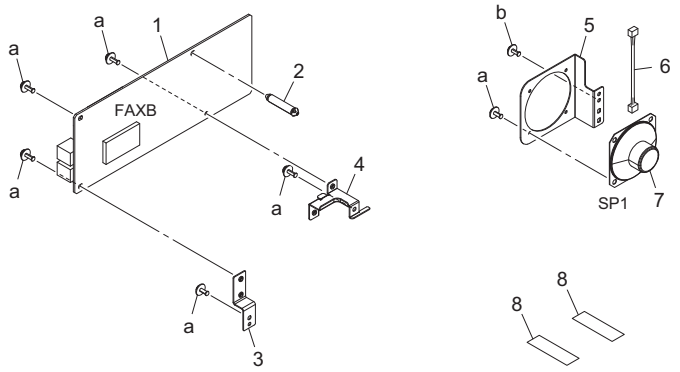
Destination No.		Destinations		V	Hz	Model No.
A	A1	JAPAN				
	A2	JAPAN				
B		USA, CANADA		120	60	A4M1WY1
C		EUROPEAN TYPE		220-240	50/60	A4M1WY3
D	D1	S.E ASIA TYPE	THAILAND,SRI LANKA,SINGAPORE,MALAYSIA,HONGKONG, PAKISTAN,INDIA,BANGLADESH,INDONESIA	220-240	50/60	A4M1WY1
	D3	OCEAINA TYPE	AUSTRALIA,NEW ZEALAND	220-240	50/60	A4M1WY1
E		PHILIPPINES		220-240	50/60	A4M1WY1
F	F1	SAUDI ARABIA				
	F2	SAUDI ARABIA		220-240	50/60	A4M1WY1
G	G1	C.S AMERICA		220-240	50/60	A4M1WY1
	G2	C.S AMERICA		120	60	A4M1WY1
H		TAIWAN		110	60	A4M1WY1

I	JORDAN, LEBANON, SYRIA, SOUTH AFRICA, IRAQ, IRAN, N.YEMEN, CAMEROON, UAE, BAHRAIN, OMAN, QATAR, KUWAIT, KENYA, TUNISIA, IVORY COAST, MOROCCO	220-240	50/60	A4M1WY1
J	CHINA	220-240	50/60	A4M1WY1
K	KOREA	220-240	50/60	A4M1WY1

10. OTHER OPTION (FK-510)

10.1 FK-510

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Page	Key	Parts No.	Description	Service Manual	Destinations	Class	Quantity
1	1	A4M2PP1000	PWB Assy			I	1
1	2	V502010021	spacer			D	1
1	3	A4M1PP1300	Bracket			D	1
1	4	A4M1PP1100	Bracket			D	1
1	5	A4M2PP1100	Bracket			D	1
1	6	A4M2PP1500	Wire Harness Assy			D	1
1	7	A4M2PP1400	Speaker			D	1
1	8	A4M2PP1200	FFC Cable			D	2
1	a	V116030803	Screw			V	
1	b	V137030603	screw			V	

10.2 DESTINATION

Destination No.		Destinations		V	Hz	Model No.
A	A1	JAPAN				
	A2	JAPAN				
B		USA, CANADA		120	60	A4M2011
C		EUROPEAN TYPE		220-240	50/60	A4M2021
D	D1	S.E ASIA TYPE	THAILAND,SRI LANKA,SINGAPORE,MALAYSIA,HONGKONG, PAKISTAN,INDIA,BANGLADESH,INDONESIA	220-240	50/60	A4M2041
	D3	OCEAINA TYPE	AUSTRALIA,NEW ZEALAND	220-240	50/60	A4M2051/A4M20E1
E		PHILIPPINES		220-240	50/60	A4M2041
F	F1	SAUDI ARABIA				
	F2	SAUDI ARABIA		220-240	50/60	A4M2011

G	G1	C.S AMERICA	220-240	50/60	A4M2011
	G2	C.S AMERICA	120	60	A4M2011
H		TAIWAN	110	60	A4M2071
I		JORDAN, LEBANON, SYRIA, SOUTH AFRICA, IRAQ, IRAN, N.YEMEN, CAMEROON, UAE, BAHRAIN, OMAN, QATAR, KUWAIT, KENYA, TUNISIA, IVORY COAST, MOROCCO	220-240	50/60	A4M20K1/A4M2041
J		CHINA	220-240	50/60	A4M2081
K		KOREA	220-240	50/60	A4M2091



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