

FS-C2026MFP FS-C2126MFP

SERVICE MANUAL

Published in January 2014 2KXSM068 Rev. 8

CAUTION

RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE. DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

It may be illegal to dispose of this battery into the municipal waste stream. Check with your local solid waste officials for details in your area for proper disposal.

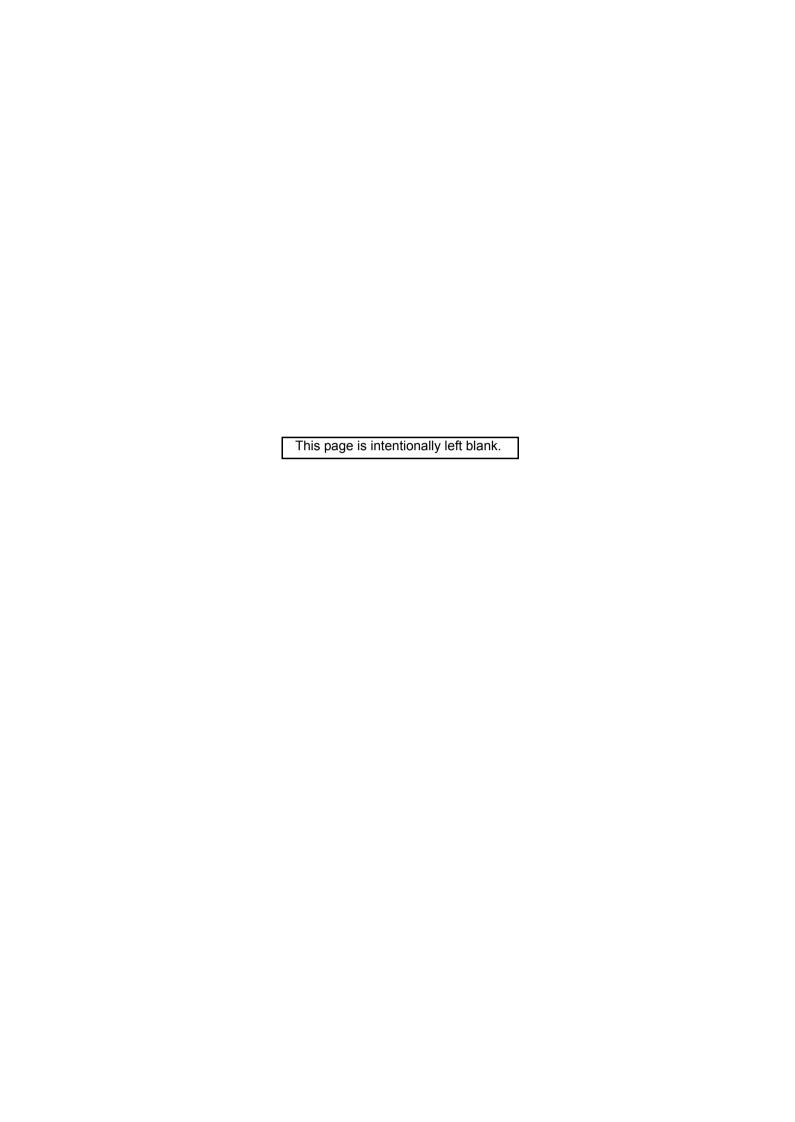
ATTENTION

IL Y A UN RISQUE D'EXPLOSION SI LA BATTERIE EST REMPLACEE PAR UN MODELE DE TYPE INCORRECT. METTRE AU REBUT LES BATTERIES UTILISEES SELON LES INSTRUCTIONS DONNEES.

Il peut être illégal de jeter les batteries dans des eaux d'égout municipales. Vérifiez avec les fonctionnaires municipaux de votre région pour les détails concernant des déchets solides et une mise au rebut appropriée.

Revision history

Revision	Date	Replaced pages	Remarks
1	July 7, 2010	1-1-1, 1-1-2, 1-1-4, 1-3-1, 1-3-4, 1-3-18, 1-3-55, 1-3-59 to 1-3-63	-
2	September 17, 2010	Contents, 1-1-1, 1-1-7, 1-2-2 to 1-2-13, 1-3-2, 1-3-4, 1-3-6, 1-3-7, 1-3-9 to 1-3-11, 1-3-13, 1-3-16, 1-3-19, 1-3-50, 1-3-58, 1-3-63, 1-3-65, 1-4-4 to 1-4-6, 1-4-21 to 1-4-27, 1-4-29, 1-4-30, 1-5-7, 1-5-8, 1-5-10 to 1-5-13, 1-5-17, 1-5-26, 1-5-27, 1-5-29, 1-5-30, 1-5-35, 1-5-53, 1-5-65 to 1-5-67, 2-1-13, 2-1-16, 2-1-20, 2-1-26, 2-1-28, 2-2-1 to 2-2-3, 2-2-5, 2-2-7, 2-3-2, 2-3-5 to 2-3-9, 2-3-11, 2-3-15, 2-3-16, 2-3-18, 2-4-1 to 2-4-9, 2-4-11	-
3	November 8, 2010	Contents, 1-1-1, 1-3-7, 1-4-2, 1-4-5, 1-4-17, 1-4-27, 1-4-38, 1-4-40, 1-4-42, 1-4-43, 1-4-44, 1-5-4, 1-5-10, 1-5-12, 2-1-1, 2-1-5, 2-1-6, 2-1-11, 2-1-12, 2-1-21, 2-1-22, 2-2-4, 2-2-5, 2-3-5, 2-3-8, 2-4-9, 2-4-11	-
4	April 6, 2011	Safety precautions, 1-2-5, 1-3-2 to 1-3-4, 1-3-15, 1-5-11, 1-5-17	-
5	June 18, 2012	Contents, 1-3-9, 1-3-23, 1-3-51, 1-6-1, 2-4-3, 2-4-9 to 16	-
6	1 December 2012	Contents, 1-6-1, 1-6-2, 2-4-7	-
7	12 February 2013	Contents, 1-3-2 to 5, 1-3-12 to 24, 1-32 to 34, 1-3-37, Address	-
8	26 December 2013	Contents, 1-1-3, 1-3-2, 1-3-10, 1-3-11, 1-3-13, 1-3-15, 1-3-79, 1-5-29, 1-5-30, 1-5-52 to 77, Address	-



Safety precautions

This booklet provides safety warnings and precautions for our service personnel to ensure the safety of their customers, their machines as well as themselves during maintenance activities. Service personnel are advised to read this booklet carefully to familiarize themselves with the warnings and precautions described here before engaging in maintenance activities.

Safety warnings and precautions

Various symbols are used to protect our service personnel and customers from physical danger and to prevent damage to their property. These symbols are described below:

▲ DANGER: High risk of serious bodily injury or death may result from insufficient attention to or incorrect compliance with warning messages using this symbol.

WARNING: Serious bodily injury or death may result from insufficient attention to or incorrect compliance with warning messages using this symbol.

ACAUTION: Bodily injury or damage to property may result from insufficient attention to or incorrect compliance with warning messages using this symbol.

Symbols

The triangle (\triangle) symbol indicates a warning including danger and caution. The specific point of attention is shown inside the symbol.



General warning.



Warning of risk of electric shock.



Warning of high temperature.

○ indicates a prohibited action. The specific prohibition is shown inside the symbol.



General prohibited action.



Disassembly prohibited.

indicates that action is required. The specific action required is shown inside the symbol.



General action required.



Remove the power plug from the wall outlet.



Always ground the copier.

1. Installation Precautions

AWARNING

• Do not use a power supply with a voltage other than that specified. Avoid multiple connections to one outlet: they may cause fire or electric shock. When using an extension cable, always check that it is adequate for the rated current.



 Connect the ground wire to a suitable grounding point. Not grounding the copier may cause fire or electric shock. Connecting the earth wire to an object not approved for the purpose may cause explosion or electric shock. Never connect the ground cable to any of the following: gas pipes, lightning rods, ground cables for telephone lines and water pipes or faucets not approved by the proper authorities.



A CAUTION:

• Do not place the copier on an infirm or angled surface: the copier may tip over, causing injury. ...



• Do not install the copier in a humid or dusty place. This may cause fire or electric shock.



Do not install the copier near a radiator, heater, other heat source or near flammable material. This may cause fire.



Allow sufficient space around the copier to allow the ventilation grills to keep the machine as cool
as possible. Insufficient ventilation may cause heat buildup and poor copying performance.



Always handle the machine by the correct locations when moving it.



Always use anti-toppling and locking devices on copiers so equipped. Failure to do this may cause
the copier to move unexpectedly or topple, leading to injury.



Avoid inhaling toner or developer excessively. Protect the eyes. If toner or developer is accidentally ingested, drink a lot of water to dilute it in the stomach and obtain medical attention immediately. If it gets into the eyes, rinse immediately with copious amounts of water and obtain medical attention.

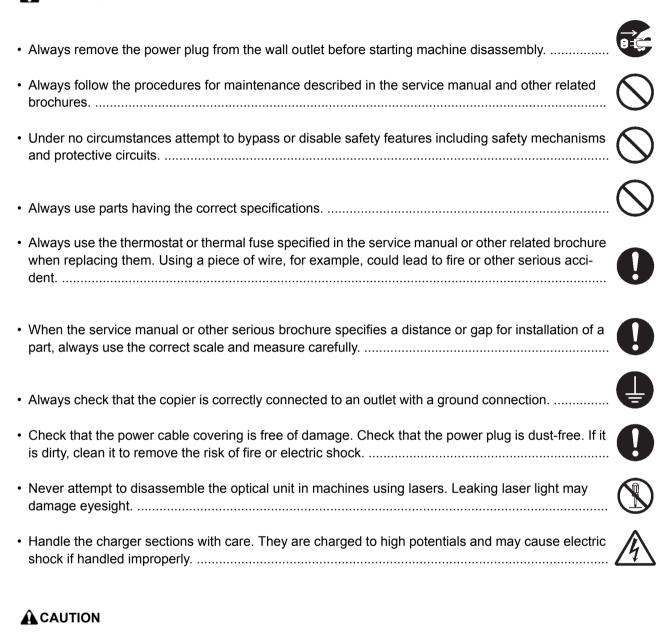


Advice customers that they must always follow the safety warnings and precautions in the copier's instruction handbook.



2. Precautions for Maintenance

AWARNING



 Wear safe clothing. If wearing loose clothing or accessories such as ties, make sure they are safely secured so they will not be caught in rotating sections.



Use utmost caution when working on a powered machine. Keep away from chains and belts.



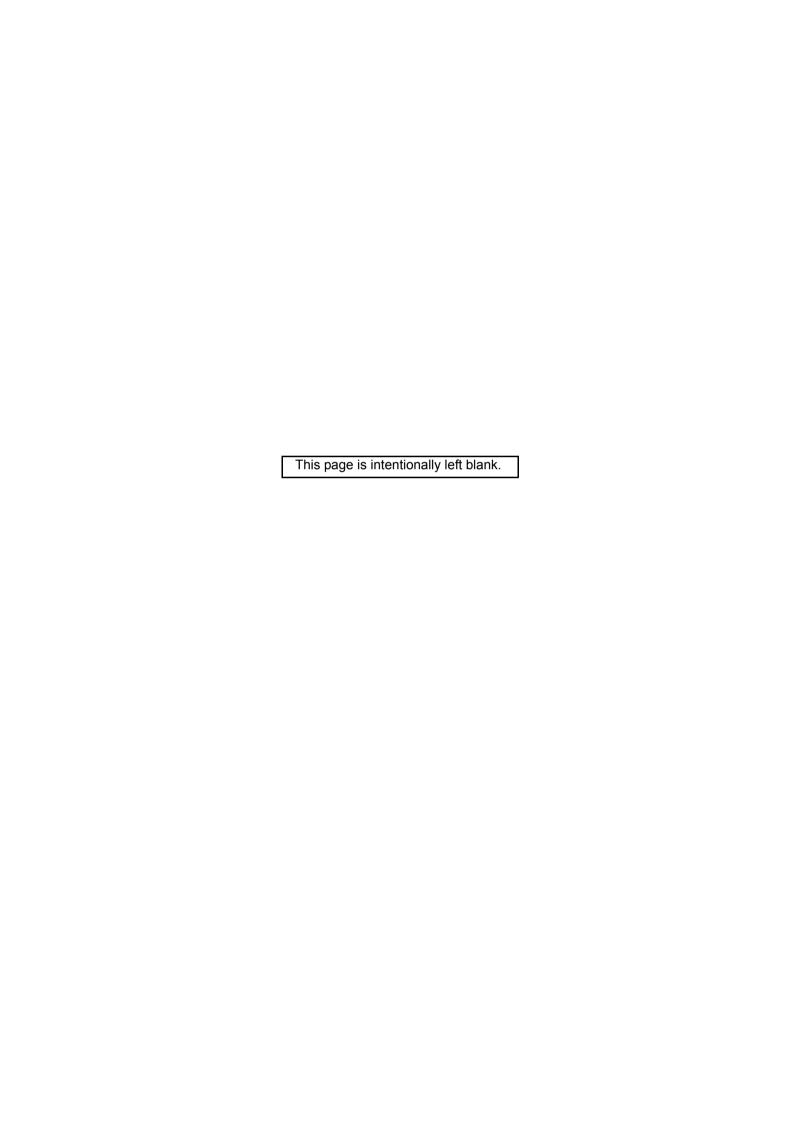
Handle the fixing section with care to avoid burns as it can be extremely hot.



Check that the fixing unit thermistor, heat and press rollers are clean. Dirt on them can cause abnormally high temperatures.



•	Do not remove the ozone filter, if any, from the copier except for routine replacement	\bigcirc
•	Do not pull on the AC power cord or connector wires on high-voltage components when removing them; always hold the plug itself.	\bigcirc
•	Do not route the power cable where it may be stood on or trapped. If necessary, protect it with a cable cover or other appropriate item.	\bigcirc
•	Treat the ends of the wire carefully when installing a new charger wire to avoid electric leaks	0
•	Remove toner completely from electronic components.	
•	Run wire harnesses carefully so that wires will not be trapped or damaged	U
•	After maintenance, always check that all the parts, screws, connectors and wires that were removed, have been refitted correctly. Special attention should be paid to any forgotten connector, trapped wire and missing screws.	0
•	Check that all the caution labels that should be present on the machine according to the instruction handbook are clean and not peeling. Replace with new ones if necessary.	0
•	Handle greases and solvents with care by following the instructions below: Use only a small amount of solvent at a time, being careful not to spill. Wipe spills off completely. Ventilate the room well while using grease or solvents. Allow applied solvents to evaporate completely before refitting the covers or turning the power switch on. Always wash hands afterwards.	0
•	Never dispose of toner or toner bottles in fire. Toner may cause sparks when exposed directly to fire in a furnace, etc.	\bigcirc
•	Should smoke be seen coming from the copier, remove the power plug from the wall outlet immediately.	0 5
3	. Miscellaneous	
4	⚠ WARNING	
•	Never attempt to heat the drum or expose it to any organic solvents such as alcohol, other than the specified refiner; it may generate toxic gas.	\bigcirc
•	Keep the machine away from flammable liquids, gases, and aerosols. A fire or an electric shock might occur.	



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1-1-1 Specifications

Machine

ltem		Specifications	
		3 in 1 model (without FAX)	4 in 1 model (with FAX)
Туре		Desktop	
Printing method		Electrophotography by semiconductor laser, tandem (4) drum system	
Origi	inals	Sheet, Book, 3-dimensional objects (m	naximum original size: Folio/Legal)
Original fe	ed system	Fixed	
Paper weight	Cassette	60 to 163 g/m ² (Duplex: 60 to 163 g/m ²	2)
l aper weight	MP tray	60 to 220 g/m², 230 μm (Cardstock)	
	Cassette	Plain, Recycled, Preprinted, Bond, Col Letterhead, Thick, High quality, Custor	, , ,
Paper type	MP tray	Plain, Transparency, Vellum, Labels, R Cardstock, Color (Colour), Prepunched Coated, High quality, Custom 1 to 8	•
	Cassette	A4, A5, A6, B5, Letter, Legal, Statemer Custom	nt, Executive, Oficio II, Folio, 16K,
Paper size	MP tray	A4, A5, A6, B5, ISO B5, B6, Letter, Let Folio, 16K, Envelope #10, Envelope #8 Envelope DL, Envelope C5, Postcards Youkei 4, Custom	9, Envelope #6, Envelope Monarch,
Zoom level		Manual mode: 25 to 400%, 1% increm Auto mode : 400%, 200%, 141%, 12 64%, 50%, 25%	nents 29%, 115%, 90%, 86%, 78%, 70%,
Copying speed	Simplex	A4R : 26 sheets/min LetterR : 28 sheets/min Legal : 23 sheets/min B5R : 28 sheets/min A5R : 28 sheets/min A6R : 28 sheets/min	
	Duplex	A4R : 13 sheets/min LetterR : 13 sheets/min Legal : 12 sheets/min	
First copy time	B/W	When using the DP : 11.0 s or les When the DP is not used: 10.0 s or les	
(A4, feed from cassette)	Color	When using the DP : 13.0 s or les When the DP is not used: 12.0 s or les	
Warm-up time (22 °C/71.6 °F, 60% RH)		Power on : 29 s or less Sleep mode: 20 s or less	
Paper	Cassette	150 sheets (80g/m²)	
capacity	MP tray	50 sheets (80 g/m², plain paper, A4/Le	tter or less)
Output tray capacity		150 sheets (80g/m²)	
Continuous copying		1 to 999 sheets	

Item		Specifications	
		3 in 1 model (without FAX)	4 in 1 model (with FAX)
Light source		Exposure lamp	
Scanning	g system	Flat bed scanning by CCD image sens	or
Photoco	nductor	OPC drum (diameter 30 mm)	
lmage wri	te system	Semiconductor laser	
Charging	g system	Charger roller	
Developing system		Touch down developing system Developer: 2-component Toner replenishing: Automatic from the	toner container
Transfer	system	Primary: Transfer belt Secondary: Transfer roller	
Separatio	n system	Small diameter separation	
Cleaning	ı system	Drum: Counter blade	
Charge eras	sing system	Exposure by cleaning lamp (LED)	
Fusing system		Heat and pressure fusing with the heat Heat source: halogen heater Abnormally high temperature protection	·
CF	บ	PowerPC464 (667MHz)	
Main	Standard	768 MB	
memory	Maximum	1792 MB	
Interface	Standard	USB interface connector: 1 (USB Hi-sp USB host: 2 Network interface: 1 (10BASE-T/100B/	
	Option	KUIO/W slot: 1	
Reso	lution	600 × 600 dpi	
	Temperature	10 to 32.5 °C/50 to 90.5 °F	
Operating	Humidity	15 to 80% RH	
environment	Altitude	2,500 m/8,202 ft or less	
	Brightness	1,500 lux or less	
Dimensions (W × D × H)		514 × 550 × 580 mm 20 1/4 × 21 5/8 × 22 13/16"	
Weight		36.5 kg / 80.3 lb (with toner container)	
Space required (W × D)		514 × 1020 mm (using MP tray) 20 1/4 × 40 3/16" (using MP tray)	
Power source		120 V AC, 60 Hz, more than 8.9 A 220 - 240 V AC, 50/60 Hz, more than 4	1.7 A
Options		Paper feeder × 2, Expanded memory	

Document processor

Item	Specifications
Original feed method	Automatic feed
Supported original types	Sheet originals
Original sizes	Maximum: A4/Legal Minimum: A5/Statement
Original weights	Simplex: 50 to 120 g/m ² Duplex: 50 to 110 g/m ²
Loading capacity	50 sheets (50 to 80 g/m²) or less
Dimensions (W × D × H)	490 × 338 × 104 mm 19 5/16 × 13 5/16 × 4 1/8"
Weight	3 kg/ 6.6 lb or less

Printer

Item	Specifications
Printing speed	Same as copying speed.
First print time (A4, feed from cassette)	B/W: 9.0 s or less Color: 10.5 s or less (Excluding time for system stabilization immediately after turning on the main power.)
Resolution	600 dpi
Operating system	Windows 2000, Windows XP, Windows XP Professional, Windows Server 2003, Windows Server 2003 x64 Edition, Windows Vista x86 Edition, Windows Vista x64 Edition, Windows 7 x86 Edition, Windows 7 x64 Edition, Windows Server 2008, Windows Server 2008 x64 Edition, Apple Macintosh OS 10.x
Interface	USB interface connector: 1 (USB Hi-speed) USB host: 2 Network interface: 1 (10BASE-T/100BASE-TX)
Page description language	PRESCRIBE

Scanner

ltem		Specifications
Operating system		Windows 2000 (Service Pack 4), Windows XP, Windows Vista, Windows 7, Windows Server 2003, Windows Server 2008
System requirements		IBM PC/AT compatible CPU: Celeron 600 MHz or higher RAM: 128 MB or more HDD free space: 20 MB or more Interface: Ethernet
Reso	lution	600 dpi, 400 dpi, 300 dpi, 200 dpi
File fo	ormat	JPEG, TIFF, PDF, XPS
Scanning	Simplex	B/W : 35 images/min Color: 25 images/min (A4 landscape, 300 dpi, Image quality: Text/Photo original)
speed	Duplex	B/W : 18 images/min Color: 13 images/min (A4 landscape, 300 dpi, Image quality: Text/Photo original)
Inter	face	Ethernet (10 BASE-T/100 BASE-TX)
Network protocol		TCP/IP
Transmission system		PC transmission SMB Scan to SMB FTP Scan to FTP, FTP over SSL E-mail transmission SNTP Scan to E-mail TWAIN scan*1 WIA scan*2

^{*1} Available operating system: Windows 2000 (Service Pack 4), Windows XP, Windows Vista, Windows Server 2008, Windows 7

^{*2} Available operating system: Windows Vista, Windows Server 2008, Windows 7

FAX (4 in 1 model (with FAX) only)

Item	Specifications
Compatibility	G3
Communication line	Subscriber telephone line
Transmission time	3 s or less (33600 bps, JBIG, ITU-T A4 #1 chart)
Transmission speed	33600/31200/28800/26400/24000/21600/19200/16800/14400/12000/9600/ 7200/4800/2400 bps
Coding scheme	JBIG/MMR/MR/MH
Error correction	ECM
Original size	Max. width: 8 1/2"/216 mm Max. length: 14"/356 mm
Automatic document feed	Max. 50 sheets
Scanner resolution	Horizontal × Vertical 200 × 100 dpi Normal (8 dot/mm × 3.85 line/mm) 200 × 200 dpi Fine (8 dot/mm × 7.7 line/mm) 200 × 400 dpi Super fine (8 dot/mm × 15.4 line/mm) 400 × 400 dpi Ultra fine (16 dot/mm × 15.4 line/mm)
Printing resolution	600 × 600 dpi
Gradations	256 shades (Error diffusion)
One-Touch key	22 keys
Multi-Station transmission	Max. 100 destinations
Substitute memory reception	256 sheets or more (when using ITU-T A4 #1 chart)
Image memory capacity	3.5 MB (standard) (for incoming faxed originals)
Report output	Sent result report, FAX RX result report, Report for job canceled before sending, Activity report, Status page

NOTE: These specifications are subject to change without notice.

1-1-2 Parts names

(1) Machine (front side)

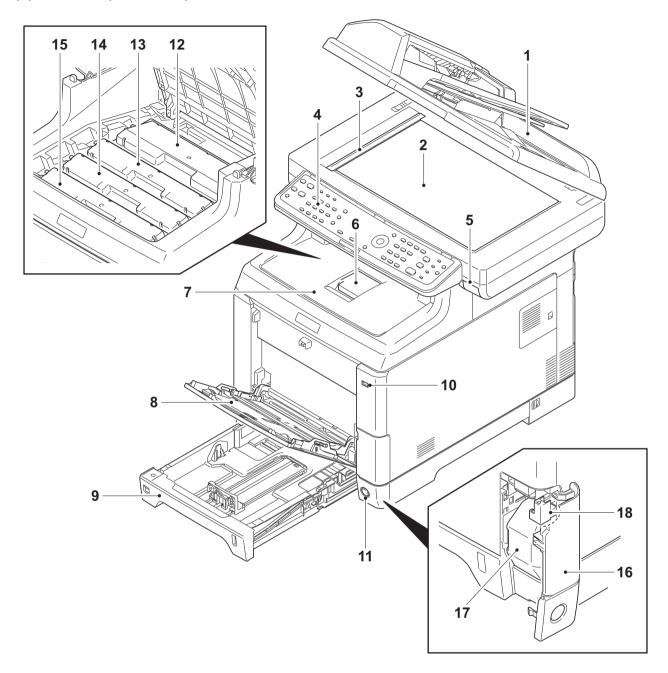


Figure 1-1-1

- 1. Document processor (DP)
- 2. Contact glass
- 3. Original size Indicator plate
- 4. Operation panel
- 5. Top tray lever
- 6. Paper stopper
- 7. Top tray
- 8. MP (Multi-Purpose) tray
- 9. Cassette

- 10. USB memory slot
- 11. Main power switch
- 12. Toner container K
- 13. Toner container M
- 14. Toner container C
- 15. Toner container Y
- 16. Waste toner cover
- 17. Waste toner box
- 18. Lock release button

(2) Machine (rear side)

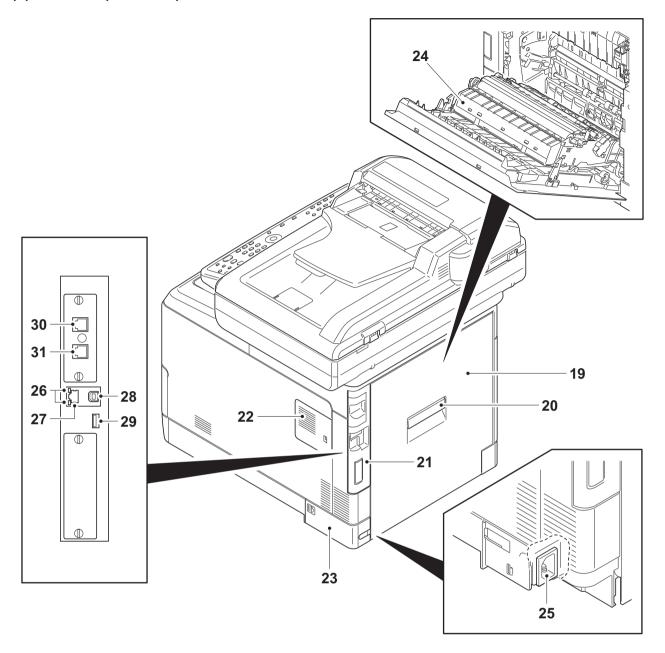


Figure 1-1-2

- 19. Rear cover
- 20. Rear cover lever
- 21. IF cover
- 22. Memory cover
- 23. Power cord cover
- 24. Paper conveying unit
- 25. Power cord connector

- 26. Network indicators
- 27. Network interface connector
- 28. USB interface connector
- 29. USB memory slot
- 30. LINE connector*
- 31. TEL connector*
- *: 4 in 1 model (with FAX) only

(3) Document processor

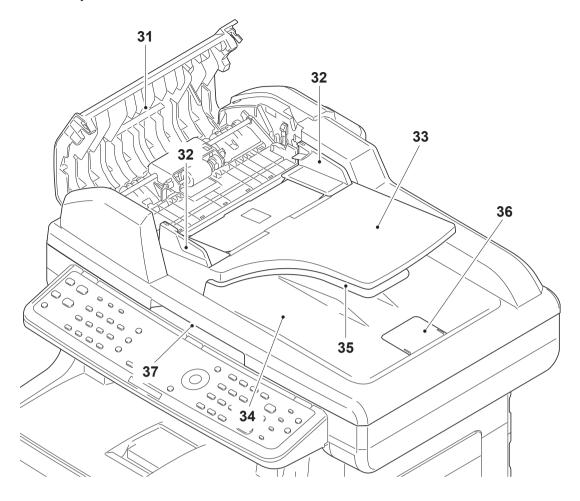
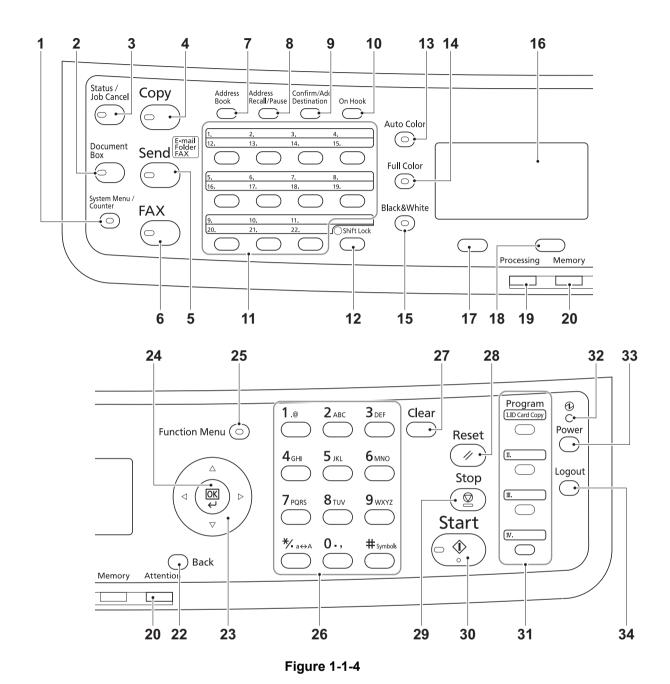


Figure 1-1-3

- 32. DP top cover
- 33. Original width guides
- 34. Original table
- 35. Original eject table
- 36. Switchback table
- 37. Original stopper
- 38. Opening Handle

(4) Operation panel



1. System menu/Counter key

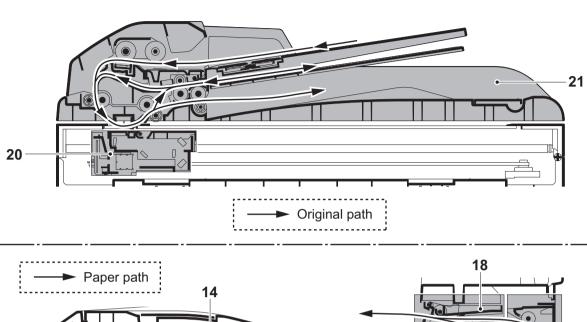
- 2. Document box key
- 3. Status/Job cancel key
- 4. Copy key
- 5. Send key
- 6. FAX key*
- 7. Address book key
- 8. Address recall/Pause key*
- 9. Confirm/Add destination key
- 10. On Hook key*
- 11. One-touch keys
- 12. Shift Lock key

- 13. Auto color key
- 14. Full color key
- 15. Black and White key
- 16. Message display
- 17. Left Select key
- 18. Right Select key
- 19. Processing indicator
- 20. Memory indicator
- 21. Attention indicator
- 22. Back key
- 23. Cursor keys
- 24. OK key

- 25. Function Menu key
- 26. Numeric keys
- 27. Clear key
- 28. Reset key
- 29. Stop key
- 30. Start key
- 31. Program keys
- 32. Main power LED
- 33. Power key
- 34. Logout key

*: 4 in 1 model (with FAX) only

1-1-3 Machine cross section



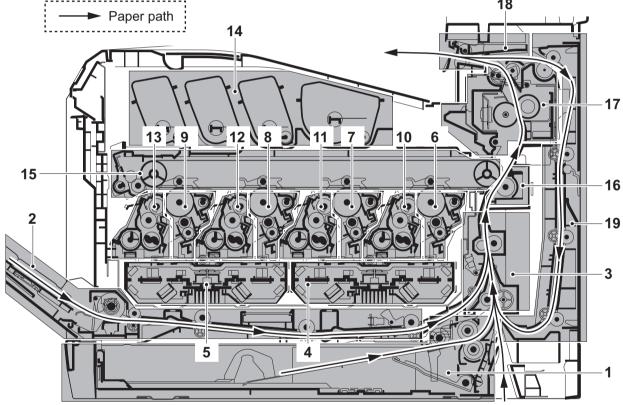


Figure 1-1-5

- 1. Cassette paper feed section
- 2. MP tray paper feed section
- 3. Paper conveying section
- 4. Laser scanner unit KM
- 5. Laser scanner unit CY
- 6. Drum unit K
- 7. Drum unit M
- 8. Drum unit C

- 9. Drum unit Y
- 10. Developing unit K
- 11. Developing unit M
- 12. Developing unit C
- 13. Developing unit Y
- 14. Toner container section
- 15. Primary transfer section
- 16. Secondary transfer/Separation sections
- 17. Fuser section
- 18. Eject/Feed shift sections
- 19. Duplex section
- 20. Image scanner unit
- 21. Document processor

1-2-1 Installation environment

1. Temperature: 10 to 32.5°C/50 to 90.5°F

2. Humidity: 15 to 80% RH

3. Power supply: 120 V AC, 8.9 A

220 - 240 V AC, 4.7 A

4. Power source frequency: 50 Hz ±2%/60 Hz ±2%

5. Installation location

Avoid direct sunlight or bright lighting. Ensure that the photoconductor will not be exposed to direct sunlight or other strong light when removing paper jams.

Avoid locations subject to high temperature and high humidity or low temperature and low humidity; an abrupt change in the environmental temperature; and cool or hot, direct air.

Avoid places subject to dust and vibrations.

Choose a surface capable of supporting the weight of the machine.

Place the machine on a level surface (maximum allowance inclination: 1°).

Avoid air-borne substances that may adversely affect the machine or degrade the photoconductor, such as mercury, acidic of alkaline vapors, inorganic gasses, NOx, SOx gases and chlorine-based organic solvents.

Select a well-ventilated location.

6. Allow sufficient access for proper operation and maintenance of the machine.

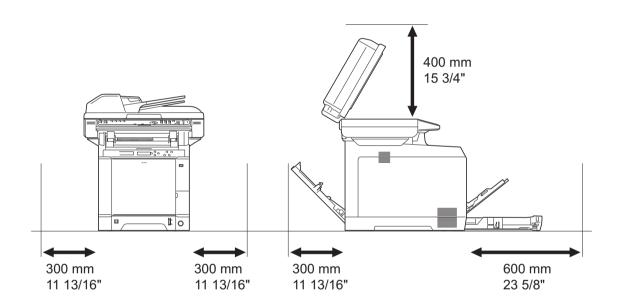


Figure 1-2-1

1-2-2 Unpacking

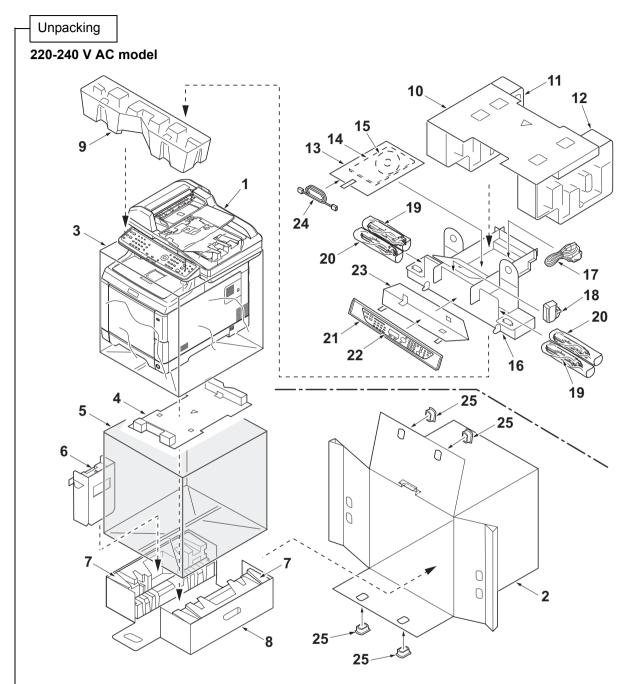


Figure 1-2-2

- 1. Machine
- 2. Outer case
- 3. Machine cover (620 × 580)
- 4. Bottom spacer
- 5. Plastic bag (650 × 650)
- 6. Left spacer
- 7. Bottom pads
- 8. Bottom case
- 9. Front pad

- 10. Top spacer
- 11. Top pad L
- 12. Top pad R
- 13. Plastic bag (240 × 350)
- 14. Installation guide etc.
- 15. CD-ROM*
- 16. Middle spacer
- 17. Power cord
- 18. Waste toner box

- 19. Toner containers
- 20. Plastic bags (200 × 450)
- 21. Plastic bag (250 × 600)
- 22. Operation labels
- 23. Operation label pad
- 24. Modular cable**
- 25. Hinge joints
- *: 240 V AC model only.
- **: 4 in 1 model (with FAX) only.

120 V AC model

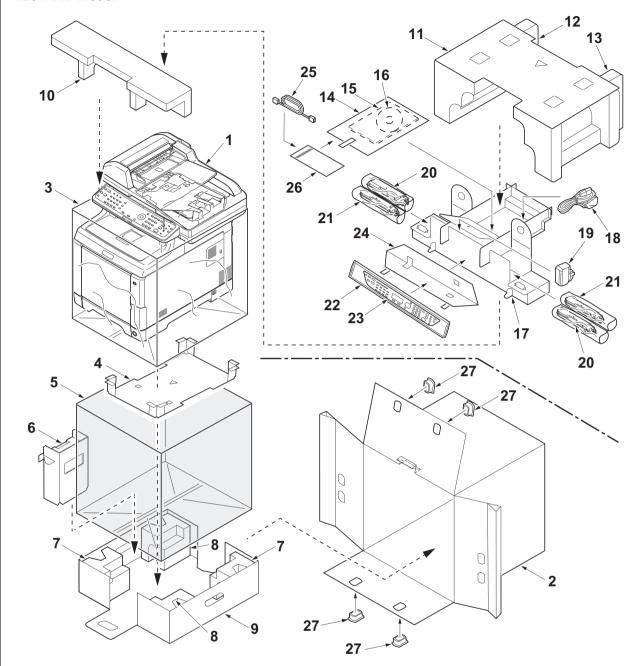


Figure 1-2-3

- 1. Machine
- 2. Outer case
- 3. Machine cover (620 × 580)
- 4. Bottom spacer
- 5. Plastic bag (650 × 650)
- 6. Left spacer
- 7. Bottom pads A
- 8. Bottom pads B
- 9. Bottom case

- 10. Front pad
- 11. Top spacer
- 12. Top pad L
- 13. Top pad R
- 14. Plastic bag (240 × 350)
- 15. Installation guide etc.
- 16. CD-ROM
- 17. Middle spacer
- 18. Power cord

- 19. Waste toner box
- 20. Toner containers
- 21. Plastic bags (200 × 450)
- 22. Plastic bag (250 × 600)
- 23. Operation labels
- 24. Operation label pad
- 25. Modular cable*
- 26. Plastic bag*
- 27. Hinge joints
- *: 4 in 1 model (with FAX) only.

Place the machine on a level surface.

Removing the tapes and pads

- 1. Open the DP.
- 2. Remove two tapes.
- 3. Remove two sheets.

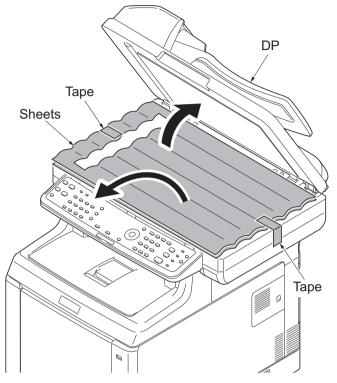


Figure 1-2-4

4. Remove the paper.

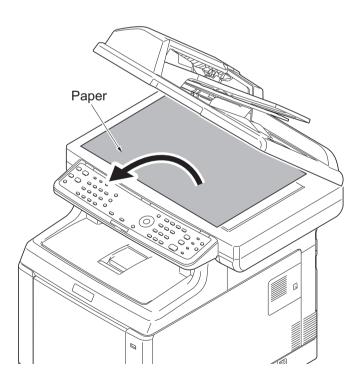


Figure 1-2-5

- 5. Remove the tape A and pad.
- 6. Move the lock lever to the position of release.
 - *: When turning on power if the lock lever is not released, the error message is displayed.
- 7. Remove the tape B.
- 8. Close the DP.

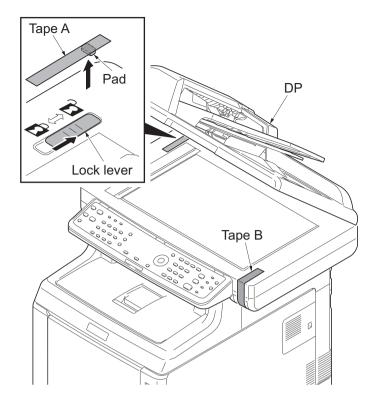


Figure 1-2-6

9. Remove three tapes.

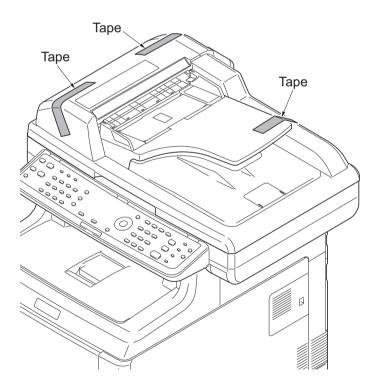


Figure 1-2-7

- 10. Open the DP top cover.
- 11. Remove two tapes.
- 12. Close the DP top cover.

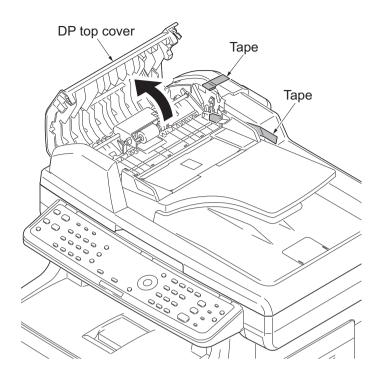


Figure 1-2-8

13. Remove five tapes.

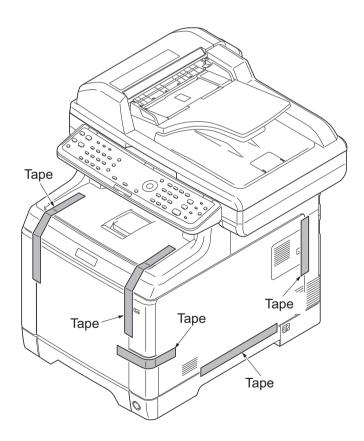


Figure 1-2-9

14. Remove four tapes.

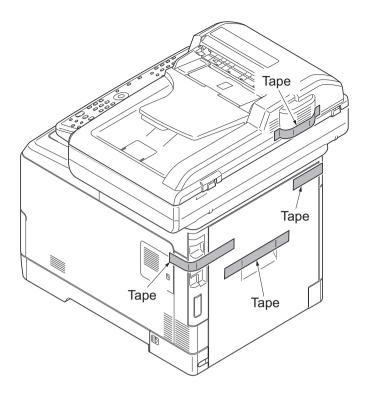


Figure 1-2-10

- 15. Open the top tray.
- 16. Remove pads A and B.
- 17. Close the top tray.

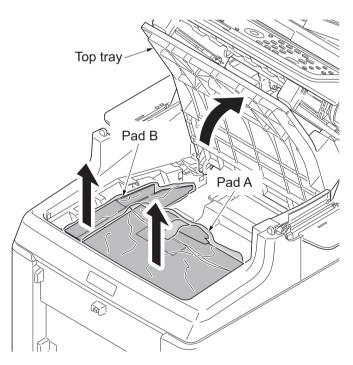


Figure 1-2-11

Installing the toner containers

1. Slide the release lever backward.

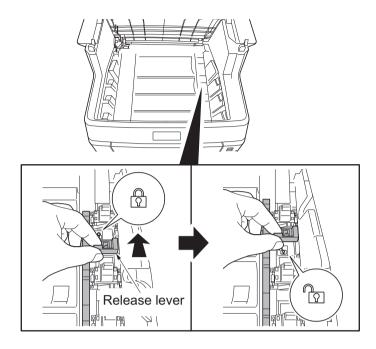


Figure 1-2-12

2. Facing the toner feed slot up and shake the toner container 5 to 6 times.

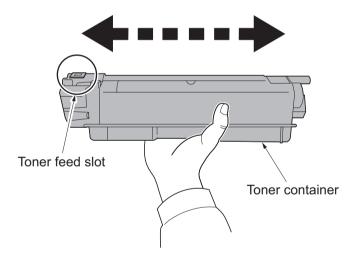


Figure 1-2-13

- 3. Install toner containers (K, M, C, Y).
- 4. Close the top cover.

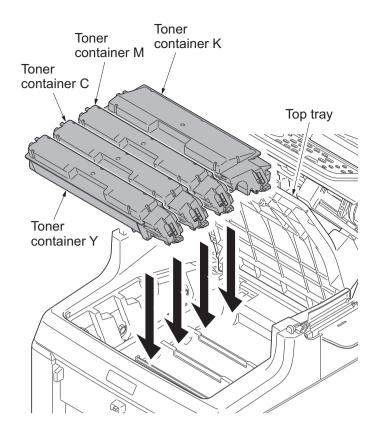


Figure 1-2-14

Installing the waste toner box

- 1. Open the waste toner cover.
- 2. Open the cap of the waste toner box.
- 3. Install the waste toner box.
- 4. Close the waste toner cover.

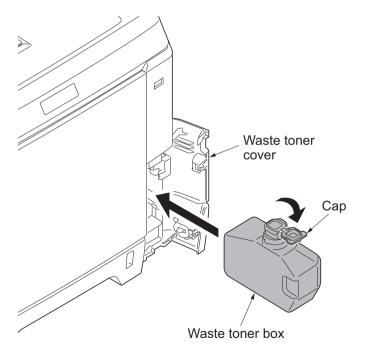


Figure 1-2-15

Loading paper

- 1. Pull the cassette out.
- 2. While pressing the width lever, adjust the paper width guides to fit the paper size.
- 3. While pressing the length lever, adjust the paper length guide to fit the paper size.

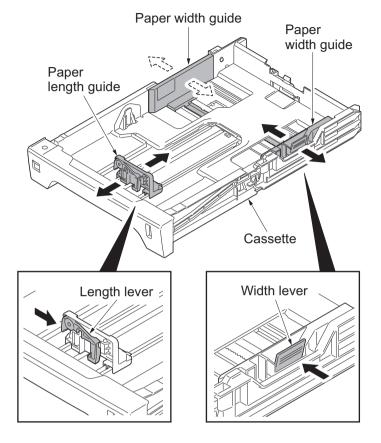


Figure 1-2-16

- 4. Load the paper in the cassette.
- 5. Turn the paper size dial so that it shows the paper size you are going to use.
- 6. Insert the cassette.

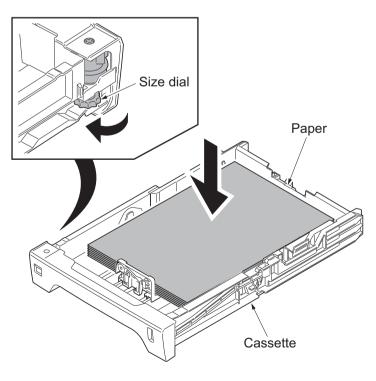


Figure 1-2-17

Connecting the interface cable

1. Connect the interface cable to the machine and PC or network.

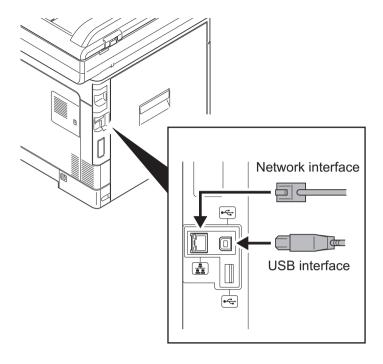


Figure 1-2-18

Connecting the power cord

- 1. Remove the power cord cover.
- 2. Connect the power cord to the machine and the wall outlet.
- 3. Refit the power cord cover.
- 4. Press the main power switch to turn power on.
- 5. Installing the printer driver (refer to operation guide).

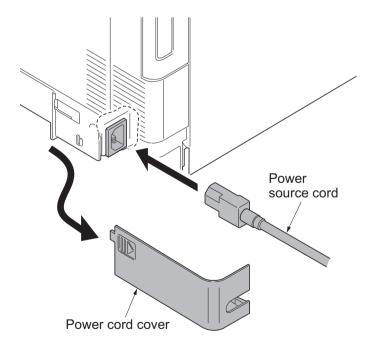


Figure 1-2-19

Completion of the machine installation

1-2-3 Installing the expansion memory (option)

Procedure

- Turn off the main power switch.
 Caution: Do not insert or remove expansion memory while machine power is on.
 - Doing so may cause damage to the machine and the expansion memory.
- 2. Remove the memory cover.

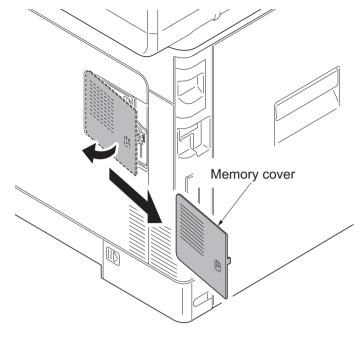


Figure 1-2-20

3. Release the hook and then open the fan bracket.

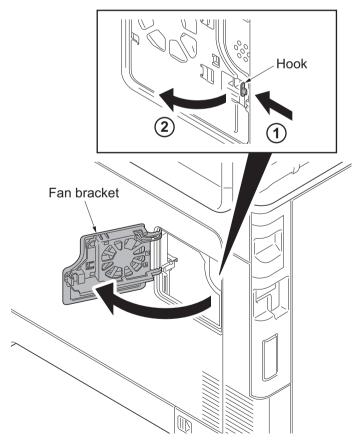


Figure 1-2-21

- 4. Insert the expansion memory into the memory socket so that the notches on the memory align with the corresponding protrusions in the slot.
- 5. Close the fan bracket.
- 6. Refit the memory cover.
- 7. Print a status page to check the memory expansion (see page 1-3-76). If memory expansion has been properly performed, information on the installed memory is printed with the total memory capacity has been increased. Standard memory capacity 768 MB.

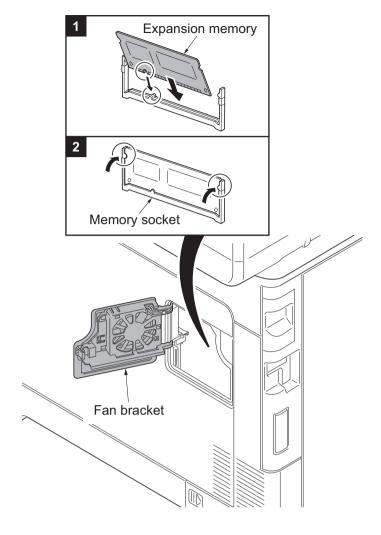


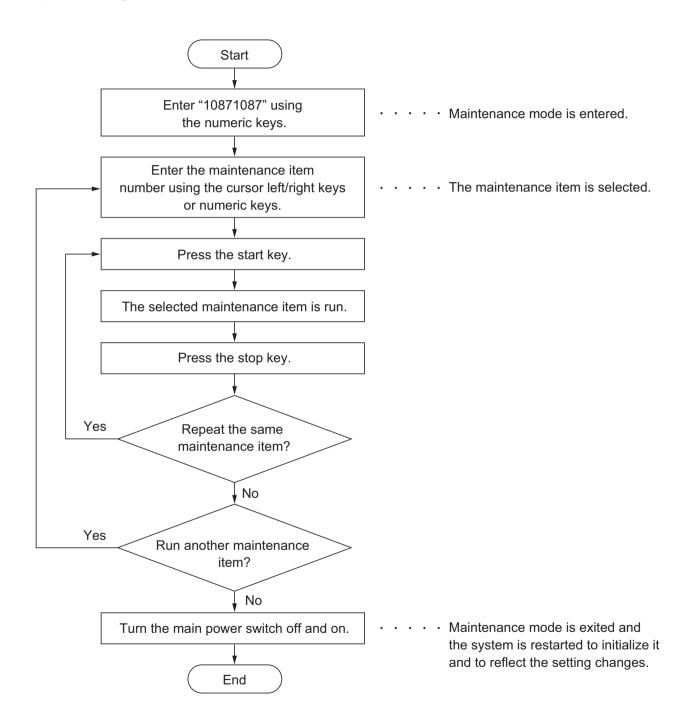
Figure 1-2-22

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1-3-1 Maintenance mode

The machine is equipped with a maintenance function which can be used to maintain and service the machine.

(1) Executing a maintenance item



(2) Maintenance modes item list

Section	Item No.	Content of maintenance item	Initial setting
General	U000	Outputting an own-status report	-
	U001	Exit Maintenance Mode	-
	U002	Setting the factory default data	-
	U010	Set Mainte ID	-
	U019	Firmware Version	-
Initialization	U021	Memory initializing	-
Drive, paper feed and paper conveying system	U034	Adjust Paper Timing Data LSU Out Top LSU Out Left	0/0/0 0/0/0/0/0
Optical	U065	Adjust Scanner Motor Speed	0/0
	U066	Adjust Table Leading Edge Timing	0/0
	U067	Adjust Table Center	0/0
	U068	Adjust DP Scan Position	0/0
	U070	Adjust DP Motor Speed	0
	U071	Adjust DP Leading Edge Timing	0/0/0/0/0
	U072	Adjust DP Original Center	0/12/0
Operation	U203	Checking DP operation	-
panel and support equipment	U222	Setting the IC card type	Other
Mode setting	U250	Setting the maintenance cycle	200000
	U251	Checking/clearing the maintenance count	0
	U252	Setting the destination	-
	U253	Switching between double and single counts	Double count
	U260	Selecting the timing for copy counting	Eject
	U285	Setting service status page	On
	U332	Setting the size conversion factor	1.0
	U345	Setting the value for maintenance due indication	0
Image	U402	Adjust Print Margin	4.0/4.0/4.0/4.0
processing	U403	Adjust Scanning Margin(Table)	2.0/2.0/2.0/2.0
	U404	Adjust Scanning Margin(DP)	3.0/2.5/3.0/4.0
	U410	Adjusting the halftone automatically	-
	U411	Adjusting the scanner automatically	-
	U425	Setting the target	-

Section	Item No.	Content of maintenance item	Initial setting
Fax	U600	Initializing all data	-
	U601	Initializing permanent data	-
	U603	Setting user data 1	DTMF
	U604	Setting user data 2	2 (120 V) 1 (220-240 V)
	U605	Clearing data	-
	U610	Setting system 1 Setting the number of lines to be ignored when receiving a fax at 100% magnification	3
		Setting the number of lines to be ignored when receiving a fax in the auto reduction mode Setting the number of lines to be ignored when receiving a	0
		fax (A4R/LetterR) in the auto reduction mode	
	U611	Setting system 2 Setting the number of adjustment lines for automatic reduction	7
		Setting the number of adjustment lines for automatic reduction when A4 paper is set	22
		Setting the number of adjustment lines for automatic reduction when letter size paper is set	26
	U612	Setting system 3 Selecting if auto reduction in the auxiliary direction is to be performed	On
		Setting the automatic printing of the protocol list Setting how trailing edge margins are detected	Off On
	U620	Setting the remote switching mode	One
	U625	Setting the transmission system 1 Setting the auto redialing interval	3 (120 V) 2 (220-240 V)
		Setting the number of times of auto redialing	2 (120 V) 3 (220-240 V)
	U630	Setting communication control 1 Setting the communication starting speed Setting the reception speed Setting the waiting period to prevent echo problems at the	14400bps/V17 14400bps 300
		Setting the waiting period to prevent echo problems at the receiver	75
	U631	Setting communication control 2 Setting ECM transmission Setting ECM reception Setting the frequency of the CED signal	On On 2100
	U632	Setting communication control 3 Setting the DIS signal to 4 bytes Setting the CNG detection times in the fax/telephone auto select mode	Off 2Time

Section	Item No.	Content of maintenance item	Initial setting
Fax	U633	Setting communication control 4 Enabling/disabling V.34 communication Setting the number of times of DIS signal reception Setting the number of times of DIS signal reception Setting the reference for RTN signal output	On On Once 15%
	U634	Setting communication control 5	0
	U640	Setting communication time 1 Setting the one-shot detection time for remote switching Setting the continuous detection time for remote switching	7 80
	U641	Setting communication time 2 Setting the T0 time-out time Setting the T1 time-out time Setting the T2 time-out time Setting the Ta time-out time Setting the Tb1 time-out time Setting the Tb2 time-out time Setting the Tc time-out time Setting the Tc time-out time Setting the Td time-out time	56 36 69 30 20 80 60 9 (120 V) 6 (220-240 V)
	U650	Setting modem 1 Setting the G3 transmission cable equalizer Setting the G3 reception cable equalizer Setting the modem detection level	0dB 0dB -43dBm
	U651	Setting modem 2 Modem output level DTMF output level (main value) DTMF output level (level difference)	9 (120 V) 10 (220-240 V) 5 (120 V) 10.5 (220-240 V) 2 (120 V) 2.5 (220-240 V)
	U660	Setting the NCU Setting the connection to PBX/PSTN Setting PSTN dial tone detection Setting busy tone detection Setting for a PBX Setting the loop current detection before dialing	PSTN On On Loop On
	U670	Outputting lists	-
	U695	FAX function customize	On/Off
	U699	Setting the software switches	-

Section	Item No.	Content of maintenance item	Initial setting
Others	U910	Clearing the print coverage data	-
	U917	Setting backup data reading/writing	-
	U920	Checking the copy counts	-
	U927	Clearing the all copy counts and machine life counts (one time only)	-
	U928	Checking machine life counts	-
	U977	Data capture mode	-
	U995	Memory data Individual setting	

Item No.		Description			
U000	Outputting an own-status report				
	Description				
		ent settings of the maintenance items and paper jam and service call e event log. Also sends output data to the USB memory.			
	Purpose				
	To check the current setting of the maintenance items, or paper jam or service call occurrences. Before initializing or replacing the backup RAM, output a list of the current settings of the maintenance items to reenter the settings after initialization or replacement.				
	Method				
	Method				
	Method 1. Press the start key.				
	1. Press the start key.	e output using the cursor up/down keys.			
	1. Press the start key.	e output using the cursor up/down keys. Output list			
	Press the start key. Select the item to be				

Outputs the all reports

3. Press the start key. A list is output.

Method: Send to the USB memory

- 1. Press the power key on the operation panel, and after verifying the main power indicator has gone off, switch off the main power switch.
- 2. Insert USB memory in USB memory slot.
- 3. Turn the main power switch on.
- 4. Enter the maintenance item.
- 5. Press the start key.

ΑII

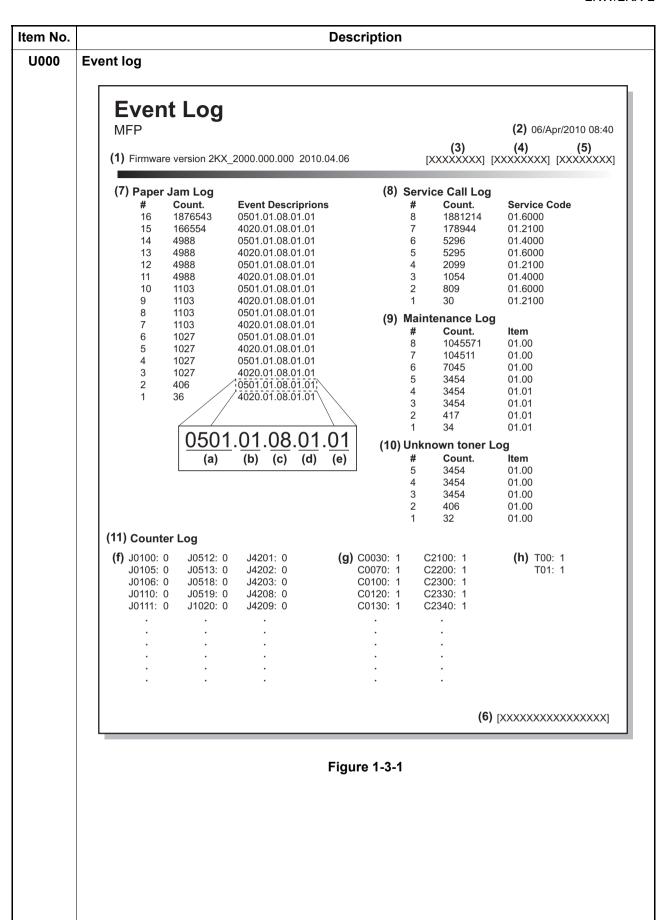
- 6. Select the item to be send.
- 7. Select [Text] or [HTML].

Display	Output list
Print	Outputs the report
USB (Text)	Sends output data to the USB memory (text type)
USB (HTML)	Sends output data to the USB memory (HTML type)

8. Press the start key.

Output will be sent to the USB memory.

Completion



1-3-7

n No.		Description				
000	Detail of event log					
	No.	Items		Description		
	(1)	System vers	sion			
	(2)	System date)			
	(3)	Engine soft	version			
	(4)	Engine boot				
	(5)	_	anel mask version			
	(6)	Machine se				
	(7)	Paper Jam	Event			
		Log	# Remembers 1 to 16 of	Count.		
		3	occurrence. If the occur- rence of the previous paper jam is less than	The total page count at the time of the paper jam.	Log code (hexadecimal, 5 categories) (a) Cause of a paper	
			16, all of the paper jams are logged. When the occurrence excesseds		jam (b) Paper source (c) Paper size	
			16, the oldest occur- rence is removed.		(d) Paper type	
				lovadaoimal)	(e) Paper eject	
			(a) Cause of paper jam (Refer to P.1-4-1 for paper	,		
			0100: Controller sequence 0105: Registration senso 0106: Controller sequence 0110: Top tray open 0111: Rear cover open 0112: Front cover open 0113: MP tray open 0120: Controller sequence	r not detected e error e error		
			0121: Controller sequence			
			0211: Rear cover open (p 0212: Rear cover open (p	•		
			0501: No paper feed from	• •		
			0502: No paper feed from			
			0503: No paper feed from 0508: No paper feed from 0509: No paper feed from 0511: Multiple sheets in a	n duplex section n MP tray		
			0511: Multiple sheets in c 0512: Multiple sheets in c 0513: Multiple sheets in c	assette 2		
			0518: Multiple sheets in 0 0519: Multiple sheets in N	лР tray		
			1020: MP paper conveyir 1403: PF feed sensor 1 d	~		
			1413: PF feed sensor 1 d 1420: PF feed sensor 1 is	oes not turn OFF		
			1620: PF feed sensor 2 is	s turned ON		

Item No.	Description				
U000	No	Itoms		Description	
U000	No. (7) cont.	Paper Jam Log	4003: Registration ser 4009: Registration ser 4012: Registration ser 4013: Registration ser 4019: Registration ser 4020: Registration ser 4201: Eject sensor do 4202: Eject sensor do 4203: Eject sensor do 4208: Eject sensor do 4211: Eject sensor do 4211: Eject sensor do 4212: Eject sensor do 4213: Eject sensor do 4213: Eject sensor do 4219: An original feed 9401: An original jam 9410: An original jam	es not turn ON (Cassette es not turn ON (Paper fe es not turn ON (Paper fe es not turn ON (Duplex) es not turn ON (MP tray es not turn OFF (Casset es not turn OFF (Paper es not turn OFF (Duplex es not turn OFF (MP traturned ON pen in the original switchbactin the original conveying	Paper feeder 2) MP tray) (Paper feeder 1) (Paper feeder 2) MP tray) e) eeder 1) eeder 2) i) te) feeder 1) feeder 2) iv) k section 2
		(b) Detail of paper soul on: MP tray on: Cassette 1 on: Cassette 2 (paper on: Cassette 3 (paper on: Cassette 4	feeder 1) feeder 2)	22: Special 1 23: Special 2 24: A3 wide 25: Ledger wide 26: Full bleed paper (12 x 8) 27: 8K 28: 16K-R A8: 16K-E 32: Statement-R B2: Statement-R B2: Statement-E 33: Folio 34: Western type 2 35: Western type 4	

Item No.	Description				
U000		T	T		
	No.	Items		Description	
	(7)	Paper Jam	(d) Detail of paper typ	e (Hexadecimal)	
	cont.	Log	01: Plain 02: Transparency	0A: Color 0B: Prepunched	15: Custom 1 16: Custom 2
			03: Preprinted	0C: Envelope	17: Custom 3
			04: Labels	0D: Cardstock	18: Custom 4
			05: Bond	0E: Coated	19: Custom 5
			06: Recycled	0F: 2nd side	1A: Custom 6
			07: Vellum	10: Thick	1B: Custom 7
			08: Rough 09: Letterhead	11: High quality	1C: Custom 8
			(e) Detail of paper eje	ect location (Hexadec	imal)
			01: Face down (FD)	Τ_	T
	(8)	Service Call	#	Count.	Service Code
		Log	Remembers 1 to 8 of occurrence of self diagnostics error. If the occurrence of the previous diagnostics error is less than 8, all of the diagnostics errors are logged.	The total page count at the time of the self diagnostics error.	Self diagnostic error code (See page 1-4-7) Example: 01.6000
					01: Self diagnostic error 6000: Self diagnostic error code number
	(9)	Maintenance	#	Count.	Item
		Log	Remembers 1 to 8 of occurrence of replacement. If the occurrence of the previous replacement of toner container is less than 8, all of the occurrences of replacement are logged.	The total page count at the time of the replacement of the toner container. * :The toner replacement log is triggered by toner empty. This record may contain such a reference as the toner container is inserted twice or a used toner container is inserted.	Code of maintenance replacing item (1 byte, 2 categories) First byte (Replacing item) 01: Toner container Second byte (Type of replacing item) 00: Black 01: Cyan 02: Magenta 03: Yellow First byte (Replacing item) 02: Maintenance kit Second byte (Type of replacing item) 01: MK-590/592/594

).	Description				
No.	Items		Description		
(10)	Unknown Toner	#	Count.	Item	
	Log	Remembers 1 to 5 of occurrence of unknown toner detection. If the occurrence of the previous unknown toner detection is less than 5, all of the unknown toner detection are logged.	The total page count at the time of the toner empty error with using an unknown toner container.	Unknown toner log code (1 byte, 2 categories) First byte 01: Toner container (Fixed) Second byte 00: Black 01: Cyan 02: Magenta 03: Yellow	
(11)	Counter Log	(f) Paper jam	(g) Self diagnostic error	(h) Maintenance item replacing	
	Comprised of three log counters including paper jams, self diagnostics errors, and replacement of the toner container.	Indicates the log counter of paper jams depending on location. Refer to Paper Jam Log. All instances including those are not occurred are displayed.	Indicates the log counter of self diagnostics errors depending on cause. (See page 1-4-7) Example: C6000: 4 Self diagnostics error 6000 has happened four times.	Indicates the log counter depending on the maintenance item for maintenance. T: Toner container 00: Black 01: Cyan 02: Magenta 03: Yellow M: Maintenance kit 01: MK-590/592/594 Example: T00: 1 The toner container has been replaced once. * :The toner replacement log is triggered by toner empty. This record may contain such a reference as the toner container is inserted twice or a used toner container is inserted.	

Item No.		Description			
U001	Exit Maintenance Mode				
	Description Exits the maintenance mode and returns to the normal copy mode. Purpose To exit the maintenance mode. Method 1. Press the start key. The normal copy mode is entered.				
U002	Setting the factory defau	ult data			
	Purpose	nditions to the factory default settings. er unit to the home position.			
	 Method Press the start key. Select [Mode1(All)] using the cursor up/down keys. Press the start key. The imege scanner unit returns to the home position. Turn the main power switch off and on. * : An error code is displayed in case of an initialization error. When errors occurred, turn main power switch off then on, and execute initialization usin maintenance item U002. 				
	Error codes				
	Codes	Description			
	0001	Controller error			
	0020	Engine error			
	0040	Scanner error			

Item No.	Description				
U010	Set Mainte ID				
	Description Maintenance mode ID for markets is changed. Purpose The brittleness of a security function is improved by changing maintenance mode ID for markets.				
	Method 1. Press the start key. 2. Select the item to be set.				
	Display	Description			
	Change	Maintenance mode ID for markets is changed.			
	Initialize	Maintenance mode ID for markets is initialized.			
	[Setting: Change] 1. Select the [New ID(Reconfirm)]. 2. New ID is inputted using a ten key. *: New ID of 8 figures is taken as the arbitrary combination of 0 to 9, *, and #. (* or # is certainly included) 3. Select the [Excute]. 4. Press the start key. ID is set. 5. Turn the main power switch off and on. Allow more than 5 seconds between Off and On. [Setting: Initialaize] 1. Select the [Excute].				
	2. Press the start key. ID is intialized.3. Turn the main power switch off and on. Allow more than 5 seconds between Off and On.Completion				
	Press the stop key. The scree	en for selecting a maintenance item No. is displayed.			

Item No.		Description			
U019	Firmware Version				
	Description Displays the part number of the ROM fitted to each PWB. Purpose To check the part number or to decide, if the newest version of ROM is installed. Method 1. Press the start key. The ROM version are displayed. 2. Change the screen using the cursor up/down keys.				
	Display	Description			
	Main	Main ROM			
	MMI	Operation ROM			
	Engine	Engine ROM			
	Engine Boot	Engine booting			
	Scanner	Scanner ROM			
	Scanner Boot	Scanner booting			
	Option Language	Optional language ROM			
	Color Table	Color table ROM			
	Cassette2	Paper feeder 2			
	Cassette3	Paper feeder 3			
	Fax Boot	Fax Boot			
	Fax APL	Fax APL			
	Fax IPL	Fax IPL			
	Completion Press the stop key. The sc	reen for selecting a maintenance item No. is displayed.			

Item No.		Description			
U021	Memory initializing				
	Description Initializes all settings, except those pertinent to the type of machine, namely each counter, se vice call history and mode setting. Also initializes backup RAM according to region specification selected in maintenance item U252 Setting the destination. Purpose To return the machine settings to their factory default. Method 1. Press the start key. 2. Select [Execute]. 3. Press the start key. All data other than that for adjustments due to variations between machines is initialized based on the destination setting. 4. Turn the main power switch off and on. * : An error code is displayed in case of an initialization error. When errors occurred, turn main power switch off then on, and execute initialization us maintenance item U021.				
	Error codes				
	Codes	Description			
	0001	Entity error			
	0002	Controller error			
	0020	Engine error			
	0040	Scanner error			

Item No.	Description
U034	Adjust Paper Timing Data
	Description
	Adjusts the leading edge registration or center line.
	Purpose
	Make the adjustment if there is a regular error between the leading edges of the copy image an

Make the adjustment if there is a regular error between the leading edges of the copy image and original.

Make the adjustment if there is a regular error between the center lines of the copy image and original.

Method

- 1. Press the start key.
- 2. Select the item to be adjusted.

Display	Description
LSU Out Top	Leading edge registration adjustment
LSU Out Left	Center line adjustment

Adjustment: [LSU Out Top]

- 1. Press the system menu key.
- 2. Press the start key to output a test pattern.
- 3. Press the system menu key.
- 4. Select the item to be adjusted.

Display	Description	Setting range	Initial setting	Change in value per step
MPT	Paper feed from MP tray	-100 to 600	0	0.1 mm
Cassette	Paper feed from cassette	-100 to 600	0	0.1 mm
Duplex	Duplex mode (second)	-100 to 600	0	0.1 mm

5. Change the setting value using the cursor left/rigrt keys or numeric keys. For output example 1, increase the value. For output example 2, decrease the value.

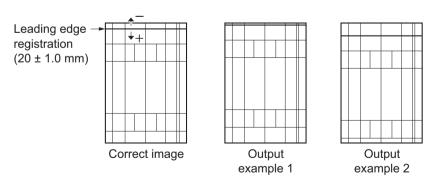
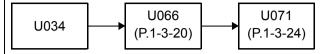


Figure 1-3-2

6. Press the start key. The value is set.

Item No. Description U034 Caution

Check the copy image after the adjustment. If the image is still incorrect, perform the following adjustments in maintenance mode.



Adjustment: [LSU Out Left]

- 1. Press the system menu key.
- 2. Press the start key to output a test pattern.
- 3. Press the system menu key.
- 4. Select the item to be adjusted.

Display	Description	Setting range	Initial setting	Change in value per step
MPT	Paper feed from MP tray	-100 to 600	0	0.1 mm
Cassette1	Paper feed from optional cassette1	-100 to 600	0	0.1 mm
Cassette2	Paper feed from optional cassette2	-100 to 600	0	0.1 mm
Cassette3	Paper feed from optional cassette3	-100 to 600	0	0.1 mm
Duplex	Duplex mode (second)	-100 to 600	0	0.1 mm

5. Change the setting value using the cursor left/rigrt keys or numeric keys.

For output example 1, increase the value. For output example 2, decrease the value.

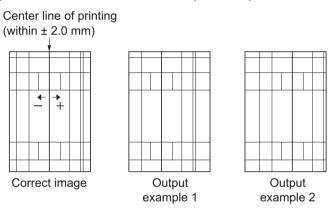
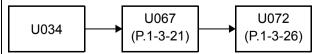


Figure 1-3-3

6. Press the start key. The value is set.

Caution

Check the copy image after the adjustment. If the image is still incorrect, perform the following adjustments in maintenance mode.



Completion

em No.	Description						
U065	Adjust Scanner Motor Speed						
	Description						
	-	cation of the original scanning.					
	Purpose						
	-	nt if the magnification in the main	_				
	Make the adjustmen	nt if the magnification in the auxil	iary scanning	direction is	s incorrect.		
	Method						
	1. Press the start I	-					
	2. Press the syste						
	3. Place an original4. Press the system	al and press the start key to make	e a test copy.				
	5. Select the item	•					
			Setting	Initial	Change in		
	Display	Description	range	setting	value per step		
	Y Scan Zoom	Scanner magnification in the main scanning direction	-32 to 127	0	0.1 %		
	X Scan Zoom	Scanner magnification in the auxiliary scanning direction	-25 to 25	0	0.1 %		
		ole 1, increase the value. For copsetting enlarges the image and de	•				
		setting enlarges the image and de la	ecreasing it na				
		etting enlarges the image and de Copy Original Copy example	copy 1 example 2				
		setting enlarges the image and de la	copy 1 example 2				
	Increasing the s	etting enlarges the image and de Copy Original Copy example	copy 1 example 2				
	Increasing the s	original Copy example of Figure 1-3	copy 1 example 2				
	Increasing the s	original Copy example of Figure 1-3	copy 1 example 2				
	Increasing the s	original Copy example of Figure 1-3	copy 1 example 2				
	Increasing the s	original Copy example of Figure 1-3	copy 1 example 2				
	Increasing the s	original Copy example of Figure 1-3	copy 1 example 2				
	Increasing the s	original Copy example of Figure 1-3	copy 1 example 2				
	Increasing the s	original Copy example of Figure 1-3	copy 1 example 2				
	Increasing the s	original Copy example of Figure 1-3	copy 1 example 2				
	Increasing the s	original Copy example of Figure 1-3	copy 1 example 2				
	Increasing the s	original Copy example of Figure 1-3	copy 1 example 2				

Item No.	Description
U065	Adjustment: [X Scan Zoom]
	Change the setting value using the left/rigrt keys or numeric keys. For copy example 1, increase the value. For copy example 2, decrease the value. Increasing the value makes the image longer, while decreasing the value makes the image shorter.
	Original Copy Copy example 1 example 2
	Figure 1-3-5
	2. Press the start key. The value is set.
	Completion Press the stop key. The screen for selecting a maintenance item No. is displayed.

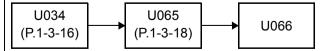
Item No.	Description						
U066	Adjust Table Leadi	ng Edge Timing					
	Description Adjusts the scanner leading edge registration of the original scanning. Purpose Make the adjustment if there is a regular error between the leading edges of the copy image and original.						
	Press the syster Results an original	 Press the start key. Press the system menu key. Place an original and press the start key to make a test copy. Press the system menu key. 					
	Display	Description	Setting range	Initial setting	Change in value per step		
	Front	Scanner leading edge registration	-45 to 45	0	0.086 mm		
	Rotate	Scanner leading edge registration (rotate copying)	-45 to 45	0	0.086 mm		
	6. Change the setting value using the cursor left/right keys or numeric keys. For copy example 1, increase the value. For copy example 2, decrease the value. Increasing the value moves the image forward and decreasing the value moves the image backward.						
		Leading edge registration of the	e copy image (+1.0/-1.5 m	m or less)		

Figure 1-3-6

7. Press the start key. The value is set.

Caution

If the above adjustment does not optimize the leading edge registration, proceed with the following maintenance modes.



Completion

Item No.		Descriptio	n			
U067	Adjust Table Cente	er				
	Description					
	Adjusts the scanner center line of the original scanning.					
	Purpose					
	Make the adjustment if there is a regular error between the center lines of the copy image and					
	original.					
	Adjustment					
	1. Press the start key.					
	2. Press the system menu key.					
	3. Place an original and press the start key to make a test copy.					
	4. Press the system menu key.					
	5. Select the item t	o be adjusted.				
			Setting	Initial	Change in	

Display	Description	Setting range	Initial setting	Change in value per step
Front	Scanner center line	-40 to 40	0	0.085 mm
Rotate	Scanner center line (rotate copying)	-40 to 40	0	0.085 mm

6. Change the setting value using the cursor left/right keys or numeric keys.

For copy example 1, decrease the value. For copy example 2, increase the value.

Increasing the value moves the image leftward and decreasing it moves the image rightward.

Center line of the copy image (within ± 2.0 mm)

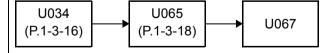
Original Copy Copy example 1 example 2

Figure 1-3-7

7. Press the start key. The value is set.

Caution

If the above adjustment does not optimize the center line, proceed with the following maintenance modes.

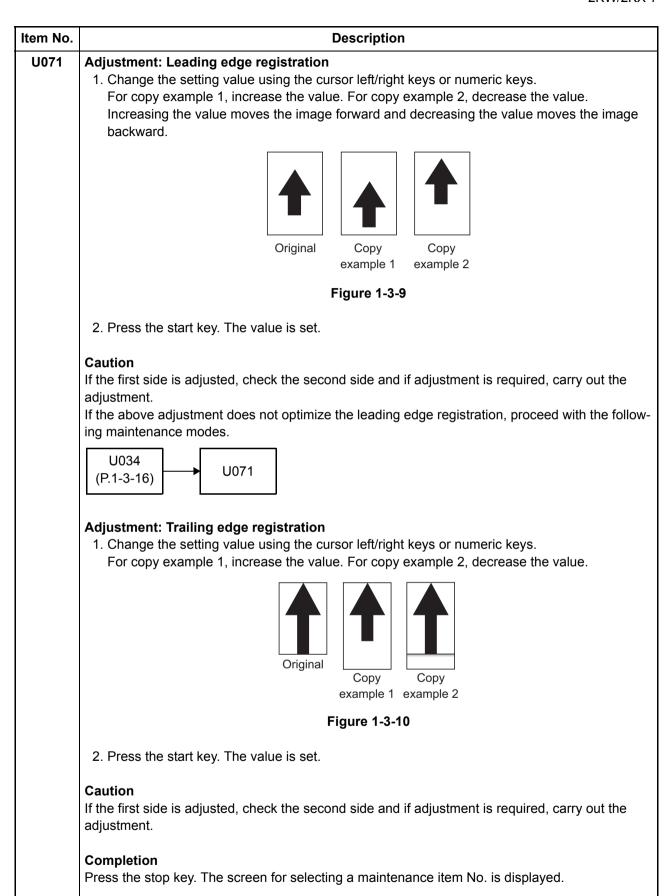


Completion

Item No.	Description							
U068	Adjust DP Scan Position							
	Description Adjusts the position for scanning originals from the DP. Performs the test copy at the four scanning positions after adjusting. Purpose Used when the image fogging occurs because the scanning position is not proper when the DP is used. Run U071 to adjust the timing of DP leading edge when the scanning position is changed. Setting							
	1. Press the start key.l Display Description Description Setting Initial Change in value per step							
	DP Read	Starting position adjustment for scanning originals	-33 to 33	0	0.086 mm			
	Black Line	Scanning position for the test copy originals	0 to 3	0	0.22 mm			
	 Select [Black Line]. Change the setting using the +/- keys or numeric keys. Press the start key. The value is set. Set the original (the one which density is known) in the DP and press the system menu key. Press the start key. Test copy is executed. Perform the test copy at each scanning position with the setting value from 0 to 3 and chey that no black line appears and the image is normally scanned. Completion Press the stop key. The screen for selecting a maintenance item No. is displayed.							

m No.	Description						
U070	Adjust DP Motor Speed						
	Description						
	_	ginal scanning speed.					
	Purpose						
		ent if the magnification is incorrect	t in the auxiliar	y scanning	direction when		
	DP is used.						
	Adjustment						
	Press the start	•					
	2. Press the syst	•					
		nal on the DP and press the start k	key to make a	test copy.			
	4. Press the syst						
	5. Select [Conve	y Speedj.	1 2	T	T		
	Display	Description	Setting range	Initial setting	Change in value per ster		
	Convey	Magnification in the auxiliary	-25 to 25	0	0.1 %		
	Speed	scanning direction of CCD					
		(first side)					
	For copy exam Increasing the	etting value using the cursor left/rig nple 1, increase the value. For cop value makes the image longer, w	by example 2,	decrease t	he value.		
	For copy exam	nple 1, increase the value. For cop	by example 2,	decrease t	he value.		
	For copy exam Increasing the	nple 1, increase the value. For cop	by example 2, hile decreasing	decrease t	he value.		
	For copy exam Increasing the	riple 1, increase the value. For copy value makes the image longer, w	by example 2, hile decreasing Copy 1 example 2	decrease t	he value.		
	For copy exam Increasing the shorter.	original Copy example	by example 2, hile decreasing Copy 1 example 2	decrease t	he value.		
	For copy exam Increasing the shorter. 7. Press the start Completion	original Copy example Figure 1-3	by example 2, hile decreasing Copy 1 example 2 3-8	decrease t	the value. The makes the ima		
	For copy exam Increasing the shorter. 7. Press the start Completion	original Copy example Figure 1-3 t key. The value is set.	by example 2, hile decreasing Copy 1 example 2 3-8	decrease t	the value. The makes the ima		
	For copy exam Increasing the shorter. 7. Press the start Completion	original Copy example Figure 1-3 t key. The value is set.	by example 2, hile decreasing Copy 1 example 2 3-8	decrease t	the value. The makes the ima		

Item No.	Description						
U071	Adjust DP Leading Edge Timing						
	Description Adjusts the DP original scanning timing. Purpose Make the adjustment if there is a regular error between the leading or trailing edges of the original and the copy image when the DP is used. Method 1. Press the start key. 2. Press the system menu key. 3. Place an original on the DP and press the start key to make a test copy. 4. Press the system menu key.						
	5. Select the item	to be adjusted.l					
	Display	Description	Setting range	Initial setting	Change in value per step		
	Front Head	Leading edge registration of CCD (first side)	-32 to 32	0	0.196 mm		
	Front Tail	Trailing edge registration of CCD (first side)	-32 to 32	0	0.196 mm		
	Back Head	Leading edge registration of CCD (second side)	-45 to 45	0	0.196 mm		
	Back Tail	Trailing edge registration of CCD (second side)	-45 to 45	0	0.196 mm		
	Rotate	Leading edge registration (rotate copying)	-128 to 127	0	0.196 mm		



Item No.	Description			
U072	Adjust DP Original Center			
	Description			
	Adjusts the scanning start position for the DP original.			
	Purpose			
	Make the adjustment if there is a regular error between the centers of the original and the copy			
	image when the DP is used.			

Adjustment

- 1. Press the start key.
- 2. Press the system menu key.
- 3. Place an original on the DP and press the start key to make a test copy.
- 4. Press the system menu key.
- 5. Select the item to be adjusted.I

Display	Description	Setting range	Initial setting	Change in value per step
Front	DP center line (first side)	-39 to 39	0	0.085 mm
Back	DP center line (second side)	-39 to 39	12	0.085 mm
Rotate	DP center line (rotate copying)	-39 to 39	0	0.085 mm

6. Change the setting value using the cursor left/right keys or numeric keys.

For copy example 1, increase the value. For copy example 2, decrease the value.

Increasing the value moves the image rightward and decreasing it moves the image leftward.

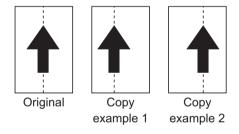


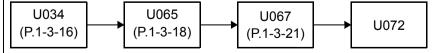
Figure 1-3-11

7. Press the start key. The value is set.

Caution

If the first side is adjusted, check the second side and if adjustment is required, carry out the adjustment.

If the above adjustment does not optimize the center line, proceed with the following maintenance modes.



Completion

Item No.		Description
U203	Checking DP operation	
	Purpose To check the DP operation. Method 1. Press the start key. 2. Place an original in the D	ving operation separately in the DP. P if running this simulation with paper. Decrated using the cursor up/down keys.
	Display	Description
	Normal Speed	Normal reading (600 dpi)
	High Speed	High-speed reading
	4. Press the start key.	rated using the cursor up/down keys.
	Display	Description
	CCD ADP (Non-P)	Without paper, single-sided original of CCD (continuous operation)
	CCD ADP	With paper, single-sided original of CCD
	CCD RADP (Non-P)	Without paper, double-sided original of CCD (continuous operation)
	CCD RADP	With paper, double-sided original of CCD
	6. Press the start key. The of the following of the follo	
	Completion Press the stop key. The screen	en for selecting a maintenance item No. is displayed.

Item No.	lo. Description					
U222	Setting the IC card ty	rpe				
	Description Sets the type of IC car Purpose To change the type of Setting 1. Press the start key 2. Select the item usi	IC card.	keys.			
	Display	Description				
	Other	The type of IC	card is SSFC.			
	SSFC	The type of IC	card is not SSFC.			
	* : Initial setting: C					
	3. Press the start key	. The setting is set.				
	Completion Press the stop key. The screen for selecting a maintenance item No. is displayed.					
U250	Setting the maintena	nce cycle				
	Displays, clears and changes the maintenance cycle. Purpose To check and change the maintenance cycle. Method 1. Press the start key. The currently set maintenance cycle is displayed.					
	Setting1. Select [M.Cnt A] using the cursor up/down keys.2. Change the setting using the cursor left/right keys or numeric keys.					
	Description		Setting range	Initial setting		
	Maintenance cycl	е	0 to 9999999	200000		
	3. Press the start key. The value is set.					
	Clearing 1. Select [Clear] using the cursor up/down keys. 2. Press the start key. The count is cleared.					
	Completion Press the stop key. Th	e screen for selecting a	a maintenance item No	. is displayed.		

. Description						
Checking/clearing the maintenance count						
Description Displays, clears and changes the maintenance count. Purpose To check the maintenance count. Also to clear the count during maintenance service (replacing the maintenance kit).						
Method 1. Press the start key. The maintenance count is displayed.						
Description	Setting range	Initial setting				
Maintenance count	0 to 9999999	0				
3. Press the start key. The count is set.						
Completion Press the stop key. The screen for selecting a n	naintenance item No. is	displayed.				
	Checking/clearing the maintenance count Description Displays, clears and changes the maintenance Purpose To check the maintenance count. Also to clear the count during maintenance service (r Method 1. Press the start key. The maintenance count Setting 1. Select [M.Cnt A] using the cursor up/down k 2. Change the setting using the cursor left/righ Description Maintenance count 3. Press the start key. The count is set. Clearing 1. Select [Clear] using the cursor up/down key 2. Press the start key. The count is cleared. Completion	Checking/clearing the maintenance count Description Displays, clears and changes the maintenance count. Purpose To check the maintenance count. Also to clear the count during maintenance service (replacing the maintenance) Method 1. Press the start key. The maintenance count is displayed. Setting 1. Select [M.Cnt A] using the cursor up/down keys. 2. Change the setting using the cursor left/right keys or numeric keys. Description Setting range Maintenance count 0 to 9999999 3. Press the start key. The count is set. Clearing 1. Select [Clear] using the cursor up/down keys. 2. Press the start key. The count is cleared.				

Item No.		Description					
U252	Setting the destination						
	Purpose	nd screens of the machine according to the destination. Exizing the backup RAM, in order to return the setting to the value before n.					
	Setting 1. Press the start key. 2. Select the destination using the cursor up/down keys.						
	Display	Description					
	Inch	Inch (North America) specifications					
	Europe Metric	Metric (Europe) specifications					
	Asia Pacific	Metric (Asia Pacific) specifications					
	Australia	Australia specifications					
	China	China specifications					
	Korea	Korea specifications					
	3. Press the start key.	· · · · · · · · · · · · · · · · · · ·					
	below. To change the initial changing the destination.	Il settings in those items, be sure to run maintenance item U021 after					

Item No.		Description				
U253	Switching between double	and single counts				
	Description Switches the count system for the total counter and other counters. Purpose Used to select, according to the preference of the user (copy service provider), if folio size is to be counted as one sheet (single count) or two sheets (double count). Setting 1. Press the start key. 2. Select the item using the cursor up/down keys.					
	Display	Description				
	Color	Count system of color mode				
	B/W	Count system of black/white mode				
	3. Press the start key. 4. Select the count system	using the cursor up/down keys.				
	Display	Description				
	SGL Count(All)	Single count for all size paper				
	DBL Count(Folio)	Double count for Folio size or larger				
	5. Press the start key. The Completion	*: Initial setting: DBL Count(Folio) 5. Press the start key. The setting is set. ompletion ress the stop key. The screen for selecting a maintenance item No. is displayed.				
U260	Selecting the timing for co					
	Description Changes the copy count time Purpose To be set according to user Setting 1. Press the start key. 2. Select the copy count time	ing for the total counter and other counters. request. ning using the cursor up/down keys.				
	Display	Description				
	Feed	When secondary paper feed starts				
	Eject When the paper is ejected * : Initial setting: Eject 3. Press the start key. The setting is set.					
	Completion Press the stop key. The scre	een for selecting a maintenance item No. is displayed.				

	Description					
U285	Setting service sta	atus page				
	Description Determines displaying the print coverage report on reporting. Purpose According to user request, changes the setting.					
	Setting 1. Press the start 2. Select On or Of	key. f using the cursor up/down ke	ys.			
	Display	Description				
	On	Displays the print of	coverage			
	Off	Not to display the	orint coverage			
	* : Initial setting					
	3. Press the start I	key. The setting is set.				
	Completion					
	Press the stop key. The screen for selecting a maintenance item No. is displayed.					
	Setting the size conversion factor					
	simulation. Purpose To set the coefficient for converting the black ratio for nonstandard sizes in relation to the A4/Le ter size. Setting 1. Press the start key.					
	1. Press the start	-				
	Press the start Change the set	ting using the cursor left/right		T 1		
	Press the start Change the set Display	ting using the cursor left/right Description	Setting range	Initial setting		
	1. Press the start 2. Change the set Display Rate	ting using the cursor left/right		Initial setting 1.0		

Item No.	No. Description					
U345	Setting the value for maintenance due indication					
	Description Sets when to display a message notifying that the time for maintenance is about to be reached, by setting the number of copies that can be made before the current maintenance cycle ends. When the difference between the number of copies of the maintenance cycle and that of the maintenance count reaches the set value, the message is displayed. Purpose To change the time for maintenance due indication. Setting 1. Press the start key. 2. Select [Cnt] using the cursor up/down keys. 3. Change the setting using the cursor left/right keys.					
	Description	Setting range	Initial setting			
	Time for maintenance due indication (Remaining number of copies that can be made before the current maintenance cycle ends)	0 to 9999	0			
	4. Press the start key. The value is set.					
	 Select [Clear] using the cursor up/down keys. Press the start key. The value is cleared. Completion Press the stop key. The screen for selecting a maintenance of the stop key.	nce item No. is disp	olayed.			

Item No.		Descripti	on		
U402	Adjust Print Marg	in			
	Description				
	Adjusts margins fo	r image printing.			
	Purpose				
	Make the adjustme	ent if margins are incorrect.			
	Adjustment				
	1. Press the start key.				
	2. Press the system menu key.				
	3. Press the start key to output a test pattern.				
	4. Press the system menu key.				
	5. Select the item	to be adjusted.			
	Display	Description	Setting range	Initial setting	Change in value per step
	Lead	Printer leading edge margin	0 to 100	40	0.1mm
	A Margin	Printer left margin	0 to 100	40	0.1mm

Printer right margin

Printer trailing edge margin

6. Change the setting value using the cursol left/right keys or numeric keys.

Increasing the value makes the margin wider, and decreasing it makes the margin narrower.

0 to 100

0 to 100

40

40

0.1mm

0.1mm

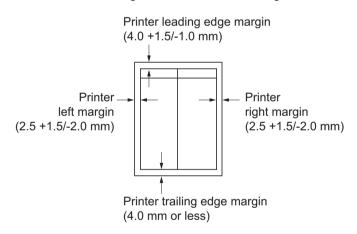


Figure 1-3-12

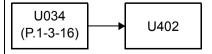
7. Press the start key. The value is set.

Caution

C Margin

Trail

If the above adjustment does not optimize the margins, perform the following maintenance modes.



Completion

					2KW/2K	
Item No.		Description	on			
U403	Adjust Scanning	Margin(Table)				
	Description					
	Adjusts margins fo	r scanning the original on the cont	act glass.			
	Purpose					
	Make the adjustme	ent if margins are incorrect.				
	Adjustment					
	1. Press the start key.					
	2. Press the syste	em menu key.				
	_	al and press the start key to make	a test copy.			
	4. Press the system menu key.					
	5. Select the item	to be adjusted.				
	Display	Description	Setting range	Initial setting	Change in value per step	
	A Margin	Scanner left margin	0.0 to 10.0	2.0	0.5 mm	
	B Margin	Scanner leading edge margin	0.0 to 10.0	2.0	0.5 mm	
	C Margin	Scanner right margin	0.0 to 10.0	2.0	0.5 mm	

6. Change the setting value using the cursor left/right keys or numeric keys. Increasing the value makes the margin wider, and decreasing it makes the margin narrower.

0.0 to 10.0

2.0

0.5 mm

Scanner trailing edge margin

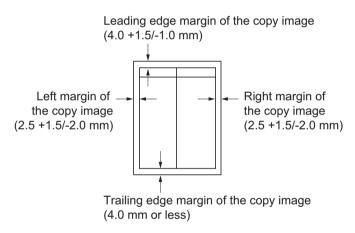


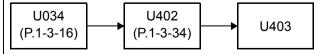
Figure 1-3-13

7. Press the start key. The value is set.

Caution

D Margin

If the above adjustment does not optimize the margins, perform the following maintenance modes.



Completion

Press the stop key. The indication for selecting a maintenance item No. appears.

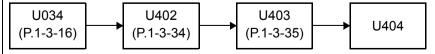
[Purpose	Margin(DP) - scanning the original from the D			
F	Adjusts margins for Purpose	scanning the original from the D			
,		nt if margins are incorrect.	P.		
	Adjustment 1. Press the start 2. Press the syste 3. Place an origin 4. Press the syste 5. Select the item	em menu key. al on the DP and press the start l em menu key.	key to make a t	est copy.	
	Display	Description	Setting range	Initial setting	Change in value per step
	A Margin	DP left margin	0.0 to 10.0	3.0	0.5 mm
	B Margin	DP leading edge margin	0.0 to 10.0	2.5	0.5 mm
	C Margin	DP right margin	0.0 to 10.0	3.0	0.5 mm
	D Margin	DP trailing edge margin	0.0 to 10.0	4.0	0.5 mm
	-	ting value using the cursor left/rig value makes the margin wider, and DP leading (4.0 +1.5/-	edge margin .0 mm) DP r	-	ne margin narrow

Figure 1-3-14

7. Press the start key. The value is set.

Caution

If the above adjustment does not optimize the margins, perform the following maintenance modes.



Completion

Item No.	Description
U410	Adjusting the halftone automatically
	Description
	Carries out processing for the data acquisition that is required in order to perform either automatic adjustment of the halftone or the ID correction operation.
	Purpose
	Performed when the quality of reproduced halftones has dropped.
	Method
	1. Select [Normal Mode].
	2. Press the start key. A test patterns 1 and 2 are outputted.
	3. Place the output test pattern 1 as the original.
	Place approximately 20 sheets of white paper on the test pattern 1 and set them.
	4. Press the start key.
	Adjustment is made (first time).
	5. Place the output test pattern 2 as the original.
	Place approximately 20 sheets of white paper on the test pattern 2 and set them.

6. Press the start key.

Adjustment is made (second time).

7. When normally completed, [Finish] is displayed.

If a problem occurs during auto adjustment, error code is displayed.

Error codes

Codes	Description	Codes	Description
S001	Patch not detected	E001	Engine status error
S002	Original deviation in the main	E002	Engine sensor error
	scanning direction	EFFF	Engine other error
S003	Original deviation in the auxiliary scanning direction	C001	Controller error
		C100	Adjustment value error
S004	Original inclination error	C200	Adjustment value error
S005	Original type error	CFFF	Controller other error
SFFF	Scanner other error		

Completion

tem No.		Description				
U411	Adjusting the so	anner automatically				
	scanning sections Scanner section: gamma in monoc DP scanning sections Purpose	Original size magnification, leading edge timing, control hrome mode and matrix ion: Original size magnification, leading edge timinatic adjustment of various items in the scanner ar	enter line, input gamma, inpu			
	2. Select the item.					
	Display	Description	Original to be used for adjustment (P/N)			
	All	Performs automatic adjustment in the DP scanning section following automatic adjustment in the scanner section	302FZ56990/ 303LJ57010			
	Table	Automatic adjustment in the scanner section	302FZ56990			
	DP	Automatic adjustment in the DP scanning section:	303LJ57010			
	ing maintenar 2. Set a specifie 3. Enter mainter 4. Select [Table] 5. Press the sta 6. When automaturing auto ac	et values which are shown on the specified originate item U425. d original (P/N: 302FZ56990) on the platen. nance item U411. using the cursor up/down keys. It key. Auto adjustment starts. It key. Auto adjustment of starts. It ic adjustment has normally completed, [OK] is didjustment, [NG XX] (XX is replaced by an error cood this happen, determine the details of the problem	splayed. If a problem occurs			

- from the beginning.
- 7. To return to the screen for selecting an item, press the stop key.

Method: DP

- 1. Select [DP] using the cursor up/down keys.
- 2. Set a specified original (P/N: 303LJ57010) in the DP.
- 3. Press the start key. Auto adjustment starts.
- 4. When automatic adjustment has normally completed, [OK] is displayed. If a problem occurs during auto adjustment, [NG XX] (XX is replaced by an error code) is displayed and operation stops. Should this happen, determine the details of the problem and repeat the procedure from the beginning.
- 5. To return to the screen for selecting an item, press the stop key.

		Description
411	Error Codes	
	Codes	Description
	01	Black band detection error (scanner leading edge registration)
	02	Black band detection error (scanner center line)
	03	Black band detection error (scanner main scanning direction magnification)
	04	Black band is not detected (scanner leading edge registration)
	05	Black band is not detected (scanner center line)
	06	Black band is not detected (scanner main scanning direction magnification)
	07	Black band is not detected (scanner auxiliary scanning direction magnification)
	08	Black band is not detected (DP main scanning direction magnification far end)
	09	Black band is not detected (DP main scanning direction magnification near end)
	0a	Black band is not detected (DP auxiliary scanning direction magnification leading edge)
	0b	Black band is not detected (DP auxiliary scanning direction magnification leading edge original check)
	0с	Black band is not detected (DP auxiliary scanning direction trailing edge)
	0d	Black band is not detected (DP auxiliary scanning direction trailing edge 2)
	0e	DMA time out
	Of	Auxiliary scanning direction magnification error
	10	Auxiliary scanning direction leading edge detection error
	11	Auxiliary scanning direction trailing edge detection error
	12	Auxiliary scanning direction skew 1.5 error
	13	Maintenance request error
	14	Main scanning direction center line error
	15	Main scanning direction skew 1.5 error
	16	Main scanning direction magnification error
	17	Service call error
	18	DP paper misfeed error
	19	PWB replacement error
	1a	Original error
	1b	Original error (scanner input gamma adjustment)
	1c	Original error (scanner matrix adjustment)

em No.		Description		
U425	Setting the target			
	adjustment. Purpose		chart (P/N: 302FZ56990) used for originals during automatic adjustment	
	Method			
	Press the start key Select the item to	<i>/.</i> be set using the cursor up/down k	evs	
	Display	Description Description		
	N875	Setting the N875 patch fo	r the original for adjustment	
	N475	Setting the N475 patch fo	r the original for adjustment	
	N125	Setting the N125 patch fo	r the original for adjustment	
	С	Setting the cyan patch for	the original for adjustment	
	M	Setting the magenta patch	n for the original for adjustment	
	Y	Setting the yellow patch for	or the original for adjustment	
	R	Setting the red patch for t	he red patch for the original for adjustment he green patch for the original for adjustment	
	G	Setting the green patch for		
	В	Setting the blue patch for the original for adjustment		
	Adjust Original Setting the main and auxiliary scanning directions		liary scanning directions	
	3. Select the item to be set using the cursor up/down keys.			
	Display	Description	Setting range	
	L	Setting the L value	0.0 to 100.0	
	а	Setting the a value	-200.0 to 200.0	
	b	Setting the b value	-200.0 to 200.0	
	4. Enters the value the numeric keys. 5. Press the start key		chart using the cursor left/right keys	

Item No. **Description** U425 Setting: [Adjust Original] 1. Measure the distance from the left edge to the black belt (a) of the original at A, B and C. Measurement procedure 1) Measure the distance from the edge to the black belt (a) of the original at A (30 mm from the leading edge), B (154.5 mm from the leading edge) and C (267 mm from the leading edge), respectively. 2) Apply the following formula for the values obtained: ((A + C) / 2 + B) / 2 2. Enter the values solved using the cursor left/right keys or numeric keys in [MAIN]. 3. Press the start key. The value is set. 4. Measure the distance from the leading edge to the black belt (c) of the original at D, E and F. Measurement procedure 1) Measure the distance from the edge to the black belt (c) of the original at D (50 mm from the left edge), E (105 mm from the left edge) and F (160 mm from the left edge), respec-2) Apply the following formula for the values obtained: ((D + F) / 2 + E) / 2 5. Enter the values solved using the cursor left/right keys or numeric keys in [SUB LEAD]. 6. Press the start key. The value is set. 7. Measure the length (G) from the edge of the black belt (b) to edge of the black belt (c) of the 8. Enter the measured value using the cursor left/right keys or numeric keys in [SUB TAIL]. 9. Press the start key. The value is set. 30mm Leading edge 267mm 154.5mm Left edge 1 c ₿В ÎΑ Black belt (a) 50mm D black Black belt (b) belt (c) 105mm É [Main] = ((A+C)/2+B)/2 [Sub Lead] = ((D+F)/2+E)/2 160mm F [SubTail] = G Original for adjustment (P/N: 302FZ56990) Figure 1-3-15 Completion Press the stop key. The screen for selecting a maintenance item No. is displayed.

Item No.	Description	
U600	Initializing all data	
	Description	
	Initializes software switches and all data in the backup data on the FAX control PWB, according to the destination and OEM.	
	Executes the check of the file system, when abnormality of the file system is detected, initializes the file system, communication past record and register setting contents.	
	Purpose	
	To initialize the FAX control PWB.	
	Method	
	1. Press the start key.	

- 2. Select [Execute]. The screen for entering the destination code and OEM code is displayed.
- 3. Select [Country Code] and enter a destination code using the numeric keys (refer to the destination code list on following for the destination code).
- 4. Press the start key.
 - There is no operation necessary on this screen.
 - The destination code and the OEM code are displayed with the values currently set.
- 5. Press the start key. Data initialization starts. To cancel data initialization, press the stop key.
- 6. After data initialization, the entered destination, OEM codes and ROM version are displayed. A ROM version displays three kinds, application, boot, and IPL.

Destination code list

Code	Destination	Code	Destination	
000	Japan	253	CTR21 (European nations)	
009	Australia		Italy	
038	China		Germany	
080	Hong Kong		Spain	
084	Indonesia		U.K.	
088	Israel		Netherlands	
097	Korea		Sweden	
108	Malaysia		France	
126	New Zealand		Austria	
136	Peru		Switzerland	
137	Philippines		Belgium	
152	Middle East		Denmark	
156	Singapore		Finland	
159	South Africa		Portugal	
169	Thailand		Ireland	
181	U.S.A.		Norway	
242	South America	254	Taiwan	
243	Saudi Arabia			

Item No.		Description
U601	Initializing permaner	nt data
0601	Description Initializes software sw Purpose To initialize the FAX co Method 1. Press the start key 2. Select [Execute]. 3. Select [Country Co tination code list o 4. Press the start key There is no operat The destination co 5. Press the start key 6. After data initializa	itches on the FAX control PWB according to the destination and OEM. ontrol PWB without changing user registration data. y. The screen for entering the destination code and OEM code is displayed. ode] and enter a destination code using the numeric keys (refer to the des- in page 1-3-42 for the destination code).
U603	Purpose To be executed as req	o enable the use of the machine as a fax. quired.
		y. and press the start key. using the cursor up/down keys.
	Display	Description
	DTMF	DTMF
	10PPS	10 PPS
	20PPS	20 PPS
	*: Initial setting: E 4. Press the start key Completion Press the stop key. Th	

Item No.		Description				
U604	Setting user data 2					
	Description Makes user settings to enable the use of t Purpose Use this if the user wishes to adjust the nu fax receiving mode when fax/telephone au	umber of rings that occur	before the unit switches into			
	Method 1. Press the start key. 2. Change the setting using the cursor left/right keys or numeric keys.					
	Description	Setting range	Initial setting			
	Number of fax/telephone rings	0 to 15	2 (120 V)/1 (220-240 V)			
	*: If you set this to 0, the unit will start 3. Press the start key. The value is set. Completion Press the stop key. The screen for selecting					
U605	Clearing data					
	Description Initializes data related to the fax transmiss Purpose To clear the transmission history. Method 1. Press the start key. 2. Select [Comm REC]. 3. Press the start key. Initialization process is displayed.					
	Completion Press the stop key. The screen for selecting	ng a maintenance item N	o. is displayed.			

Item No.	Description
U610	Setting system 1

Description

Makes settings for fax reception regarding the sizes of the fax paper and received images and automatic printing of the protocol list.

Method

- 1. Press the start key.
- 2. Select the item to be set using the cursor up/down keys.

Display	Description
Cut Line:100%	Sets the number of lines to be ignored when receiving a fax at 100% magnification.
Cut Line:Auto	Sets the number of lines to be ignored when receiving a fax in the auto reduction mode.
Cut Line:A4	Sets the number of lines to be ignored when receiving a fax (A4R/LetterR) in the auto reduction mode.

Setting the number of lines to be ignored when receiving a fax at 100% magnification. Sets the maximum number of lines to be ignored if the received data volume exceeds the recording capacity when recording the data at 100% magnification. If the number of excess lines is below the setting, those lines are ignored. If over the setting, they are recorded on the next page.

1. Change the setting using the cursor left/right keys or numeric keys.

Description	Setting range	Initial setting	Change in value per step
Number of lines to be ignored when receiving at 100%	0 to 22	3	16 lines

^{*:} Increase the setting if a blank second page is output, and decrease it if the received image does not include the entire transmitted data.

2. Press the start key. The value is set.

Setting the number of lines to be ignored when receiving a fax in the auto reduction mode Sets the maximum number of lines to be ignored if the received data volume exceeds the recording capacity when the data is recorded in the auto reduction mode. If the number of excess lines is below the setting, those lines are ignored. If over the setting, the entire data on a page is further reduced so that it can be recorded on the same page.

1. Change the setting using the cursor left/right keys or numeric keys.

Description	Setting range	Initial setting	Change in value per step
Number of lines to be ignored when receiving in the auto reduction mode	0 to 22	0	16 lines

^{*:} Increase the setting if a page received in the reduction mode is over-reduced and too much trailing edge margin is left. Decrease it if the received image does not include all transmitted data.

2. Press the start key. The value is set.

Item No.	ι	Description		
U610	Setting the number of lines to be ignored when receiving a fax (A4R/LetterR) in the reduction mode Sets the maximum number of lines to be ignored if the received data volume exceeds the ing capacity when the data is recorded in the auto reduction mode onto A4R or LetterR paunder the conditions below. If the number of excess lines is below the setting, those lines are ignored. If over the setti entire data on a page is further reduced so that it can be recorded on the same page. 1. Change the setting using the cursor left/right keys or numeric keys.			me exceeds the record-AR or LetterR paper If over the setting, the
	Description	Setting range	Initial setting	Change in value per step
	Number of lines to be ignored when receiving a fax (A4R, letter) in the autoreduction mode	0 to 22	0	16 lines
	Completion Press the stop key. The screen for selectin	g a maintenan	ce item No. is d	isplayed.

Item No.	Description
U611	Setting system 2
	Description Sets the number of adjustment lines for automatic reduction.

- 1. Press the start key.
- 2. Select the item to be set using the cursor up/down keys.

Display	Description
Adj Lines	Sets the number of adjustment lines for automatic reduction.
Adj Lines(A4)	Sets the number of adjustment lines for automatic reduction when A4 paper is set.
Adj Lines(LT)	Sets the number of adjustment lines for automatic reduction when letter size paper is set.

Setting the number of adjustment lines for automatic reduction

Sets the number of adjustment lines for automatic reduction.

1. Change the setting using the cursor left/right keys or numeric keys.

Description	Setting range	Initial setting
Number of adjustment lines for automatic reduction	0 to 22	7

2. Press the start key. The value is set.

Setting the number of adjustment lines for automatic reduction when A4 paper is set Sets the number of adjustment lines for automatic reduction when A4 paper is set.

1. Change the setting using the cursor left/right keys or numeric keys.

Description	Setting range	Initial setting
Number of adjustment lines for automatic reduction	0 to 22	22
when A4 paper is set		

2. Press the start key. The value is set.

Setting the number of adjustment lines for automatic reduction when letter size paper is set

Sets the number of adjustment lines for automatic reduction when letter size paper is set.

1. Change the setting using the cursor left/right keys or numeric keys.

Description	Setting range	Initial setting
Number of adjustment lines for automatic reduction when letter size paper is set	0 to 26	26

2. Press the start key. The value is set.

Completion

Item No.	Description
U612	Setting system 3

Description

Makes settings for fax transmission regarding operation and automatic printing of the protocol list. This determines how trailing edge margin is detected (to prevent image from being mutilated) while printing a received Fax.

Method

- 1. Press the start key.
- 2. Select the item to be set using the cursor up/down keys.

Display	Description
Auto Reduction	Selects if auto reduction in the auxiliary direction is to be performed.
Protocol List	Sets the automatic printing of the protocol list.
Detect Trail	Sets how trailing edge margins are detected

Selecting if auto reduction in the auxiliary direction is to be performed

Sets whether to receive a long document by automatically reducing it in the auxiliary direction or at 100% magnification.

1. Select the setting using the cursor left/right keys.

Display	Description
On	Auto reduction is performed if the received document is longer than the fax paper.
Off	Auto reduction is not performed.

^{*:} Initial setting: On

2. Press the start key. The setting is set.

Setting the automatic printing of the protocol list

Sets if the protocol list is automatically printed out.

1. Select the setting using the cursor left/right keys.

Display	Description
On	The protocol list is automatically printed out after communication.
Err	The protocol list is automatically printed out after communication only if a communication error occurs.
Off	The protocol list is not printed out automatically.

^{*:} Initial setting: Off

2. Press the start key. The setting is set.

Item No.		Description	
U612			
	Display	Description	
	On	Detects trailing edge margin	
	Off	Does not detect trailing edge margin	
	* : Initial settin 2. Press the start	g: On key. The setting is set.	
	Completion Press the stop key	. The screen for selecting a maintenance item No. is displayed.	
U620	Setting the remot	te switching mode	
	Description Sets the signal detection method for remote switching. Be sure to change the setting according to the type of telephone connected to the machine. Setting		
	Press the start Select [Remore	t key. t Mode] and press the start key. de using the cursor up/down keys.	
	Display	Description	
	One	One-shot detection	
	Cont	Continuous detection	
	* : Initial settin 4. Press the start	g: One key. The setting is set.	
	Completion Press the stop key	. The screen for selecting a maintenance item No. is displayed.	

tem No.		Desci	ription		
U625	Setting the transmiss	ion system 1			
	Description Makes settings for the a	auto redialing interval and	d the number of tim	nes of auto redialing.	
		<u> </u>		sion is not possible due to nplete due to too long red	
	Method				
	 Press the start key. Select the item to b 	e set using the cursor up	/down keys.		
	Display	Description			
	Interval	Setting the auto r	edialing interval		
	Times	Setting the number	er of times of auto	redialing	
	Setting the auto redialing interval 1. Change the setting using the cursor left/right keys.				
	Description		Setting range	Initial setting	
	Redialing interval		1 to 9 (min.)	3 (120 V)/2 (220-240 V	
	Setting the number of times of auto redialing 1. Change the setting using the cursor left/right keys or numeric keys.				
	Description		Setting range	Initial setting	
	Number of redialin	g	0 to 15	2 (120 V)/3 (220-240 V	
	2. Press the start key.	The value is set.			
	Completion Press the stop key. The	e screen for selecting a m	aintenance item N	o. is displayed.	

Item No.	Description
U630	Setting communication control 1
	Description Makes settings for fax transmission regarding the communication.

- 1. Press the start key.
- 2. Select the item to be set using the cursor up/down keys.

Display	Description
TX Speed	Sets the communication starting speed.
RX Speed	Sets the reception speed.
TX Echo	Sets the waiting period to prevent echo problems at the sender.
RX Echo	Sets the waiting period to prevent echo problems at the receiver.

Setting the communication starting speed

Sets the initial communication speed when starting transmission. When the destination unit has V.34 capability, V.34 is selected for transmission, regardless of this setting.

1. Select the setting using the cursor up/down keys.

Display	Description
14400bps/V17	V.17, 14400 bps
9600bps/V29	V.17, 9600 bps
4800bps/V27ter	V.27ter, 4800 bps
2400bps/V27ter	V.27ter, 2400 bps

^{*:} Initial setting: 14400bps/V17

Setting the reception speed

Sets the reception speed that the sender is informed of using the DIS or NSF signal. When the destination unit has V.34 capability, V.34 is selected, regardless of the setting.

1. Select the setting using the cursor up/down keys.

Display	Description
14400bps	V.17, V.33, V.29, V.27ter
9600bps	V.29, V.27ter
4800bps	V.27ter
2400bps	V.27ter (fallback only)

^{*:} Initial setting: 14400bps

2. Press the start key. The setting is set.

^{2.} Press the start key. The setting is set.

	Description		
U630	Sets the period befor occur due to echoes	period to prevent echo problems at the sender e a DCS signal is sent after a DIS signal is received. Used when problems at the sender. using the cursor up/down keys.	
	Display	Description	
	500	Sends a DCS 500 ms after receiving a DIS.	
	300	Sends a DCS 300 ms after receiving a DIS.	
	* : Initial setting: 2. Press the start ke	300 ey. The setting is set.	
	Sets the period befor when problems occur	period to prevent echo problems at the receiver e an NSF, CSI or DIS signal is sent after a CED signal is received. Used r due to echoes at the receiver. using the cursor up/down keys.	
	Display	Description	
	500	Sends an NSF, CSI or DIS 500 ms after receiving a CED.	
	75	Sends an NSF, CSI or DIS 75 ms after receiving a CED.	
	* : Initial setting:	75	

Item No.	Description
U631	Setting communication control 2
	Description
	Makes settings regarding fax transmission.

- 1. Press the start key.
- 2. Select the item to be set using the cursor up/down keys.

Display	Description
ECM TX	Sets ECM transmission.
ECM RX	Sets ECM reception.
CED Freq	Sets the frequency of the CED signal.

Setting ECM transmission

To be set to Off when reduction of transmission costs is of higher priority than image quality. This should not be set to Off when connecting to the IP (Internet Protocol) telephone line.

1. Select the setting using the cursor up/down keys.

Display	Description
On	ECM transmission is enabled.
Off	ECM transmission is disabled.

^{*:} Initial setting: On

2. Press the start key. The setting is set.

Setting ECM reception

To be set to Off when reduction of transmission costs is of higher priority than image quality. This should not be set to Off when connecting to the IP (Internet Protocol) telephone line.

1. Select the setting using the cursor up/down keys.

Display	Description
On	ECM reception is enabled.
Off	ECM reception is disabled.

^{*:} Initial setting: On

2. Press the start key. The setting is set.

Setting the frequency of the CED signal

Sets the frequency of the CED signal. Used as one of the measures to improve transmission performance for international communications.

1. Select the setting using the cursor up/down keys.

Display	Description
2100	2100 Hz
1100	1100 Hz

^{*:} Initial setting: 2100

2. Press the start key. The setting is set.

Completion

Item No.		Description
U632	Setting communication	control 3
	Description Makes settings for fax tra	ansmission regarding the communication.
	Method 1. Press the start key. 2. Select the item to be	set using the cursor up/down keys.
	Display	Description
	DIS 4Byte	Sets the DIS signal to 4 bytes.
	Num OF CNG(F/T)	Sets the CNG detection times in the fax/telephone auto select mode.
	Setting the DIS signal to 4 bytes Sets if bit 33 and later bits of the DIS/DTC signal are sent. 1. Select the setting using the cursor up/down keys.	
	Display	Description
	On	Bit 33 and later bits of the DIS/DTC signal are not sent.
	Off	Bit 33 and later bits of the DIS/DTC signal are sent.
	* : Initial setting: Off 2. Press the start key. T	he setting is set.
	Sets the CNG detection t	ion times in the fax/telephone auto select mode imes in the fax/telephone auto select mode.
		ng the cursor up/down keys.
	Display	Description
	l 1Timo	Dotacte CNC anco

Display	Description
1Time	Detects CNG once.
2Time	Detects CNG twice.

^{* :} Initial setting: 2Time

2. Press the start key. The setting is set.

Completion

Item No.		Description	
U633	Setting communication cor	ntrol 4	
	Description		
	Makes settings for fax transmission regarding the communication.		
	Purpose		
	To reduce transmission errors	s when a low quality line is used.	
	Method		
	1. Press the start key.		
	2. Select the item to be set	using the cursor up/down keys.	
	Display	Description	

Display	Description
V.34	Enables or disables V.34 communication.
V.34-3429Hz	Sets the V.34 symbol speed (3429 Hz).
DIS 2Res	Sets the number of times of DIS signal reception.
RTN Check	Sets the reference for RTN signal output.

Enabling/disabling V.34 communication

Sets whether V.34 communication is enabled/disabled for transmission and reception.

1. Select the setting using the cursor up/down keys.

Display	Description
On	V.34 communication is enabled for both transmission and reception.
TX	V.34 communication is enabled for transmission only.
RX	V.34 communication is enabled for reception only.
Off	V.34 communication is disabled for both transmission and reception.

^{* :} Initial setting: On

2. Press the start key. The setting is set.

Setting the V.34 symbol speed (3429 Hz)

Sets if the V.34 symbol speed 3429 Hz is used.

1. Select the setting using the cursor up/down keys.

Display	Description
On	V.34 symbol speed 3429 Hz is used.
Off	V.34 symbol speed 3429 Hz is not used.

^{* :} Initial setting: On

2. Press the start key. The setting is set.

Item No. Description U633 Setting the number of times of DIS signal reception

Sets the number of times to receive the DIS signal to once or twice. Used as one of the correction measures for transmission errors and other problems.

1. Select the setting using the cursor up/down keys.

Display	Description
Once	Responds to the first signal.
Twice	Responds to the second signal.

^{*:} Initial setting: Once

2. Press the start key. The setting is set.

Setting the reference for RTN signal output

Sets the error line rate as the reference for RTN signal output. If transmission errors occur frequently due to the quality of the line, they can be reduced by lowering this setting.

1. Select the setting using the cursor up/down keys.

Display	Description
5%	Error line rate of 5%
10%	Error line rate of 10%
15%	Error line rate of 15%
20%	Error line rate of 20%

^{*:} Initial setting: 15%

2. Press the start key. The setting is set.

Completion

Press the stop key. The screen for selecting a maintenance item No. is displayed.

U634 Setting communication control 5

Description

Sets the maximum number of error bytes judged acceptable when receiving a TCF signal. Used as a measure to ease transmission conditions if transmission errors occur.

Setting

- 1. Press the start key.
- 2. Change the setting using the cursor left/right keys or numeric keys.

Description	Setting range	Initial setting
Number of allowed error bytes when detecting TCF	0 to 255	0

3. Press the start key. The value is set.

Completion

2KW/2KX Item No. **Description** U640 Setting communication time 1 Description Sets the detection time when one-shot detection is selected for remote switching. (This setting item will be displayed, but the setting made is ineffective.) Sets the detection time when continuous detection is selected for remote switching. (This setting item will be displayed, but the setting made is ineffective.) Method 1. Press the start key. 2. Select the item to be set using the cursor up/down keys. **Display** Description Time (One) Sets the one-shot detection time for remote switching. Time (Cont) Sets the continuous detection time for remote switching. Setting the one-shot detection time for remote switching 1. Change the setting using the cursor left/right keys. **Description** Setting range Initial setting 0 to 255 7 One-shot detection time for remote switching 2. Press the start key. The value is set. Setting the continuous detection time for remote switching 1. Change the setting using the cursor left/right keys. **Description** Setting range Initial setting Continuous detection time for remote switching 0 to 255 80 2. Press the start key. The value is set. Completion Press the stop key. The screen for selecting a maintenance item No. is displayed.

Item No.	Description	
U641	Setting communication time 2	
	Description	
	Sets the time-out time for fax transmission.	
	Purpose	
	To improve transmission performance for international communications mainly.	

- 1. Press the start key.
- 2. Select the item to be set using the cursor up/down keys.

Display	Description
T0 Time Out	Sets the T0 time-out time.
T1 Time Out	Sets the T1 time-out time.
T2 Time Out	Sets the T2 time-out time.
Ta Time Out	Sets the Ta time-out time.
Tb1 Time Out	Sets the Tb1 time-out time.
Tb2 Time Out	Sets the Tb2 time-out time.
Tc Time Out	Sets the Tc time-out time.
Td Time Out	Sets the Td time-out time.

Setting the T0 time-out time

Sets the time before detecting a CED or DIS signal after a dialing signal is sent.

Depending on the quality of the exchange, or when the auto select function is selected at the destination unit, a line can be disconnected. Change the setting to prevent this problem.

1. Change the setting using the cursor left/right keys.

Description	Setting range	Initial setting
T0 time-out time	30 to 90 s	56

2. Press the start key. The value is set.

Setting the T1 time-out time

Sets the time before receiving the correct signal after call reception. No change is necessary for this maintenance item.

1. Change the setting using the cursor left/right keys.

Description	Setting range	Initial setting
T1 time-out time	30 to 90 s	36

2. Press the start key. The value is set.

Item No.	Description			
U641	Setting the T2 time-out time The T2 time-out time decides the From CFR signal output to image From image data reception to the In ECM, from RNR signal detection 1. Change the setting using the	e data reception e next signal reception on to the next signal rec	ception	
	Description	Setting range	Initial setting	Change in value per step
	T2 time-out time	1 to 255	69	100 ms

2. Press the start key. The value is set.

Setting the Ta time-out time

In the fax/telephone auto select mode, sets the time to continue ringing an operator through the connected telephone after receiving a call as a fax machine (see figure 1-3-16). A fax signal is received within the Ta set time, or the fax mode is selected automatically when the time elapses. In fax/telephone auto select mode, change the setting when fax reception is unsuccessful or a telephone fails to receive a call.

1. Change the setting using the cursor left/right keys.

Description	Setting range	Initial setting
Ta time-out time	1 to 255	30

2. Press the start key. The value is set.

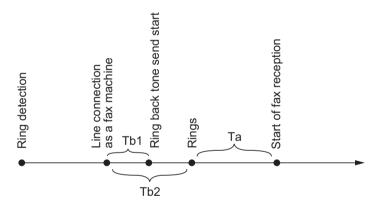


Figure 1-3-16 Ta/Tb1/Tb2 time-out time

Setting the Tb1 time-out time

In the fax/telephone auto select mode, sets the time to start sending the ring back tone after receiving a call as a fax machine (see figure 1-3-16). In fax/telephone auto select mode, change the setting when fax reception is unsuccessful or a telephone fails to receive a call.

1. Change the setting using the cursor left/right keys.

Description	Setting range	Initial setting	Change in value per step
Tb1 time-out time	1 to 255	20	100 ms

2. Press the start key. The value is set.

Item No. Description

U641 Setting the Tb2 time-out time

In the fax/telephone auto select mode, sets the time to start ringing an operator through the connected telephone after receiving a call as a fax machine (see figure 1-3-16). In the fax/telephone auto select mode, change the setting when fax reception is unsuccessful or a telephone fails to receive a call.

1. Change the setting using the cursor left/right keys.

Description	Setting range	Initial setting	Change in value per step
Tb2 time-out time	1 to 255	80	100 ms

2. Press the start key. The value is set.

Setting the Tc time-out time

In the TAD mode, set the time to check if there are any triggers for shifting to fax reception after a connected telephone receives a call. Only the telephone function is available if shifting is not made within the set Tc time.

In the TAD mode, change the setting when fax reception is unsuccessful or a telephone fails to receive a call.

1. Change the setting using the cursor left/right keys.

Description	Setting range	Initial setting
Tc time-out time	1 to 255	60

2. Press the start key. The value is set.

Setting the Td time-out time

Sets the length of the time required to determine silent status (fax), one of the triggers for Tc time check. In the TAD mode, change the setting when fax reception is unsuccessful or a telephone fails to receive a call. Be sure not to set it too short; otherwise, the mode may be shifted to fax while the unit is being used as a telephone.

1. Change the setting using the cursor left/right keys.

Description	Setting range	Initial setting
Td time-out time	1 to 255	9 (120 V)/6 (220-240 V)

2. Press the start key. The value is set.

Completion

Item No.	Description				
U650	Setting modem 1				
	Description				
	Sets the G3 cable equalizer. Sets the modern detection level.				
	Purpose				
		ment to make the equalizer compatible with the line characteristics. performance when a low quality line is used.			
		portermands when a few quality into the about.			
	Method				
	 Press the start key. Select the item to be set 	using the cursor up/down keys.			
	Display	Description			
	Reg G3 TX Eqr	Sets the G3 transmission cable equalizer.			
	Reg G3 RX Eqr	Sets the G3 reception cable equalizer.			
	RX Mdm Level	Sets the modem detection level.			
	Setting the G3 transmission	on cable equalizer 3] or [12dB] using the cursor up/down keys.			
	*: Initial setting: 0dB	of the carson appropriate series of appropriate series.			
	2. Press the start key. The	setting is set.			
	Setting the G3 reception c	able equalizer			
		b] or [12dB] using the cursor up/down keys.			
	* : Initial setting: 0dB				
	2. Press the start key. The setting is set.				
	Setting the modem detecti				
	1. Select [-33dBm], [-38dBm], [-43dBm] or [-48dBm] using the cursor up/down keys.				
	* : Initial setting: -43dBm 2. Press the start key. The setting is set.				
	Completion Press the stop key. The scre	een for selecting a maintenance item No. is displayed.			
	Troop and stop hoj. The cond	ion to colocaring a maintenance norm to the displayed.			

Item No.		Descript	tion	
U651	Setting modem 2			
	Purpose	out level. It level of a push-button dial te ur when sending a signal with		ephone.
	1. Press the start ke	-		
		be set using the cursor up/dong using the cursor left/right ke	=	
	Display	Description	Setting range	Initial setting
	Sgl LV Mdm	Modem output level	1 to 15	9 (120 V) 10 (220-240 V)
	DTMF LV(C)	DTMF output level (main value)	0 to 15.0	5 (120 V) 10.5 (220-240 V)
	DTMF LV(D)	DTMF output level (level difference)	0 to 5.5	2 (120 V) 2.5 (220-240 V)

em No.		Description	
U660	Setting the NCU		
	Description Makes setting regarding Purpose To be executed as requi	g the network control unit (NCU).	
	Method 1. Press the start key. 2. Select the item to be	e set using the cursor up/down keys.	
	Display	Description	
	Exchange	Sets the connection to PBX/PSTN.	
	Dial Tone	Sets PSTN dial tone detection.	
	Busy Tone	Sets busy tone detection.	
	PBX Setting	Setting for a PBX.	
	DC Loop	Sets the loop current detection before dialing.	
	Select the setting using the cursor up/down keys. Display Description Description		
	Display	Description	
	PSTN	Connected to the public switched telephone network.	
	PBX	Connected to a PBX.	
	* : Initial setting: PS 2. Press the start key.		
	to a public switched tele	s detected to check the telephone is off the hook when a fax is connect	
	Display	Description	
	On	Detects the dial tone.	
	Off	Does not detect the dial tone.	
	* : Initial setting: On 2. Press the start key.		

Item No. Description

U660 Setting busy tone detection

When a fax signal is sent, sets whether the line is disconnected immediately after a busy tone is detected, or the busy tone is not detected and the line remains connected until T0 time-out time. Fax transmission may fail due to incorrect busy tone detection. When set to 2, this problem may be prevented. However, the line is not disconnected within the T0 time-out time even if the destination line is busy.

1. Select the setting using the cursor up/down keys.

Display	Description
On	Detects busy tone.
Off	Does not detect busy tone.

^{*:} Initial setting: On

2. Press the start key. The setting is set.

Setting for a PBX

Selects the mode to connect an outside call when connected to a PBX.

According to the type of the PBX connected, select the mode to connect an outside call.

1. Select the setting using the cursor up/down keys.

Display	Description
Flash	Flashing mode
Loop	Code number mode

^{*:} Initial setting: Loop

2. Press the start key. The setting is set.

Setting the loop current detection before dialing

Sets if the loop current detection is performed before dialing.

1. Select the setting using the cursor up/down keys.

Display	Description	
On	Performs loop current detection before dialing.	
Off	Does not perform loop current detection before dialing.	

^{*:} Initial setting: On

2. Press the start key. The setting is set.

Completion

Description Outputs a list of data regarding fax transmissions. Printing a list is disabled either when a job is remaining in the buffer or when [Pause Jobs] is pressed to halt printing. Purpose To check conditions of use, settings and transmission procedures of the fax. Method 1. Press the start key. 2. Select the item to be output using the cursor up/down keys. 3. Press the start key. The selected list is output. Display Description	e All Print
Outputs a list of data regarding fax transmissions. Printing a list is disabled either when a job is remaining in the buffer or when [Pause Jobs] is pressed to halt printing. Purpose To check conditions of use, settings and transmission procedures of the fax. Method 1. Press the start key. 2. Select the item to be output using the cursor up/down keys. 3. Press the start key. The selected list is output.	e All Print
Printing a list is disabled either when a job is remaining in the buffer or when [Pause Jobs] is pressed to halt printing. Purpose To check conditions of use, settings and transmission procedures of the fax. Method 1. Press the start key. 2. Select the item to be output using the cursor up/down keys. 3. Press the start key. The selected list is output.	e All Print
Jobs] is pressed to halt printing. Purpose To check conditions of use, settings and transmission procedures of the fax. Method 1. Press the start key. 2. Select the item to be output using the cursor up/down keys. 3. Press the start key. The selected list is output.	e All Print
Purpose To check conditions of use, settings and transmission procedures of the fax. Method 1. Press the start key. 2. Select the item to be output using the cursor up/down keys. 3. Press the start key. The selected list is output.	
To check conditions of use, settings and transmission procedures of the fax. Method 1. Press the start key. 2. Select the item to be output using the cursor up/down keys. 3. Press the start key. The selected list is output.	
 Press the start key. Select the item to be output using the cursor up/down keys. Press the start key. The selected list is output. 	
2. Select the item to be output using the cursor up/down keys.3. Press the start key. The selected list is output.	
3. Press the start key. The selected list is output.	
Biopiay	
Sys Conf Report Outputs a list of software switches, self telephone nu confidential boxes, ROM versions and other information	
Action List Outputs a list of error history, transmission line detail other information.	s and
Self Sts Report Outputs a list of settings in maintenance mode (own-report) regarding fax transmission only.	-status
Protocol List Outputs a list of transmission procedures.	
Error List Outputs a list of error.	
Addr List(No.) Outputs address book in order IDs were added	
Addr List(Idx) Outputs address book in order of names	
One-touch List Outputs a list of one-touch.	
Group List Outputs a list of group.	

Item No.	Description				
U695	FAX function customize Description				
	Sets fax batch transmission ON/OFF. Also changes the print size priority at the time of small size reception.				
	Purpose				
	To be executed as required.				
	Setting				
	Select the setting us	sing the cursor up/down keys.			
	Display	Description			
	FAX Bulk TX	fax batch transmission On/Off			
	A5 Pt Pri Chg	Change of print size priority at the time of small size reception			

Setting: [FAX Bulk TX]

1. Select On or Off using the cursor left/right keys.

Display Description		
On	Fax batch transmission is enabled.	
Off Fax batch transmission is disabled.		

^{*:} Initial setting: On

2. Press the start key. The setting is set.

Setting: [A5 Pt Pri Chg]

1. Select ON or OFF using the cursor left/right keys.

Display	Description
On	At the time of A5 size reception: A5→B5→A4
Off	At the time of A5 size reception: A5→A4→B5

^{*:} Initial setting: Off

2. Press the start key. The setting is set.

Completion

Item No.	Description				
U699	Setting the software switches				
	Description				
		ftware switche	s on the FAX control PWB individually.		
	Purpose				
			en a problem such as split output of received originals occurs. performance is largely affected, normally this setting need not be		
	Method				
	1. Press the start key.				
	2. Press [S	-			
	3. Enter the enter ke	e desired software switch number (3 digits) using the numeric keys and press the y.			
		•	0 to switch each bit between 0 and 1.		
	5. Press th	ne start key to	set the value.		
	Completio				
	Press the s	top key. The s	creen for selecting a maintenance item No. is displayed.		
	List of Soft	tware Switche	es of Which the Setting Can Be Changed		
	<commun< td=""><td>ication contro</td><td>ol procedure></td></commun<>	ication contro	ol procedure>		
	No.	Bit	Item		
	36	7654	Coding format in transmission		
		3210	Coding format in reception		
	37	5	33600 bps/V34		
		4	31200 bps/V34		
		3	28800 bps///34		

No.	Bit	Item		
36	7654	Coding format in transmission		
-	3210	Coding format in reception		
37	5	33600 bps/V34		
-	4	31200 bps/V34		
-	3	28800 bps/V34		
-	2	26400 bps/V34		
=	1	24000 bps/V34		
=	0	21600 bps/V34		
38	7	19200 bps/V34		
=	6	16800 bps/V34		
=	5	14400 bps/V34		
=	4	12000 bps/V34		
=	3	9600 bps/V34		
=	2	7200 bps/V34		
=	1	4800 bps/V34		
=	0	2400 bps/V34		
41	3	FSK detection in V.8		
42	4	4800 bps when low-speed setting is active		
Ī	2	FIF length in transmission of more than 4 times of DIS/DTC signal		

tem No.	Description				
U699	<communication setting="" time=""></communication>				
	No.	Bit	Item		
	53	76543210	T3 timeout setting		
	54	76543210	T4 timeout setting (automatic equipment)		
	55	76543210	T5 timeout setting		
	60	76543210	Time before transmission of CNG (1100 Hz) signal		
	63	76543210	T0 timeout setting (manual equipment)		
	64	7	Phase C timeout in ECM reception		
	66	76543210	Timeout 1 in countermeasures against echo		
	68	76543210	Timeout for FSK detection start in V.8		
	<modem s<="" td=""><td>etting></td><td></td></modem>	etting>			
	No.	Bit	Item		
	89	76543	RX gain adjust		
	<ncu setti<="" td=""><td></td><td></td></ncu>				
	No.	Bit	Item		
	121	7654	Dial tone/busy tone detection pattern		
	122	7654	Busy tone detection pattern		
		1	Busy tone detection in automatic FAX/TEL switching		
	125	76543210	Access code registration for connection to PSTN		
	126	7654	FAX/TEL automatic switching ringback tone ON/OFF cycle		
	<calling td="" ti<=""><td>me setting></td><td></td></calling>	me setting>			
	No.	Bit	Item		
	133	76543210	DTMF signal transmission time		
	134	76543210	DTMF signal pause time		
	141	76543210	Ringer detection cycle (minimum)		
	142	76543210	Ringer detection cycle (maximum)		
	440	76543210	Ringer ON time detection		
	143	70343210			
	143	76543210	Ringer OFF time detection		
			Ringer OFF time detection Ringer OFF non-detection time		
	144	76543210			
	144 145	76543210 76543210	Ringer OFF non-detection time		
	144 145 147	76543210 76543210 76543210	Ringer OFF non-detection time Dial tone detection time (continuous tone)		

Item No.	Description						
U910	Clearing the print coverage data						
	Description						
	Clears the accumulated data for the print coverage per A4 size paper and its period of time (as						
	shown on the service status report). Purpose						
	To clear data as required at times such as during maintenance service.						
	Method						
	1. Press the start key.						
	Select [Execute] using the cursor up/down keys.						
	3. Press the start key. The print coverage data is cleared.						
	Completion						
	Press the stop key. The screen for selecting a maintenance item No. is displayed.						

tem No.	Description							
U917	Setting backup data reading/writing							
	Description							
	Retrieves the backup data to a USB memory from the machine; or writes the data from the USB							
	memory to the machine.							
	Purpose To store and write data when replacing the HDD.							
	וט אוטוב מווע write uata wrien replacing the חטט.							
	Method							
	Press the power key on the operation panel, and after verifying the power indicator has gon off, switch off the main power switch.							
	off, switch off the main power switch. 2. Insert USB memory in USB memory slot.							
		Turn the main pov	-	•				
				ow the machine to recog	nize the USB memory.			
		Enter the mainten		em.				
		Press the start ke Select [Export] or	•	using the cursor un/dow	vn keys and press the start key.			
	0.	Display	Import	Description	with keys and press the start key.			
		Import			ISB memory to the machine			
		Export		Retrieving from the machine to a USB memory				
	7		ing the	e cursor up/down keys.				
		Display	Descri		Depending data			
		Address Book	Addres	ss book	-			
		Job Account	Job ac	counting	-			
		One Touch	Inform	ation on one-touch key	Address book			
		User	User n	nanagements	Job accounting			
		Program	Progra	m information	Job accountings and user managements			
		Document Box	Document box information		Job accountings and user managements			
		Fax Forward	FAX transfer information		Job accountings, user managements and document box information			
	9.	retrieved or wr Select [On] using Press the start ke The progress of s When an error oc When normally co	itten in. the curs y. Starts elected curs, the empleted	sor left/right keys. reading or writing. item is displayed in %. e operation is canceled a d, [Fin] is displayed.	and an error code is displayed. leting writing when selecting [Import].			

em No.	Description				
U917	Error Codes				
	Codes	Description	Codes	Description	
	e002	Parameter error	e31e	User managements error	
	e003	File write error	e31f	User managements open error	
	e004	File initialization error	e320	User managements error	
	e005	File error	e410	Box file open error	
	e006	Processing error	e411	Box error in writing	
	e010	Address book clear error (contact)	e412	Box error in reading	
	e011	Address book open error (contact)	e413	Box list error	
	e012	Address book list error (contact)	e414	Box list error	
	e013	Address book list error (contact)	e415	Box error	
	e014	Address book clear error (group)	e416	Box error	
	e015	Address book open error (group)	e417	Box open error	
	e016	Address book list error (group)	e418	Box close error	
	e017	Address book list error (group)	e419	Box creation error	
	e110	Job accounting clear error	e41a	Box creation error	
	e111	Job accounting open error	e41b	Box deletion error	
	e112	Job accounting open error	e41c	Box movement error	
	e113	Job accounting error in writing	e510	Program error in writing	
	e114	Job accounting list error	e511	Program error in reading	
	e115	Job accounting list error	e710	Fax memory open error	
	e210	One-touch open error	e711	Fax memory initialization error	
	e211	One-touch list error	e712	Fax memory list error	
	e212	One-touch list error	e713	Fax memory error	
	e310	User managements backup error	e714	Fax memory error	
	e311	User managements clear error	e715	Fax memory mode error	
	e312	User managements open error	e716	Fax memory error	
	e313	User managements open error	e717	Fax memory error	
	e314	User managements open error	e718	Fax memory mode error	
	e315	User managements error in writing	e910	File reading error	
	e316	User managements list error	e911	File writing error	
	e317	User managements list error	e912	Data mismatch	
	e318	User managements list error	e913	Log file open error	
	e319	User managements list error	e914	Log file error in writing	
	e31a	User managements open error	e915	Directory open error	
	e31b	User managements error	e916	Directory error in reading	
	e31c	User managements error	e917	Synchronization error	
	e31d	User managements open error	e918	Synchronization error	

m No.	Description				
J917	Error Codes				
	Codes	Description	Codes	Description	
	d000	Unspecified error	d00b	File reading error	
	d001	HDD unavailable	d00c	File writing error	
	d002	USB memory is not inserted	d00d	File copy error	
	d003	File for writing is not found in the USB	d00e	File compressed error	
	d004	File for reading is not found in the HDD	d00f	File decompressed error	
	d005	USB error in writing	d010	Directory open error	
	d006	USB error in reading	d011	Directory creation error	
	d007	USB unmount error	d012	File writing error	
	d008	File rename error	d013	File reading error	
	d009	File open error	d014	File deletion error	
	d00a	File close error	d015	File copy error to the USB	
	Personal a Group add Job accou One-touch User mana	els (without FAX). address book: FAX-related data are not im lress book: Group addresses including FA nting data: Initial values are added for FA data: Groups assigned with FAX address agement data: Initial values are added for ata: Not imported. (The same applies who	iported. X address X-related (ses or thos out-going	ses are not imported. data. se including FAX are not importe FAXes of authentication.	
	Personal a Group add Job accou One-touch User mana Program d models.)	els (without FAX). Iddress book: FAX-related data are not im Iress book: Group addresses including FA Inting data: Initial values are added for FAI data: Groups assigned with FAX address Idded for FAI agement data: Initial values are added for ata: Not imported. (The same applies who	iported. X address X-related oses or those out-going en data are	ses are not imported. data. se including FAX are not importe FAXes of authentication. e imported from 3 in 1 to 4 in 1	
	Personal a Group add Job accou One-touch User mana Program d models.)	els (without FAX). address book: FAX-related data are not im dress book: Group addresses including FA nting data: Initial values are added for FA data: Groups assigned with FAX address agement data: Initial values are added for ata: Not imported. (The same applies who	iported. X address X-related oses or those out-going en data are	ses are not imported. data. se including FAX are not importe FAXes of authentication. e imported from 3 in 1 to 4 in 1	
	Personal a Group add Job accou One-touch User mana Program d models.)	els (without FAX). address book: FAX-related data are not im dress book: Group addresses including FA nting data: Initial values are added for FA data: Groups assigned with FAX address agement data: Initial values are added for ata: Not imported. (The same applies who	iported. X address X-related oses or those out-going en data are	ses are not imported. data. se including FAX are not importe FAXes of authentication. e imported from 3 in 1 to 4 in 1	
	Personal a Group add Job accou One-touch User mana Program d models.)	els (without FAX). address book: FAX-related data are not im dress book: Group addresses including FA nting data: Initial values are added for FA data: Groups assigned with FAX address agement data: Initial values are added for ata: Not imported. (The same applies who	iported. X address X-related oses or those out-going en data are	data. se including FAX are not importe FAXes of authentication. e imported from 3 in 1 to 4 in 1	
	Personal a Group add Job accou One-touch User mana Program d models.)	els (without FAX). address book: FAX-related data are not im dress book: Group addresses including FA nting data: Initial values are added for FA data: Groups assigned with FAX address agement data: Initial values are added for ata: Not imported. (The same applies who	iported. X address X-related oses or those out-going en data are	ses are not imported. data. se including FAX are not importe FAXes of authentication. e imported from 3 in 1 to 4 in 1	
	Personal a Group add Job accou One-touch User mana Program d models.)	els (without FAX). address book: FAX-related data are not im dress book: Group addresses including FA nting data: Initial values are added for FA data: Groups assigned with FAX address agement data: Initial values are added for ata: Not imported. (The same applies who	iported. X address X-related oses or those out-going en data are	ses are not imported. data. se including FAX are not importe FAXes of authentication. e imported from 3 in 1 to 4 in 1	
	Personal a Group add Job accou One-touch User mana Program d models.)	els (without FAX). address book: FAX-related data are not im dress book: Group addresses including FA nting data: Initial values are added for FA data: Groups assigned with FAX address agement data: Initial values are added for ata: Not imported. (The same applies who	iported. X address X-related oses or those out-going en data are	ses are not imported. data. se including FAX are not importe FAXes of authentication. e imported from 3 in 1 to 4 in 1	

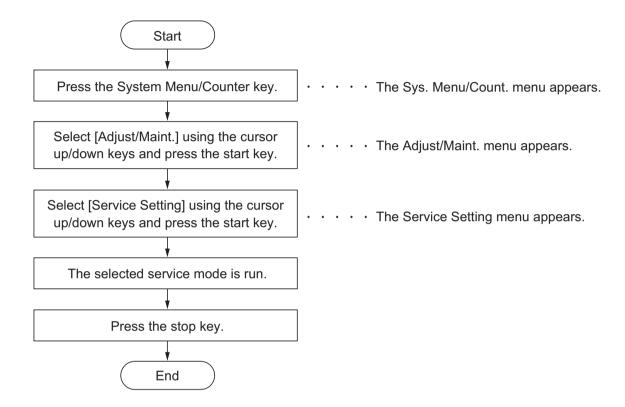
Item No.	Description				
U920	Checking the copy counts				
	Description Checks the copy counts. Purpose To check the copy counts.				
	Method 1. Press the start key.	The current counts are displayed.			
	Display	Description			
	Color Copy	Count value of color copy			
	B/W Copy	Count value of black/white copy			
	Color Prn	Count value of color print			
	B/W Prn	Count value of black/white print			
	B/W Fax	Count value of black/white FAX			
U927	Completion Press the stop key. The screen for selecting a maintenance item No. is displayed. Clearing the all copy counts and machine life counts (one time only)				
	ues are 1000 or less. Method 1. Press the start key. 2. Select [Execute] us 3. Press the start key. Completion	ter and the machine life counter can be cleared only once if all count val-			

Item No.		Description		
U928	Checking machine li	fe counts		
	Description Displays the machine life counts. Purpose To check the machine life counts. Method 1. Press the start key. The current machine life counts is displayed.			
	Display	Description		
	Life Cont	Machine life counts		
U977	Completion Press the stop key. The Data capture mode	ne screen for selecting a maintenance item No. is displayed.		
	Purpose In case to occur the en Method 1. Insert USB memonon 2. Turn the main pown 3. Enter the mainten 4. Press the start keyn 5. Select [Execute]. 6. Press the start keyn 7. Send the print date Once the print date Completion	ance item. y.		
U995	Completion			

1-3-2 Service mode

The machine is equipped with a maintenance function which can be used to maintain and service the machine.

(1) Executing a service mode



(2) Description of service mode

Service items	Description
Service Status	Printing a status page for service purpose
	Description Prints a status page for service purpose. The status page includes various settings and
	service cumulative. Purpose To acquire the current printing environmental parameters and cumulative information.
	Method 1. Enter the Service Setting menu.
	 Select [Service Status] using the cursor up/down keys. Press the start key. Press [Yes] (the Left Select key). Two pages will be printed.
	Completion Press the stop key.

rvice items	Description					
	Service status page (1)					
	Sorvico 9	Statue Dago				
	MEP	Status Page			(2) 06/04/20	10 12:00
	//۲			(3)	(4)	(5)
(1)	Firmware version 2	2KX_2000.000.000 2010.04.06		[XXXXXXX]	x] [xxxxxxxx] [xx	XXXXXX]
-						
	Controller Info	rmation				
	Memory status		(0.0)			
	7) Standard Size			PO Status		
	8) Option Slot	128.0 KB		er Top Margin	A1+A2/100	0.00
"	9) Total Size	256.0 KB	Use	er Left Margin	A3+A4/100	0.00
	Time					
(1	0) Local Time Zone	+01:00 Tokio				
(1	1) Date and Time	06/04/2010 12:00				
(1:	2) Time Server	10.183.53.13				
	Installed Option	ıs				
(1:	3) Paper feeder	Cassette				
	4) Card Authenticat	ion Kit (B) Installed				
	Print Coverage			•		
(1:		/ Usage Page(A4/Letter Conversion	1)	•		
	6) Total		•			
`	K: 1.10	/ 1111111.11				
	C: 2.20	/ 2222222.22		•		
	M: 3.30	/ 3333333.33		•		
	Y: 4.40	/ 4444444.44		•		
(1	7) Copy			•		
	K: 1.10	/ 1111111.11				
	C: 2.20	/ 2222222.22		•		
	M: 3.30	/ 3333333.33		••		
/4	Y: 4.40	/ 4444444.44		•		
(1)	8) Printer		PDI	F mode	Y5	00
	K: 1.10	/ 1111111.11	1 01	mode	10	00
	C: 2.20	/ 2222222.22				
	M: 3.30	/ 3333333.33				
/4	Y: 4.40	/ 4444444.44				
[(1)	9) FAX K: 1.10	/ 1111111 11				
/2	0) Period	/ 1111111.11 (27/10/2009 - 03/11/2009 08:40)				
		(27/10/2009 - 03/11/2009 08:40) (Y(%) 1.00 / 2.22 / 3.33 / 4.44				
(2	· , Last Fage N/C/IV	11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				
	FAV. 4					
	FAX Information					
	2) Rings (Normal)	3				
	3) Rings (FAX/TEL)					
	4) Rings (TAD) 5) Option DIMM Siz	3 te 16 MB				
(2	Option Dilvilvi Siz	.c IO IVID				
-						
		1			(6) [XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXX]
						•
_						
		Fiai	ıre 1-3-	-17		
		· '9'				

Service items	Description				
	Service status pag	e (2)			
	Service Stat	us Page	(06/04/2010 12:00	
	Firmware version 2KX_200	00.000.000 2010.04.06	[xxxxxxx] [xxxxxxx]	xx] [xxxxxxxx]	
-	ngine Information		Send Information		
(25)	Engine Information 7) NVRAM Version 8) Scanner Version 9) FAX FAX BOOT Version FAX APL Version FAX IPL Version 0) MAC Address 1) DP Counters Total	_1F31225_1F31225 2KX_1200.001.089 2KX_5000.001.001 2KX_5100.001.001 2KX_5200.001.001 00:C0:EE:D0:01:0D	(32) Date and Time (33) Address	10/04/06	
(33) (34) (44) (54) (55)	6) 0000000/0000000/000000000000000000000	70/abcde/1/0 (41) (42) (43) (0/0000/0000/0000/0000/0000/0000/0000/	00/0000/0000/0000/0000/0000/ 00/0000/0000/0000/0000/0000/ 78/012345678901234567890123456 78/012345678901234567890123456 78/012345678901234567890123456 78/012345678901234567890123456	578901/0008/00/07 578901/0008/00/07 578901/0008/00/07 578901/0008/00/07	
_		2	[xxxx	××××××××××××××××××××××××××××××××××××××	
		Figu	re 1-3-18		

Service items	Description			
	Detail of service status page			
No.	Description	Supplement		
(1)	Firmware version	-		
(2)	System date	-		
(3)	Engine soft version	-		
(4)	Engine boot version	-		
(5)	Operation panel mask version	-		
(6)	Machine serial number	-		
(7)	Standard memory size	-		
(8)	Optional memory size	-		
(9)	Total memory size	-		
(10)	Local time zone	-		
(11)	Report output date	Day/Month/Year hour:minute		
(12)	NTP server name	-		
(13)	Presence or absence of the optional paper feeder	Paper feeder 1/Paper feeder 2/Not Installed		
(14)	Presence or absence of the optional IC card authentication kit	Installed/Not Installed/Trial		
(15)	Page of relation to the A4/Letter	* :Print Coverage provides a close-matching reference of toner consumption and will not match with the actual toner consumption.		
(16)	Average coverage for total	Black/Cyan/Magenta/Yellow		
(17)	Average coverage for copy	Black/Cyan/Magenta/Yellow		
(18)	Average coverage for printer	Black/Cyan/Magenta/Yellow		
(19)	Average coverage for fax	Black/Cyan/Magenta/Yellow		
(20)	Cleared date and output date	-		
(21)	Coverage on the final output page	-		
(22)	Number of rings	0 to 15		
(23)	Number of rings before automatic switching	0 to 15		
(24)	Number of rings before connecting to answering machine	0 to 15		
(25)	Optional DIMM size	-		
(26)	FRPO setting	-		

rvice items	Description			
No.	Description	Supplement		
(27)	NV RAM version	_ 1F3 1225 _ 1F3 1225 (a) (b) (c) (d) (e) (f)		
		 (a) Consistency of the present software version and the database(underscore): OK * (Asterisk): NG (b) Database version (c) The oldest time stamp of database version (d) Consistency of the present software version and the ME firmware version(underscore): OK * (Asterisk): NG (e) ME firmware version (f) The oldest time stamp of the ME database version Normal if (a) and (d) are underscored, and (b) and (c) are identical with (c) and (f) 		
(28)	Scanner firmware version	(e) are identical with (c) and (f).		
(29)	Fax firmware version	-		
(30)	Mac address	-		
(31)	Number of original feed from DP	-		
(32)	The last sent date and time	-		
(33)	Transmission address	-		
(34)	Destination information	-		
(35)	Area information	-		
(36)	Margin settings	Top margin/Left margin		
(37)	Top offset for each paper source	MP tray/Paper feeder 1/Paper feeder 2/Duplex/ Page rotation		
(38)	Left offset for each paper source	MP tray/Paper feeder 1/Paper feeder 2/Duplex/ Page rotation		
(39)	Margin/Page length/Page width settings	Top margin integer part/Top margin decimal part/ Left margin integer part/Left margin decimal part/ Page length integer part/Page length decimal part Page width integer part/Page width decimal part		
(40)	Life counter (The first line)	Machine life/MP tray/Cassette/Paper feeder 1/ Paper feeder 2 /Duplex		
	Life counter (The second line)	Drum unit K/Drum unit C/Drum unit M/Drum unit N/Drum unit N/Developing unit K/Developing unit C/Developing unit M/Developing unit Y/Maintenance kit		

Service items		Description
No.	Description	Supplement
(41)	Panel lock information	0: OFF/1: Partial lock/2: Full lock
(42)	USB information	U00: Not installed/U01: Full speed/U02: Hi speed
(43)	Paper handling information	0: Paper source unit select/1: Paper source unit
(44)	Color printing double count mode	0: All single counts 3: Folio, Single count, Less than 330 mm (length)
(45)	Black and white printing double count mode	0: All single counts 3: Folio, Single count, Less than 330 mm (length)
(46)	Billing counting timing	-
(47)	Temperature (machine inside)	-
(48)	Temperature (machine outside)	-
(49)	Relative temperature (machine outside)	-
(50)	Absolute temperature (machine outside)	-
(51)	Fixed assets number	-
(52)	Job end judgment time-out time	-
(53)	Job end detection mode	-
(54)	Media type attributes 1 to 28 (Not used: 18, 19, 20)	Weight settings 0: Light 0: High 1: Normal 1 2: Normal 2 3: Normal 3 4: Heavy 1 5: Heavy 2 6: Heavy 3 7: Extra Heavy
(55)	Calibration information	Black/Cyan/Magenta/Yellow
(56)	RFID information	-
(57)	RFID reader/writer version information	-
(58)	Toner install mode information	0: Off t: On
(59)	Soft version of the optional paper feeder	Paper feeder 1/Paper feeder 2
(60)	Version of the optional message	-
(61)	Color table version	-
(62)	Maintenance information	-
		,

Service items		Description				
	No. (63)	Description Supplement Altitude 0: Standard				
	(64)	1: High altitude 1 2: High altitude 2 Charger roller correction 1 to 5				
	(65)	Drum serial number Black/Cyan/Magenta/Yellow				
		Code conversion				
		A B C D E F G H I J 0 1 2 3 4 5 6 7 8 9				
Network	Status	Printing a status page for network				
		Description Prints a status page for network. Purpose To acquire the detailed network setting information. Method 1. Enter the Service Setting menu. 2. Select [Network Status] using the cursor up/down keys. 3. Press the start key. 4. Press [Yes] (the Left Select key). Network status page will be printed. Completion Press the stop key.				

Service items	Description
Test Page	Printing a test page
	Description Four colors are printed respectively with halftones of three different levels. Purpose To check the activation of the developer and drum units of four colors. Method 1. Enter the Service Setting menu. 2. Select [Test Page] using the cursor up/down keys. 3. Press the start key. 4. Press [Yes] (the Left Select key). Test page will be printed.
	Density*2 — 16/256 — Black 32/256 — Cyan
	- Magenta - Green*1 (Yellow)
	 *1: Since focusing in yellow is hardly readable, yellow is mixed with cyan for more readability, resulting in green. *2: Each portion of colors has three different magnitude of halftones (bands). If focus is excessively lost, dots are not recognizable with the 16/256 band, resulting in uneven density. It also results in vertical streaks in the 24/256 and/or 32/256 bands. Figure 1-3-19
	Completion Press the stop key.

Description		
Entering initial value for replacing the developing unit		
Description After replacing the developing unit, enter the initial value (6-digit data) assigned on a label attached to the package or developing unit. Purpose To set the initial value after replacing the developing unit.		
Method 1. Enter the Service Setting menu. 2. Select [DeveloperSetting] using the cursor up/down keys. 3. Press the start key. Enter the initial value (6-digit data) using the numeric keys. 4. Press the start key. The initial value is set.		
4. Press the start key. The initial value is set. Developing unit Package Figure 1-3-20 Completion Press the stop key.		

Service items	Description		
Developer	Performing developer refresh		
Refresh			
	Description The least output of the image data for developer refreshing is corried out, and energies		
	The laser output of the image data for developer refreshing is carried out, and operation to exposure, developing, and primary transfer is performed by 10 pages (paper is not		
	fed).		
	Purpose		
	To perform cleaning when faulty images occur and a line appears longitudinally.		
	Method		
	Enter the Service Setting menu.		
	Select [DeveloperRefresh] using the cursor up/down keys. Brees the start key.		
	3. Press the start key.4. Press [Yes] (the Left Select key). Developer refresh is performed.		
	4. I ress [res] (the Left select key). Developer refresh to performed.		
	A4 paper size		
	33 mm		
	<u> </u>		
	200 mm		
	Toner image on the transfer belt		
	Figure 1-3-21		
	Completion		
	Press the stop key.		

Service items	Description
Laser Scanner	Performing LSU cleaning
Cleaning	
	Description The LSU descript meter drives the cleaning and which in turn wines clean the LSU dust
	The LSU cleaning motor drives the cleaning pad which in turn wipes clean the LSU dust shield glass.
	Purpose
	To perform cleaning when the printed image is bad and stripes are seen in the vertical
	direction.
	Method
	Enter the Service Setting menu.
	Select [LaserScanner Cln] using the cursor up/down keys.
	3. Press the start key.
	Press [Yes] (the Left Select key). LSU cleaning is performed.
	Completion
	Press the stop key.
Drum surface refreshing	Performing drum surface refreshing
	Description
	Rotates the drum approximately 2 minutes with toner lightly on the overall drum. The cleaning blade in the drum unit scrapes toner off the drum surface to clean it.
	Purpose
	To clean the drum surface when image failure occurs due to the drum. This mode is
	effective when dew condensation on the drum occurs.
	Method
	Enter the Service Setting menu.
	Select [Drum Refresh] using the cursor up/down keys.
	3. Press the start key.
	Press [Yes] (the Left Select key). Drum surface refreshing is performed.
	Completion
	Press the stop key.

Service items	Description
Altitude	Setting altitude adjustment
adjustment	
	Description Sate the altitude adjustment mode
	Sets the altitude adjustment mode. Purpose
	Used when print quality deteriorates in an installation at the altitude of 1,500 meters or
	higher.
	Method
	Enter the Service Setting menu.
	Select [Altitude Adj.] using the cursor up/down keys.
	3. Press the start key.
	4. Select [Normal], [High 1] or [High 2)] using the cursor up/down keys. 5. Press the start key. The setting is set.
	Completion
	Press the stop key.
Main charger adjustment	Setting main charger output
	Description
	Sets the main charger output.
	This is executable only when the altitude adjustment mode is set to [Normal].
	Purpose Execute when the image density declines or an offset has occurred.
	Execute when the image density declines of an onset has occurred.
	Method
	Enter the Service Setting menu.
	Select [MC] using the cursor up/down keys.
	3. Press the start key.
	4. Select [1], [2] or [3] using the cursor up/down keys.
	5. Press the start key. The setting is set.
	Completion
	Press the stop key.

Service items	Description					
FAX country	FAX Country Code					
code	Description Initializes software switches and all data in the backup data on the FAX control according to the destination. Purpose To initialize the FAX control PWB. Method 1. Enter the Service Setting menu. 2. Select [FAX Country Code] using the cursor up/down keys. 3. Press the start key. 4. Enter a destination code using the numeric keys. 5. Press the start key. The setting is set. 6. Press the start key. Data initialization starts.					
		Destination code list				
	Code	Destination	Code	Destination		
	000	Japan	253	CTR21 (European nations)		
	009	Australia		Italy		
	038	China		Germany		
	080	Hong Kong		Spain		
	084	Indonesia		U.K.		
	088	Israel		Netherlands		
	097	Korea		Sweden		
	108	Malaysia		France		
	126	New Zealand		Austria		
	136	Peru		Switzerland		
	137	Philippines		Belgium		
	152	Middle East		Denmark		
	156	Singapore		Finland		
	159	South Africa		Portugal		
	169	Thailand		Ireland		
	181	U.S.A.		Norway		
	242	South America	254	Taiwan		
	243	Saudi Arabia				
	Completion Press the stop I	key.				

Service items			Description
FAX call Setting	FAX call setting		
	Description Selects if a fax is to be connected to either a PBX or public switched telephone network. Selects the mode to connect an outside call when connected to a PBX. Access code registration for connection to PSTN. Purpose To be executed as required. Method 1. Enter the Service Setting menu. 2. Select [FAX Call Set.] using the cursor up/down keys. 3. Press the start key.		
		Display	Description
		Exchange Select.	Setting the connection to PBX/PSTN
		PBX Setting	Setting for a PBX
		Dial No. to PSTN	Setting access code to PSTN
	2. 3. 4. Sett 1. 2. 3. 4. Sett 1. 2. 3. 4. Cor	Setting the connection to PBX/PSTN 1. Select [Exchange Select.] using the cursor up/down keys. 2. Press the start key. 3. Select [PBX] or [PSTN] using the cursor up/down keys. 4. Press the start key. The setting is set. Setting for PBX 1. Select [PBX Setting] using the cursor up/down keys. 2. Press the start key. 3. Select [Loop], [Flash] or [Earth] using the cursor up/down keys. 4. Press the start key. The setting is set. Setting access code to PSTN 1. Select [Dial No. to PSTN] using the cursor up/down keys. 2. Press the start key. 3. Enter access code using the numeric keys. (0 to 9, 00 to 99) 4. Press the start key. The setting is set. Completion Press the stop key.	

Service items	Description
Remote	Setting remote diagnostics
diagnostics	
	Description Sets the remote diagnostics.
	Purpose
	Used to establish communication between the machine and the service facility when a
	problem is encounted.
	Method
	Enter the Service Setting menu. Select [Demote Dieg Set] using the cureer up/dewn keys.
	2. Select [Remote Diag.Set.] using the cursor up/down keys.3. Press the start key.
	4. Select [On] using the cursor up/down keys.
	5. Press the start key. The setting is set.
	6. Select [Remote Diag. ID] using the cursor up/down keys.
	7. Press the start key.8. Enter the prespecified remote diagnostics ID number (0000 to 9999) using the
	numeric keys.
	9. Press the start key. The setting is set.
	Completion
	Press the stop key.

1-4-1 Paper misfeed detection

(1) Paper misfeed indication

When a paper misfeed occurs, the machine immediately stops printing and displays the paper misfeed message on the operation panel. To remove paper misfed in the machine, pull out the cassette, open the rear cover or paper conveying unit.



Figure 1-4-1 Paper misfeed indication

(2) Paper misfeed detection condition

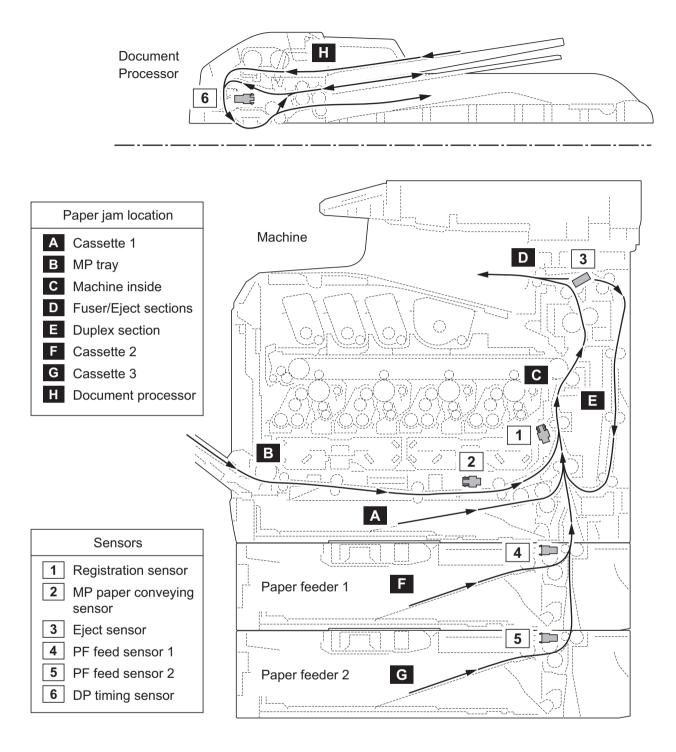


Figure 1-4-2 Paper jam location

Code	Contents	Conditions	Jam location*
0100	Controller sequence error	Secondary paper feed request given by the controller is unreachable.	С
0105	Registration sensor not detected	Activation of the registration sensor (on/off) is undetected for 90 s during printing.	-
0106	Controller sequence error	Paper feeding request for duplex printing given by the controller is unreachable.	Е
0110	Top tray open	The top tray is opened during printing.	-
0111	Rear cover open	The rear cover is opened during printing.	-
0112	Front cover open	The waste toner cover is opened during printing.	-
0120	Controller sequence error	Paper feed request was received from the duplex section despite the absence of paper in the duplex section.	E
0121	Controller sequence error	The controller issued the duplex section a request for more pages than the duplex print cycle contains.	E
0211	Rear cover open (paper feeder 1)	The rear cover of paper feeder 1 is opened during printing.	-
0212	Rear cover open (paper feeder 2)	The rear cover of paper feeder 2 is opened during printing.	-
0501	No paper feed from cassette 1	The registration sensor (RS) does not turn on during paper feed from cassette.	Α
0502	No paper feed from cassette 2	PF feed sensor 1 (PFFS1) does not turn on during paper feed from paper feeder 1.	F
0503	No paper feed from cassette 3	PF feed sensor 2 (PFFS2) does not turn on during paper feed from paper feeder 2.	G
0508	No paper feed from duplex section	The registration sensor (RS) does not turn on during paper feed from duplex section.	E
0509	No paper feed from MP tray	MP paper conveying sensor (MPPCS) does not turn on during paper feed from MP tray.	В
0511	Multiple sheets in cassette 1	The registration sensor (RS) does not turn off during paper feed from cassette.	Α
0512	Multiple sheets in cassette 2		
0513	Multiple sheets in cassette 3	3 PF feed sensor 2 (PFFS2) does not turn off during paper feed from paper feeder 2.	
0518	Multiple sheets in duplex section	The registration sensor (RS) does not turn off during paper feed from duplex section.	
0519	Multiple sheets in MP tray	MP paper conveying sensor (MPPCS) does not turn off during paper feed from MP tray.	В

^{*:} Refer to figure 1-4-2 for paper jam location (see page 1-4-2).

Code	Contents	Conditions	Jam location*
1020	MP feed sensor remaining jam	MP feed sensor (MPFS) is turned on when the power is turned on.	В
1403	PF feed sensor 1 non arrival jam	PF feed sensor 1 (PFFS1) does not turn on during paper feed from paper feeder 2.	F
1413	PF feed sensor 1 stay jam	PF feed sensor 1 (PFFS1) does not turn off during paper feed from paper feeder 2.	F
1420	PF feed sensor 1 remaining jam	PF feed sensor 1 (PFFS1) is turned on when the power is turned on.	F
1620	PF feed sensor 2 remaining jam	PF feed sensor 2 (PFFS2) is turned on when the power is turned on.	G
4002	Registration sensor non arrival jam	The registration sensor (RS) does not turn on during paper feed from paper feeder 1.	Α
4003	-	The registration sensor (RS) does not turn on during paper feed from paper feeder 2.	Α
4009	-	The registration sensor (RS) does not turn on during paper feed from MP tray.	Α
4012	Registration sensor stay jam	The registration sensor (RS) does not turn off during paper feed from paper feeder 1.	С
4013		The registration sensor (RS) does not turn off during paper feed from paper feeder 2.	С
4019		The registration sensor (RS) does not turn off during paper feed from MP tray.	С
4020	Registration sensor remaining jam The registration sensor (RS) is turned on when the power is turned on.		С
4201	Eject sensor non arrival jam	The eject sensor (ES) does not turn on during paper feed from cassette.	С
4202		The eject sensor (ES) does not turn on during paper feed from paper feeder 1.	С
4203		The eject sensor (ES) does not turn on during paper feed from paper feeder 2.	С
4208		The eject sensor (ES) does not turn on during paper feed from duplex section.	С
4209		The eject sensor (ES) does not turn on during paper feed from MP tray.	С

^{*:} Refer to figure 1-4-2 for paper jam location (see page 1-4-2).

Code	Contents	Conditions	Jam location*
4211	Eject sensor stay jam	The eject sensor (ES) does not turn off during paper feed from cassette.	D
4212		The eject sensor (ES) does not turn off during paper feed from paper feeder 1.	D
4213		The eject sensor (ES) does not turn off during paper feed from paper feeder 2.	D
4218		The eject sensor (ES) does not turn off during paper feed from duplex section.	О
4219		The eject sensor (ES) does not turn off during paper feed from MP tray.	D
4220	Eject sensor remaining jam	The eject sensor (ES) is turned on when the power is turned on.	D
9000	No original feed	The DP timing sensor (DPTS) does not turn on within specified time during the first sheet feeding (Retry 5 times).	Н
9001	An original jam in the original conveying section	DP timing sensor (DPTS) turns off within the specified time since the sensor turns on.	Н
9003	An original jam in the original switchback section 1	During duplex switchback scanning, the DP timing sensor (DPTS) does not turn off within specified time.	Н
9004	An original jam in the original switchback section 2	During duplex switchback scanning, the DP timing sensor (DPTS) does not turn on within specified time since original switchback operation starts.	Н
9011	DP top cover open	The DP or DP top cover is opened during original feeding.	Н
9401	An original jam in the original conveying section	The DP timing sensor (DPTS) does not turn off within specified time of the DP timing sensor (DPTS) turning on.	H

^{*:} Refer to figure 1-4-2 for paper jam location (see page 1-4-2).

1-4-2 Self-diagnostic function

(1) Self-diagnostic function

This machine is equipped with self-diagnostic function. When a problem is detected, the machine stops printing and display an error message on the operation panel. An error message consists of a message prompting a contact to service personnel and a four-digit error code indicating the type of the error.

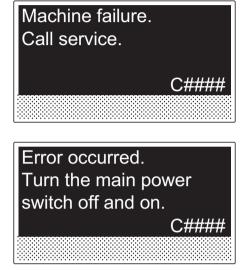


Figure 1-4-3

(2) Self diagnostic codes

If the part causing the problem was not supplied, use the unit including the part for replacement.

Code	Contents	Causes	Check procedures/ corrective measures
0030	FAX control PWB system error Processing with the fax software was disabled due to a hardware problem.	Defective FAX control PWB.	Replace the fax control PWB and check for correct operation. (see page 1-5-36).
0070	FAX control PWB incompatible detection error Abnormal detection of FAX control PWB incompatibility In the initial communication with the FAX control PWB, any normal communication command is not transmitted.	Defective FAX soft- ware.	Install the fax software.
		Defective FAX control PWB.	Replace the fax control PWB and check for correct operation. (see page 1-5-36).
0100	Backup memory device error	Defective flash memory.	Replace the main PWB and check for correct operation (see page 1-5-30).
		Defective main PWB.	Replace the main PWB and check for correct operation (see page 1-5-30).
0120	MAC address data error For data in which the MAC address is invalid.	Defective flash memory.	Replace the main PWB and check for correct operation (see page 1-5-30).
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-27).
0130	Backup memory read/write error (main PWB)	Defective flash memory.	Replace the main PWB and check for correct operation (see page 1-5-30).
		Defective main PWB.	Replace the main PWB and check for correct operation (see page 1-5-30).
0140	Backup memory data error (main PWB)	Defective flash memory.	Replace the main PWB and check for correct operation (see page 1-5-30).
		Defective main PWB.	Replace the main PWB and check for correct operation (see page 1-5-30).
0150	Engine PWB EEPROM error Detecting engine PWB EEPROM communication	Improper installation engine PWB EEPROM.	Check the installation of the EEPROM and remedy if necessary.
	error.	Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-27).
		Device damage of EEPROM.	Contact the Service Administrative Division.
0170	O170 Billing counting error A checksum error is detected in the main and engine backup memories for the billing counters.	Data damage of EEPROM.	Contact the Service Administrative Division.
		Defective PWB.	Replace the main PWB or the engine PWB and check for correct operation (see page 1-5-30, 1-5-27).

Code	Contents	Causes	Check procedures/ corrective measures
0180	Machine number mismatch Machine number of main and engine does not match.	Data damage of EEPROM.	Contact the Service Administrative Division.
0600	Expanded memory (DIMM) installing error The expansion memory modules (DIMM) are not correctly mounted.	Improper installation expanded memory (DIMM).	Check the installation of the expanded memory (DIMM).
0610	Expanded memory (DIMM) error The expansion memory mod-	Defective expanded memory (DIMM).	Replace the expanded memory (DIMM) and check for correct operation (see page 1-2-12).
	ules (DIMM) mounted on the main PWB does not operate correctly.	Defective main PWB.	Replace the main PWB and check for correct operation (see page 1-5-30).
0640	Hard disk error The hard disk cannot be accessed.	Defective hard disk.	Replace the hard disk and check for correct operation.
		Defective main PWB.	Replace the main PWB and check for correct operation (see page 1-5-30).
0830	FAX control PWB flash program area checksum error	Defective FAX soft- ware.	Install the fax software.
	A checksum error occurred with the program of the FAX control PWB.	Defective FAX control PWB.	Replace the FAX control PWB (see page 1-5-36).
0840	Faults of RTC The time is judged to go back based on the comparison of	The battery is disconnected from the main PWB.	Check visually and remedy if necessary
	ne RTC time and the current me or five years or more ave passed.	Defective main PWB.	Replace the main PWB and check for correct operation (see page 1-5-30).
0870	FAX control PWB to main PWB high capacity data transfer error High-capacity data transfer between the FAX control PWB and the main PWB of the machine was not normally performed even if the data transfer was retried the speci- fied times.	Improper installation FAX control PWB.	Reinstall the FAX control PWB (see page 1-5-36).
		Defective FAX control PWB or main PWB.	Replace the FAX control PWB or main PWB and check for correct operation (see page 1-5-36 or 1-5-30).
0920	Fax file system error The backup data is not retained for file system abnormality of flash memory of the FAX control PWB.	Defective FAX control PWB.	Replace the FAX control PWB and check for correct operation (see page 1-5-36).

Code	Contents	Causes	Check procedures/ corrective measures
0930	EEPROM bus error	Defective drum PWB (EEPROM).	Replace the drum unit (see page 1-5-21).
		Defective engine PWB (EEPROM).	Replace the engine PWB and check for correct operation (see page 1-5-27).
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-27).
		Defective main PWB.	Replace the main PWB and check for correct operation (see page 1-5-30).
1010	Lift motor error When the lift motor is driven, the motor over-current detec- tion signal is detected continu-	Defective bottom plate elevation mechanism in the cassette.	Check to see if the bottom plate can move smoothly and repair it if any problem is found.
	ously for 50 times (5 s) at 100 ms intervals. After the lift motor is driven, the ON status of lift sensor cannot be detected for 8 s. The cassette installed confirmation message is displayed on the operation panel, and even if the cassette is opened and closed, the cassette	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable.
		Defective drive transmission system of the lift motor.	Lift motor and engine PWB (YC27) Check if the gears rotate smoothly. If not, grease the bushes and gears. Check for broken gears and replace if any.
	installed confirmation mes-	Defective lift motor.	Replace the lift motor
	sage is displayed 5 times successively.	Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-27).
1020	PF lift motor error (paper feeder 1) When the lift motor is driven, the motor over-current detec-	Defective bottom plate elevation mechanism in the cassette.	Check to see if the bottom plate can move smoothly and repair it if any problem is found.
	tion signal is detected continuously for 50 times (5 s) at 100 ms intervals. After the lift motor is driven, the ON status of lift sensor cannot be detected for 8 s. The cassette installed confirmation message is displayed on the operation panel, and even if the cassette is opened and closed, the cassette installed confirmation message is displayed 5 times successively.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. PF lift motor and PF main PWB (YC7)
		Defective drive transmission system of the PF lift motor.	Check if the gears rotate smoothly. If not, grease the bushes and gears. Check for broken gears and replace if any.
		Defective PF lift motor.	Replace the PF lift motor
		Defective PF main PWB.	Replace the PF main PWB (Refer to the service manual for the paper feeder).

Code	Contents	Causes	Check procedures/ corrective measures
1030	PF lift motor error (paper feeder 2) When the lift motor is driven, the motor over-current detection signal is detected continuously for 50 times (5 s) at 100 ms intervals. After the lift motor is driven, the ON status of lift sensor cannot be detected for 8 s. The cassette installed confirmation message is displayed on the operation panel, and	Defective bottom plate elevation mechanism in the cassette.	Check to see if the bottom plate can move smoothly and repair it if any problem is found.
		Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. PF lift motor and PF main PWB (YC7)
		Defective drive transmission system of the PF lift motor.	Check if the gears rotate smoothly. If not, grease the bushes and gears. Check for broken gears and replace if any.
	even if the cassette is opened and closed, the cassette	Defective PF lift motor.	Replace the PF lift motor
	installed confirmation mes- sage is displayed 5 times suc- cessively.	Defective PF main PWB.	Replace the PF main PWB (Refer to the service manual for the paper feeder).
1500	PF heater 1 high temperature error (paper feeder 1) A temperature higher than 75°C/167°F is detected.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. PF fan motor 1 and PF main PWB (YC111)
		Shorted PF thermistor 1.	Replace the top heater unit (Refer to the service manual for the paper feeder).
		Defective PF fan motor 1.	Replace the top heater unit (Refer to the service manual for the paper feeder).
		Defective PF main PWB.	Replace the PF main PWB (Refer to the service manual for the paper feeder).
1510	PF heater 2 high temperature error (paper feeder 1) A temperature higher than	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. PF fan motor 2 and PF main PWB (YC111)
	75°C/167°F is detected.	Shorted PF thermistor 2.	Replace the side heater unit (Refer to the service manual for the paper feeder).
		Defective PF fan motor 2.	Replace the side heater unit (Refer to the service manual for the paper feeder).
		Defective PF main PWB.	Replace the PF main PWB (Refer to the service manual for the paper feeder).

Code	Contents	Causes	Check procedures/ corrective measures
1520	PF heater 1 high temperature error (paper feeder 2) A temperature higher than 75°C/167°F is detected.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. PF fan motor 1 and PF main PWB (YC111)
		Shorted PF thermistor 1.	Replace the top heater unit (Refer to the service manual for the paper feeder).
		Defective PF fan motor 1.	Replace the top heater unit (Refer to the service manual for the paper feeder).
		Defective PF main PWB.	Replace the PF main PWB (Refer to the service manual for the paper feeder).
1530	PF heater 2 high temperature error (paper feeder 2) A temperature higher than	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. PF fan motor 2 and PF main PWB (YC111)
	75°C/167°F is detected.	Shorted PF thermistor 2.	Replace the side heater unit (Refer to the service manual for the paper feeder).
		Defective PF fan motor 2.	Replace the side heater unit (Refer to the service manual for the paper feeder).
		Defective PF main PWB.	Replace the PF main PWB (Refer to the service manual for the paper feeder).
1600	PF heater 1 low temperature error (paper feeder 1) An external temperature higher than + 5°C/+ 9°F is not detected when one minute elapses after PF heater 1 is turned on.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. PF heater 1 and PF heater PWB (YC1) PF heater PWB (YC3) and PF main PWB (YC113) PF thermistor 1 and PF main PWB (YC114)
		PF thermistor 1 installed incorrectly.	Check the installation of the PF thermistor 1.
		Defective PF thermistor 1.	Replace the top heater unit (Refer to the service manual for the paper feeder).
		Broken PF heater 1.	Replace the top heater unit (Refer to the service manual for the paper feeder).
		Defective PF heater PWB or PF main PWB.	Replace the PF heater PWB or PF main PWB (Refer to the service manual for the paper feeder).

Code	Contents	Causes	Check procedures/ corrective measures
1610	PF heater 2 low temperature error (paper feeder 1) An external temperature higher than + 5°C/+ 9°F is not detected when one minute elapses after PF heater 2 is turned on.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. PF heater 2 and PF heater PWB (YC2) PF heater PWB (YC3) and PF main PWB (YC113) PF thermistor 2 and PF main PWB (YC115)
		PF thermistor 2 installed incorrectly.	Check the installation of the PF thermistor 2.
		Defective PF thermistor 2.	Replace the side heater unit (Refer to the service manual for the paper feeder).
		Broken PF heater 2.	Replace the side heater unit (Refer to the service manual for the paper feeder).
		Defective PF heater PWB or PF main PWB.	Replace the PF heater PWB or PF main PWB (Refer to the service manual for the paper feeder).
1620	PF heater 1 low temperature error (paper feeder 2) An external temperature higher than + 5°C/+ 9°F is not detected when one minute elapses after PF heater 1 is turned on.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. PF heater 1 and PF heater PWB (YC1) PF heater PWB (YC3) and PF main PWB (YC113) PF thermistor 1 and PF main PWB (YC114)
		PF thermistor 1 installed incorrectly.	Check the installation of the PF thermistor 1.
		Defective PF thermistor 1.	Replace the top heater unit (Refer to the service manual for the paper feeder).
		Broken PF heater 1.	Replace the top heater unit (Refer to the service manual for the paper feeder).
		Defective PF heater PWB or PF main PWB.	Replace the PF heater PWB or PF main PWB (Refer to the service manual for the paper feeder).

Code	Contents	Causes	Check procedures/ corrective measures
1630	PF heater 2 low temperature error (paper feeder 2) An external temperature higher than + 5°C/+ 9°F is not detected when one minute elapses after PF heater 2 is turned on.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. PF heater 2 and PF heater PWB (YC2) PF heater PWB (YC3) and PF main PWB (YC113) PF thermistor 2 and PF main PWB (YC115)
		PF thermistor 2 installed incorrectly.	Check the installation of the PF thermistor 2.
		Defective PF thermistor 2.	Replace the side heater unit (Refer to the service manual for the paper feeder).
		Broken PF heater 2.	Replace the side heater unit (Refer to the service manual for the paper feeder).
		Defective PF heater PWB or PF main PWB.	Replace the PF heater PWB or PF main PWB (Refer to the service manual for the paper feeder).
1800	Paper feeder communication error Communication error between engine PWB and optional paper feeder.	Improper installation paper feeder.	Follow installation instruction carefully again.
		Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. PF main PWB (YC3) and engine PWB (YC33)
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-27).
		Defective PF main PWB.	Replace the PF main PWB (Refer to the service manual for the paper feeder).
2100	Developing motor error The developing motor ready input is not given for 5 s during the main motor is ON.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Developing motor and engine PWB (YC14)
		Defective drive transmission system of the developing motor.	Check if the rollers and gears rotate smoothly. If not, grease the bushes and gears. Check for broken gears and replace if any.
		Defective develop- ing motor.	Replace the developing motor.
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-27).

Code	Contents	Causes	Check procedures/ corrective measures
2200	Drum motor error The drum motor ready input is not given for 5 s during the drum motor is ON.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Drum motor and engine PWB (YC13)
		Defective drive transmission system of the drum motor.	Check if the rollers and gears rotate smoothly. If not, grease the bushes and gears. Check for broken gears and replace if any.
		Defective drum motor.	Replace the drum motor.
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-27).
2330	When the fuser pressure release motor error When the fuser pressure release motor is driven, the motor over-current detection signal is detected continuously for 8 times (800 ms) at 100 ms intervals.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Fuser pressure release motor and engine PWB (YC38)
		Defective drive transmission sys- tem of the fuser pressure release motor.	Check if the rollers and gears rotate smoothly. If not, grease the bushes and gears. Check for broken gears and replace if any.
		Defective fuser pressure release motor.	Replace the fuser pressure release motor.
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-27).
2340	Fuser pressure release motor time-out error When the fuser pressure release motor is driven, the envelope switch (EVSW) is not detectable for 6 s.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Fuser pressure release motor and engine PWB (YC38)
		Defective drive transmission sys- tem of the fuser pressure release motor.	Check if the rollers and gears rotate smoothly. If not, grease the bushes and gears. Check for broken gears and replace if any.
		Defective fuser pressure release motor.	Replace the fuser pressure release motor.
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-27).

Code	Contents	Causes	Check procedures/ corrective measures
2500	Paper feed motor error The drum motor ready input is not given for 5 s during the paper feed motor is ON.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Paper feed motor and engine PWB (YC3)
		Defective drive transmission system of the paper feed motor.	Check if the rollers and gears rotate smoothly. If not, grease the bushes and gears. Check for broken gears and replace if any.
		Defective paper feed motor.	Replace the paper feed motor.
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-27).
2600	PF paper feed motor error (paper feeder 1) The drum motor ready input is not given for 2 s during the PF paper feed motor is ON.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. PF paper feed motor and PF main PWB (YC6)
		Defective drive transmission system of the PF paper feed motor.	Check if the rollers and gears rotate smoothly. If not, grease the bushes and gears. Check for broken gears and replace if any.
		Defective PF paper feed motor.	Replace the PF paper feed motor.
		Defective PF main PWB.	Replace the PF main PWB (Refer to the service manual for the paper feeder).
2610	PF paper feed motor error (paper feeder 2) The drum motor ready input is not given for 2 s during the PF paper feed motor is ON.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. PF paper feed motor and PF main PWB (YC6)
		Defective drive transmission system of the PF paper feed motor.	Check if the rollers and gears rotate smoothly. If not, grease the bushes and gears. Check for broken gears and replace if any.
		Defective PF paper feed motor.	Replace the PF paper feed motor.
		Defective PF main PWB.	Replace the PF main PWB (Refer to the service manual for the paper feeder).

Code	Contents	Causes	Check procedures/ corrective measures
2730	Developing release motor error When the developing release motor is driven, the motor over-current detection signal is detected continuously for 8 times (800 ms) at 100 ms intervals.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Developing release motor and engine PWB (YC35)
		Defective drive transmission system of the developing release motor.	Check if the rollers and gears rotate smoothly. If not, grease the bushes and gears. Check for broken gears and replace if any.
		Defective developing release motor.	Replace the developing release motor.
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-27).
2740	Developing release motor time-out error When the developing release motor is driven, the develop- ing release switch (DEVRSW)	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Developing release motor and engine PWB (YC35)
	is not detectable for 1 s.	Defective drive transmission sys- tem of the develop- ing release motor.	Check if the rollers and gears rotate smoothly. If not, grease the bushes and gears. Check for broken gears and replace if any.
		Defective developing release motor.	Replace the developing release motor.
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-27).
2820	Fuser motor error The fuser motor ready input is not given for 5 s during the fuser motor is ON.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Fuser motor and engine PWB (YC15)
		Defective drive transmission system of the fuser motor.	Check if the rollers and gears rotate smoothly. If not, grease the bushes and gears. Check for broken gears and replace if any.
		Defective fuser motor.	Replace the fuser motor.
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-27).

Code	Contents	Causes	Check procedures/ corrective measures
3100	ISU home position error The home position is not correct when the power is turned on or at the start of copying using the table.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Home position sensor and CCD PWB (YC3) CCD PWB (YC1) and main PWB (YC8) ISU motor and main PWB (YC36)
		Defective home position sensor.	Replace the home position sensor.
		Defective ISU motor.	Replace the ISU motor.
		Defective CCD PWB.	Replace the scanner unit (see page 1-5-48).
		Defective main PWB.	Replace the main PWB and check for correct operation (see page 1-5-30).
3200	Exposure lamp error The exposure lamp does not turn on when power is on. The lamp's lumosity does not stabilize in one minute after power is on. Error is detected while processing lamp feedback in standby.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Exposure lamp and inverter PWB (CN2) Inverter PWB (CN1) and CCD PWB (YC3) CCD PWB (YC1) and main PWB (YC8)
		Defective exposure lamp.	Replace the scanner unit (see page 1-5-48).
		Defective inverter PWB or CCD PWB.	Replace the scanner unit (see page 1-5-48).
		Defective main PWB.	Replace the main PWB and check for correct operation (see page 1-5-30).

Code	Contents	Causes	Check procedures/ corrective measures
3500	Communication error between scanner and ASIC An error code is detected.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. CCD PWB (YC1) and main PWB (YC8)
		Defective CCD PWB.	Replace the scanner unit (see page 1-5-48).
		Defective main PWB.	Replace the main PWB and check for correct operation (see page 1-5-30).
4001	Polygon motor KM error The polygon motor KM ready input is not given for 10 s dur- ing the polygon motor is ON.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Laser scanner unit KM and engine PWB (YC31)
		Defective polygon motor KM.	Replace the laser scanner unit KM (see page 1-5-45).
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-27).
4002	Polygon motor CY error The polygon motor CY ready input is not given for 10 s dur- ing the polygon motor is ON.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Laser scanner unit CY and engine PWB (YC31)
		Defective polygon motor CY.	Replace the laser scanner unit CY (see page 1-5-45).
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-27).
4201	Laser output error (black) The pin photo signal is not output from PD PWB K for one second while laser is emitted.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. APC PWB K and engine PWB (YC31)
		Defective APC PWB K.	Replace the laser scanner unit KM (see page 1-5-45).
		Defective PD PWB K.	Replace the laser scanner unit KM (see page 1-5-45).
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-27).

Code	Contents	Causes	Check procedures/ corrective measures
4202	Laser output error (cyan) The pin photo signal is not output from PD PWB C for one second while laser is	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. APC PWB C and engine PWB (YC32)
	emitted.	Defective APC PWB C.	Replace the laser scanner unit CY (see page 1-5-45).
		Defective PD PWB C.	Replace the laser scanner unit CY (see page 1-5-45).
		Defective engine PWB.	Replace the engine PWB (see page 1-5-27).
4203	Laser output error (magenta) The pin photo signal is not output from PD PWB M for	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. APC PWB M and engine PWB (YC31)
	one second while laser is emitted.	Defective APC PWB M.	Replace the laser scanner unit KM (see page 1-5-45).
		Defective PD PWB M.	Replace the laser scanner unit KM (see page 1-5-45).
		Defective engine PWB.	Replace the engine PWB (see page 1-5-27).
4204	Laser output error (yellow) The pin photo signal is not output from PD PWB Y for one second while laser is emitted.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. APC PWB Y and engine PWB (YC32)
		Defective APC PWB Y.	Replace the laser scanner unit CY (see page 1-5-45).
		Defective PD PWB Y.	Replace the laser scanner unit CY (see page 1-5-45).
		Defective engine PWB.	Replace the engine PWB (see page 1-5-27).
4600	LSU cleaning motor error When the LSU cleaning motor is driven, the motor over-cur- rent detection signal is detected continuously for 50 times (5 s) at 100 ms inter- vals.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. LSU cleaning motor and engine PWB (YC36)
		Defective drive transmission system of the LSU cleaning motor.	Check if the rollers and gears rotate smoothly. If not, grease the bushes and gears. Check for broken gears and replace if any.
		Defective LSU cleaning motor.	Replace the LSU cleaning motor.
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-27).

Code	Contents	Causes	Check procedures/ corrective measures
4700	VIDEO ASIC device error	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Main PWB (YC39) and relay PWB (YC3) Relay PWB (YC2, 4) and engine PWB (YC8, 9)
		Defective main PWB or engine PWB.	Replace the main PWB or the engine PWB and check for correct operation (see page 1-5-30, 1-5-27).
5301	Broken cleaning lamp K wire When the cleaning lamp K is driven, the lamp over-current detection signal is detected continuously for 10 times (1 s)	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Drum unit K and Drum relay PWB (YC2) Drum relay PWB (YC1) and engine PWB (YC34)
	at 100 ms intervals.	Defective cleaning lamp K.	Replace the drum unit K. (see page 1-5-21).
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-27).
5302	Broken cleaning lamp C wire When the cleaning lamp C is driven, the lamp over-current detection signal is detected continuously for 10 times (1 s) at 100 ms intervals.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Drum unit C and Drum relay PWB (YC4) Drum relay PWB (YC1) and engine PWB (YC34)
		Defective cleaning lamp C.	Replace the drum unit C. (see page 1-5-21).
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-27).
5303	Broken cleaning lamp M wire When the cleaning lamp M is driven, the lamp over-current detection signal is detected continuously for 10 times (1 s) at 100 ms intervals.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Drum unit M and Drum relay PWB (YC3) Drum relay PWB (YC1) and engine PWB (YC34)
		Defective cleaning lamp M.	Replace the drum unit M. (see page 1-5-21).
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-27).

Code	Contents	Causes	Check procedures/ corrective measures
5304	Broken cleaning lamp Y wire When the cleaning lamp Y is driven, the lamp over-current detection signal is detected continuously for 10 times (1 s)	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Drum unit Y and Drum relay PWB (YC5) Drum relay PWB (YC1) and engine PWB (YC34)
	at 100 ms intervals.	Defective cleaning lamp Y.	Replace the drum unit Y. (see page 1-5-21).
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-27).
6000	Do Broken fuser heater wire The detected temperature of fuser thermistor does not rise 1°C/1.8°F after the fuser heater has been turned on continuously for 10 s in warming up.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Fuser heater and power source PWB (YC102) Fuser unit and eject PWB (YC3) Eject PWB (YC1) and engine PWB (YC19)
	The fuser temperature does not reach 100°C/212°F after the fuser heater has been	Deformed connector pin.	See page 1-4-22.
	turned on continuously for	Defective triac.	See page 1-4-22.
	30 s in warming up. The detected temperature of fuser thermistor does not reach the specified temperature (ready indication temperature) after the fuser heater has been turned on continuously for 60 s in warming up. The detected temperature of fuser thermistor does not rise 1°C/1.8°F after the fuser heater has been turned on continuously for 10 s during printing.	Fuser thermostat triggered.	Reinsert the fuser unit (see page 1-5-26).
		Broken fuser heater wire.	Replace the fuser unit (see page 1-5-26).
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-27).
6020	Abnormally high fuser thermistor temperature	Deformed connector pin.	See page 1-4-22.
	The fuser thermistor detects a temperature higher than	Defective triac.	See page 1-4-22.
	temperature higher than 240°C/464°F. By the activation of the high temperature error detection circuit (230°C/446°F or more) of fuser thermistor, the illumination of fuser heater was forcibly turned off and 10 s has elapsed.	Shorted fuser thermistor.	Replace the fuser unit (see page 1-5-26).
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-27).

Code	Contents	Causes	Check procedures/ corrective measures
6030	Broken fuser thermistor wire Input from fuser thermistor is 3 or less (A/D value) continuously for 1 s.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Fuser unit and eject PWB (YC3) Eject PWB (YC1) and engine PWB (YC19)
		Deformed connector pin.	See page 1-4-22.
		Defective triac.	See page 1-4-22.
		Broken fuser thermistor wire.	Replace the fuser unit (see page 1-5-26).
		Fuser thermostat triggered.	Reinsert the fuser unit (see page 1-5-26).
		Broken fuser heater wire.	Replace the fuser unit (see page 1-5-26).
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-27).
6000/ 6020/ 6030 Com- bined	Broken fuser heater wire Abnormally high fuser thermistor temperature Broken fuser thermistor wire	Deformed connector pin.	If the I/F connector pins of the fuser unit and the main unit are deformed owing to foreign matters, such as paper dusts, replace the connectors or the units including the connectors.
		Defective triac.	Remove the power cord and check that the resistance between terminals T1 and T2 of the triac TRA51 is of several Mega-Ohms and not shorted (see figure 1-4-4). If failed, replace the power source PWB (see page 1-5-29).
		T	Power source PWB Figure 1-4-4

Code	Contents	Causes	Check procedures/ corrective measures
6400	Zero-cross signal error The zero-cross signal does not reach the engine PWB for more than 1 s.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Power source PWB (YC103) and relay PWB (YC1) Relay PWB (YC4) and engine PWB (YC9)
		Defective power source PWB or engine PWB.	Replace the power source PWB or the engine PWB and check for correct operation (see page 1-5-29, 1-5-27).
7001	Toner motor K error When the toner motor K is driven, the motor over-current detection signal is detected	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Toner motor K and engine PWB (YC23)
	continuously for 50 times (5 s) at 100 ms intervals.	Defective drive transmission system of the toner motor K.	Check if the rollers and gears rotate smoothly. If not, grease the bushes and gears. Check for broken gears and replace if any.
		Defective toner motor K.	Replace the toner motor K.
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-27).
7002	Toner motor C error When the toner motor C is driven, the motor over-current detection signal is detected continuously for 50 times (5 s) at 100 ms intervals.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Toner motor C and engine PWB (YC25)
		Defective drive transmission system of the toner motor C.	Check if the rollers and gears rotate smoothly. If not, grease the bushes and gears. Check for broken gears and replace if any.
		Defective toner motor C.	Replace the toner motor C.
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-27).
7003	Toner motor M error When the toner motor M is driven, the motor over-current detection signal is detected continuously for 50 times (5 s) at 100 ms intervals.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Toner motor M and engine PWB (YC24)
		Defective drive transmission system of the toner motor M.	Check if the rollers and gears rotate smoothly. If not, grease the bushes and gears. Check for broken gears and replace if any.
		Defective toner motor M.	Replace the toner motor M.
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-27).

Code	Contents	Causes	Check procedures/ corrective measures
7004	When the toner motor Y is driven, the motor over-current detection signal is detected continuously for 50 times (5 s) at 100 ms intervals.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Toner motor Y and engine PWB (YC26)
		Defective drive transmission system of the toner motor Y.	Check if the rollers and gears rotate smoothly. If not, grease the bushes and gears. Check for broken gears and replace if any.
		Defective toner motor Y.	Replace the toner motor Y.
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-27).
7401	Developing unit K non- installing error No density detection signal is output from toner sensor K in developing unit K.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Developing unit K and Drum relay PWB (YC6) Drum relay PWB (YC1) and engine PWB (YC34)
		Defective toner sensor K.	Replace the developing unit K (see page 1-5-19).
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-27).
7402	Developing unit C non- installing error No density detection signal is output from toner sensor C in developing unit C.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Developing unit C and Drum relay PWB (YC10) Drum relay PWB (YC1) and engine PWB (YC34)
		Defective toner sensor C.	Replace the developing unit C (see page 1-5-19).
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-27).
7403	Developing unit M non- installing error No density detection signal is output from toner sensor M in developing unit M.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Developing unit M and Drum relay PWB (YC7) Drum relay PWB (YC1) and engine PWB (YC34)
		Defective toner sensor M.	Replace the developing unit M (see page 1-5-19).
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-27).

Code	Contents	Causes	Check procedures/ corrective measures
7404	Developing unit Y non- installing error No density detection signal is output from toner sensor Y in developing unit Y.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Developing unit Y and Drum relay PWB (YC13) Drum relay PWB (YC1) and engine PWB (YC34)
		Defective toner sensor Y.	Replace the developing unit Y (see page 1-5-19).
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-27).
7411	Drum unit K non- installing error The EEPROM of drum PWB K	Installation of incompatible drum unit K.	Install drum unit K compatible with the specifications to the machine.
	does not communicate normally.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Drum unit K and Drum relay PWB (YC2) Drum relay PWB (YC1) and engine PWB (YC34)
		Defective drum PWB K.	Replace the drum unit K (see page 1-5-21).
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-27).
7412	Drum unit C non- installing error The EEPROM of drum PWB	Installation of incompatible drum unit C.	Install drum unit C compatible with the specifications to the machine.
	C does not communicate normally.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Drum unit C and Drum relay PWB (YC4) Drum relay PWB (YC1) and engine PWB (YC34)
		Defective drum PWB C.	Replace the drum unit C (see page 1-5-21).
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-27).

Code	Contents	Causes	Check procedures/ corrective measures
7413	Drum unit M non- installing error The EEPROM of drum PWB	Installation of incompatible drum unit M.	Install drum unit M compatible with the specifications to the machine.
	M does not communicate normally.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Drum unit M and Drum relay PWB (YC3) Drum relay PWB (YC1) and engine PWB (YC34)
		Defective drum PWB M.	Replace the drum unit M (see page 1-5-21).
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-27).
7414	Drum unit Y non- installing error The EEPROM of drum PWB Y	Installation of incompatible drum unit Y.	Install drum unit Y compatible with the specifications to the machine.
	does not communicate normally.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Drum unit Y and Drum relay PWB (YC5) Drum relay PWB (YC1) and engine PWB (YC34)
		Defective drum PWB Y.	Replace the drum unit Y (see page 1-5-21).
		Defective engine PWB.	Replace the engine PWB and check for correct operation (see page 1-5-27).
9500			Contact the Service Administrative Division.
9510			Contact the Service Administrative Division.
9520			Contact the Service Administrative Division.
9530	Backup data error The serial number of the machine written on the EEPROM of the engine PWB differs with that is written on both the flash memory of the engine PWB and the EEPROM of the drum PWB as a backup.	Replacing both the engine PWB and the drum unit at the same time.	Check that the machine operates properly by reverting the engine controller and the drum unit to the old ones. To replace the engine PWB and the drum unit at the same time, turn on the machine after replacing either one. Check that the machine operates properly and then turn off the machine. Replace the other and turn on the machine to check that the machine operates properly. Be sure to replace one by one.
F000	Main PWB - operation panel PWB communication error	Defective main PWB.	Turn the main power switch off/on to restart the machine. If the error is not resolved, replace main PWB (see page 1-5-30).
		Defective operation panel PWB.	Replace the operation panel PWB and check for correct operation.

Code	Contents	Causes	Check procedures/ corrective measures
F010	Main PWB checksum error	Defective main PWB.	Turn the main power switch off/on to restart the machine. If the error is not resolved, replace main PWB (see page 1-5-30).
F020	Main PWB RAM checksum error	Defective main memory (RAM) on the main PWB.	Turn the main power switch off/on to restart the machine. If the error is not resolved, replace main PWB (see page 1-5-30).
		Defective expanded memory (DIMM).	Replace the expanded memory (DIMM) (see page 1-2-12).
F040	Main PWB - print engine communication error	Defective main PWB.	Turn the main power switch off/on to restart the machine. If the error is not resolved, replace main PWB (see page 1-5-30).
			Replace the engine PWB and check for correct operation (see page 1-5-27).
F041	Main PWB - scanner engine communication error	Defective main PWB.	Turn the main power switch off/on to restart the machine. If the error is not resolved, replace main PWB (see page 1-5-30).
F050	Print engine ROM check- sum error	Defective engine PWB.	Turn the main power switch off/on to restart the machine. If the error is not resolved, replace engine PWB (see page 1-5-27).
F051	Scanner engine ROM checksum error	Defective engine PWB.	Turn the main power switch off/on to restart the machine. If the error is not resolved, replace engine PWB (see page 1-5-27).
F278	Power supply in drive system error	Main power switch was turned off without using the power key, or a power failure has occurred.	Turn on power. (To switch off power, first press the power key until the main power indicator goes off, then turn the main power switch off.)

Image formation problems

(2) No image

black).

appears (entirely

If the part causing the problem was not supplied, use the unit including the part for replacement.

(1) No image appears (entirely white).



(3) A specific color is printed solid. (4) The back side gets dirty.

(5) Image is too light.



See page 1-4-29

See page 1-4-29 See page 1-4-30



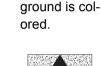
See page 1-4-30



tally.

See page 1-4-30 (9) Streaks are printed horizon-

(10)Spots are printed.



(6) The back-



cally.

(7) White streaks

are printed verti-

cally.

(8) Black streaks

are printed verti-



See page 1-4-31

edge of image

begins to print

(11) The leading

(12)Paper is wrinkled.

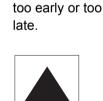
See page 1-4-31

See page 1-4-31 (13)Offset occurs.

See page 1-4-32 (14)Part of image is (15)Fusing is loose.

missing.

See page 1-4-32











See page 1-4-32

See page 1-4-32

See page 1-4-33

See page 1-4-33

See page 1-4-33

(16)Colors are printed offset to each other.



See page 1-4-34

(1) No image appears (entirely white).

Print example		Causes	Check procedures/corrective measures
	Defective transfer bias output.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. High voltage PWB and engine PWB (YC11)
		Defective high voltage PWB.	Replace the high voltage PWB (see page 1-5-35).
		Defective engine PWB.	Replace the engine PWB (see page 1-5-27).
	Defective developing bias output.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. High voltage PWB and engine PWB (YC11)
		Defective high voltage PWB.	Replace the high voltage PWB (see page 1-5-35).
		Defective engine PWB.	Replace the engine PWB (see page 1-5-27).
	No LSU laser is out-	Defective laser scanner unit.	Replace the laser scanner unit KM/CY (see page 1-5-45).
	put.	Defective engine PWB.	Replace the engine PWB (see page 1-5-27).

(2) No image appears (entirely black).

Print example	Causes		Check procedures/corrective measures
	No main charging.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. High voltage PWB and engine PWB (YC11)
		Defective charger roller unit.	Replace the drum unit (see page 1-5-21).
		Defective high voltage PWB.	Replace the high voltage PWB (see page 1-5-35).
		Defective engine PWB.	Replace the engine PWB (see page 1-5-27).
la	Exposure lamp fails to light.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Exposure lamp and inverter PWB (CN2) Inverter PWB (CN1) and CCD PWB (YC3) CCD PWB (YC1) and main PWB (YC8)
		Defective inverter PWB or CCD PWB.	Replace the scanner unit (see page 1-5-48).
		Defective main PWB.	Replace the main PWB (see page 1-5-30).
	The laser is activated simultane-ously for all colors.	Defective laser scanner unit.	Replace the laser scanner unit KM/CY (see page 1-5-45).

(3) A specific color is printed solid.

Print example	Causes	Check procedures/corrective measures
	Defective charger roller unit which corresponds to the color causing the problem.	Replace the drum unit for the color that causes an error (see page 1-5-21).
	Laser of laser scanner unit for solid color printing is ON. Defective laser scanner unit.	Replace the laser scanner unit KM/CY (see page 1-5-45).

(4) The back side gets dirty.

Print example	Causes	Check procedures/corrective measures
	Dirty secondary transfer roller.	Clean the secondary transfer roller.
	Dirty paper conveying path.	Clean the paper conveying path.
	Dirty heat roller and press roller.	Clean the heat roller and press roller.

(5) Image is too light.

Print example	Causes		Check procedures/corrective measures
	Defective developing bias output.	Defective developing unit.	Replace the developing unit for the color that causes an error (see page 1-5-19).
		Defective high voltage PWB.	Replace the high voltage PWB (see page 1-5-35).
		Defective engine PWB.	Replace the engine PWB (see page 1-5-27).
	Defective drum unit.		Decrease the surface potential by performing the main charger adjustment (see page 1-3-87). When the problem is not cleared, replace the drum unit (see page 1-5-21).
	Defective transfer	Defective high voltage PWB.	Replace the high voltage PWB (see page 1-5-35).
	bias output.	Defective engine PWB.	Replace the engine (see page 1-5-27).
	Defective color calibration.		Perform the color calibration (Refer to operation guide).
	Insufficient toner.		If the display shows the message requesting toner replenishment, replace the container.
	Insufficient agitation of toner container.		Shake the toner container vertically approximately 10 times.
	Paper damp.		Check the paper storage conditions, replace the paper.

(6) The background is colored.

Print example	Causes		Check procedures/corrective measures
	Defective color calibration.		Perform the color calibration (Refer to operation guide).
	Defective developing	Defective developing unit.	Replace the developing unit for the color that causes an error (see page 1-5-19).
	bias output.	Defective high voltage PWB.	Replace the high voltage PWB (see page 1-5-35).
		Defective engine PWB.	Replace the engine PWB (see page 1-5-27).
	Defective	Defective drum unit.	Replace the drum unit (see page 1-5-21).
	drum sur- face charg- ing.	Defective high voltage PWB.	Replace the high voltage PWB (see page 1-5-35).
ing.		Defective engine PWB.	Replace the engine PWB (see page 1-5-27).

(7) White streaks are printed vertically.

Print example	Causes	Check procedures/corrective measures
	Foreign object in one of the developing units.	Replace the developing unit for the color that causes an error (see page 1-5-19).
	Adhesion of soiling to transfer belt.	Clean the transfer belt. Replace the intermediate transfer unit if it is extremely dirty (see page 1-5-22).
	Adhesion of soiling to transfer roller.	Clean the transfer roller. Replace the transfer roller if it is extremely dirty (see page 1-5-25).
	Dirty LSU dust shield glass.	Perform the LSU dust shield glass cleaning.

(8) Black streaks are printed vertically.

Print example	Causes	Check procedures/corrective measures
	Dirty contact glass.	Clean the contact glass.
	Dirty slit glass.	Clean the slit glass.
	Dirty or flawed drum.	Perform the drum surface refreshing (see page 1-3-86). Flawed drum. Replace the drum unit (see page 1-5-21).
	Deformed or worn cleaning blade in the drum unit.	Replace the drum unit (see page 1-5-21).
	Worn primary transfer belt.	Replace the intermediate transfer unit (see page 1-5-22).
	Defective transfer roller.	Replace the transfer roller (see page 1-5-25).

(9) Streaks are printed horizontally.

Print example	Causes	Check procedures/corrective measures
	Dirty or flawed drum.	Perform the drum surface refreshing (see page 1-3-86). Flawed drum. Replace the drum unit (see page 1-5-21).
	Dirty developing section.	Clean any part contaminated with toner in the developing section.
	Poor contact of grounding terminal of drum unit.	Check the installation of the drum unit. If it operates incorrectly, replace it (see page 1-5-21).

(10) Spots are printed.

Print example	Causes	Check procedures/corrective measures
	Dirty contact glass.	Clean the contact glass.
	Dirty or flawed drum.	Perform the drum surface refreshing (see page 1-3-86). Flawed drum. Replace the drum unit (see page 1-5-21).
	Deformed or worn cleaning blade in the drum unit.	Replace the drum unit (see page 1-5-21).
	Flawed developing roller.	Replace the developing unit (see page 1-5-19).
	Dirty heat roller and press roller.	Clean the heat roller and press roller.

(11) The leading edge of image begins to print too early or too late.

Print example Causes		Check procedures/corrective measures
	Paper feed clutch or registration clutch operating incorrectly.	Check the installation of the clutch. If it operates incorrectly, replace it.

(12) Paper is wrinkled.

Print example	Causes	Check procedures/corrective measures
	Paper curled.	Check the paper storage conditions.
	Paper damp.	Check the paper storage conditions.

(13) Offset occurs.

Print example	Causes	Check procedures/corrective measures
	Defective drum surface charging.	Perform the drum surface refreshing (see page 1-3-86). When the problem is not cleared, increase the surface potential by performing the main charger adjustment (see page 1-3-87).
	Deformed or worn cleaning blade in the drum unit.	Replace the drum unit (see page 1-5-21).
	Defective transfer belt cleaning.	Replace the intermediate transfer unit (see page 1-5-22).
	Defective fuser unit.	Replace the fuser unit (see page 1-5-26).
	Wrong types of paper.	Check if the paper meets specifications. Replace paper.

(14) Part of image is missing.

Print example	Causes	Check procedures/corrective measures
	Paper damp.	Check the paper storage conditions.
	Paper creased.	Replace the paper.
	Drum condensation.	Perform the drum surface refreshing (see page 1-3-86).
	Dirty or flawed drum.	Perform the drum surface refreshing (see page 1-3-86). Flawed drum. Replace the drum unit (see page 1-5-21).
	Dirty transfer belt.	Clean the transfer belt. Replace the intermediate transfer unit if it is extremely dirty (see page 1-5-22).
	Dirty transfer roller.	Clean the transfer roller. Replace the transfer roller if it is extremely dirty (see page 1-5-25).

(15) Fusing is loose.

Print example	Causes	Check procedures/corrective measures
	Wrong types of paper.	Check if the paper meets specifications, replace paper.
	Flawed heat roller or press roller.	Replace the fuser unit (see page 1-5-26).

(16) Colors are printed offset to each other.

Print example	Causes	Check procedures/corrective measures
+ 4	Defective color calibration.	Perform the color calibration (refer to operation guide).
+ +	Slip the mirror position of laser scanner unit.	Perform the normal color registration. When the problem is not cleared, perform the detail color registration adjustment (refer to operation guide).

1-4-4 Electric problems

If the part causing the problem was not supplied, use the unit including the part for replacement. Troubleshooting to each failure must be in the order of the numbered symptoms.

Problem	Causes	Check procedures/corrective measures
(1) The machine does	No electricity at the power outlet.	Measure the input voltage.
not operate when the main power switch is turned on.	The power cord is not plugged in properly.	Check the contact between the power plug and the outlet.
	The top tray is not closed completely.	Check the top tray.
	4. Broken power cord.	Check for continuity. If none, replace the cord.
	5. Defective main power switch.	Check for continuity across the contacts. If none, replace the power source PWB (see page 1-5-29).
	Defective interlock switch.	Check for continuity across the contacts of interlock switch. If none, replace the power source PWB (see page 1-5-29).
	7. Defective power source PWB.	Replace the power source PWB (see page 1-5-29).
(2) Duplex motor does not operate.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Duplex motor and engine PWB (YC37)
	Defective drive trans- mission system.	Check if the rollers and gears rotate smoothly. If not, grease the bushes and gears. Check for broken gears and replace if any.
	3. Defective motor.	Replace the duplex motor.
	4. Defective PWB.	Replace the engine PWB and check for correct operation (see page 1-5-27).
(3) Right fan motor does not operate.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Right fan motor and main PWB (YC42)
	2. Defective motor.	Replace the right fan motor.
	3. Defective PWB.	Replace the main PWB and check for correct operation (see page 1-5-30).
(4) Left fan motor does not operate.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Left fan motor and engine PWB (YC29)
	2. Defective motor.	Replace the left fan motor.
	3. Defective PWB.	Replace the engine PWB and check for correct operation (see page 1-5-27).

Problem	Causes	Check procedures/corrective measures
(5) Controller fan motor does not	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Controller fan motor and main PWB (YC41)
operate.	2. Defective motor.	Replace the controller fan motor.
	3. Defective PWB.	Replace the main PWB and check for correct operation (see page 1-5-30).
(6) Fuser fan motor does not operate.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Fuser fan motor and engine PWB (YC40)
	2. Defective motor.	Replace the fuser fan motor.
	3. Defective PWB.	Replace the engine PWB and check for correct operation (see page 1-5-27).
(7) Container fan motor does not	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Container fan motor and engine PWB (YC28)
operate.	2. Defective motor.	Replace the container fan motor.
	3. Defective PWB.	Replace the engine PWB and check for correct operation (see page 1-5-27).
(8) ISU motor does not operate.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. ISU motor and main PWB (YC36)
	Defective drive trans- mission system.	Check if the rollers and gears rotate smoothly. If not, grease the bushes and gears. Check for broken gears and replace if any.
	3. Defective motor.	Replace the ISU motor.
	4. Defective PWB.	Replace the main PWB and check for correct operation (see page 1-5-30).
(9) Paper feed clutch does not operate.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Paper feed clutch and engine PWB (YC3)
	2. Defective clutch.	Replace the paper feed clutch.
	3. Defective PWB.	Replace the engine PWB and check for correct operation (see page 1-5-27).
(10) MP feed clutch does not operate.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. MP feed clutch and engine PWB (YC3)
	2. Defective clutch.	Replace the MP feed clutch.
	3. Defective PWB.	Replace the engine PWB and check for correct operation (see page 1-5-27).

Problem	Causes	Check procedures/corrective measures
(11) Registration clutch does not operate.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Registration clutch and engine PWB (YC3)
	2. Defective clutch.	Replace the registration clutch.
	3. Defective PWB.	Replace the engine PWB and check for correct operation (see page 1-5-27).
(12) Middle clutch does not operate.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Middle clutch and engine PWB (YC3)
	2. Defective clutch.	Replace the middle clutch.
	3. Defective PWB.	Replace the engine PWB and check for correct operation (see page 1-5-27).
(13) MP solenoid does not operate.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. MP solenoid and engine PWB (YC4)
	2. Defective solenoid.	Replace the MP solenoid.
	3. Defective PWB.	Replace the engine PWB and check for correct operation (see page 1-5-27).
(14) The message requesting paper to	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Cassette PWB (YC1) and engine PWB (YC21)
be loaded is shown when paper is present on the cas-	Deformed actuator of the paper sensor.	Check visually and replace if necessary.
sette.	3. Defective paper sensor.	Replace the cassette PWB.
	4. Defective PWB.	Replace the engine PWB and check for correct operation (see page 1-5-27).
(15) The message requesting paper to	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. MP paper sensor and engine PWB (YC16)
be loaded is shown when paper is present on the MP	Deformed actuator of the MP paper sensor.	Check visually and replace if necessary.
tray.	Defective MP paper sensor.	Replace the MP paper sensor.
	4. Defective PWB.	Replace the engine PWB and check for correct operation (see page 1-5-27).
(16) The size of paper on the cassette is	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. Cassette size switch and engine PWB (YC17)
not displayed cor- rectly.	Defective cassette size switch.	Replace the cassette size switch.
	3. Defective PWB.	Replace the engine PWB and check for correct operation (see page 1-5-27).

Problem	Causes	Check procedures/corrective measures
(17) A paper jam in the paper feed, paper conveying or eject section is indicated when the	A piece of paper torn from paper is caught around registration sensor, MP paper conveying sensor or eject sensor.	Check visually and remove it, if any.
main power switch is turned on.	Defective registration sensor.	Replace the registration sensor.
	Defective MP paper conveying sensor.	Replace the MP paper conveying sensor.
	Defective eject sensor.	Replace the eject PWB.
(18) A message indicat-	Deformed actuator of the interlock switch.	Check visually and replace if necessary.
ing cover open is displayed when the top tray or rear cover is closed.	Defective interlock switch.	Replace the interlock switch.
(19) DP paper feed motor does not operate.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. DP paper feed motor and DP drive PWB (YC3) DP drive PWB (YC1) and main PWB (YC32)
	Defective drive trans- mission system.	Check if the rollers and gears rotate smoothly. If not, grease the bushes and gears. Check for broken gears and replace if any.
	3. Defective motor.	Replace the DP paper feed motor.
	4. Defective PWB.	Replace the DP drive PWB or main PWB and check for correct operation (see page 1-5-87, 1-5-30).
(20) DP paper feed clutch does not operate.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. DP paper feed clutch and DP drive PWB (YC6) DP drive PWB (YC8) and main PWB (YC32)
	2. Defective clutch.	Replace the DP paper feed clutch.
	3. Defective PWB.	Replace the DP drive PWB or main PWB and check for correct operation (see page 1-5-87, 1-5-30).
(21) DP pressure solenoid does not operate.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. DP pressure solenoid and DP drive PWB (YC4) DP drive PWB (YC8) and main PWB (YC32)
	2. Defective solenoid.	Replace the DP pressure solenoid.
	3. Defective PWB.	Replace the DP drive PWB or main PWB and check for correct operation (see page 1-5-87, 1-5-30).

Problem	Causes	Check procedures/corrective measures
(22) DP switchback solenoid does not operate.	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. DP switchback solenoid and DP drive PWB (YC5) DP drive PWB (YC8) and main PWB (YC32)
	2. Defective solenoid.	Replace the DP switchback solenoid.
	3. Defective PWB.	Replace the DP drive PWB or main PWB and check for correct operation (see page 1-5-87, 1-5-30).
(23) An original jams when the main power switch is	A piece of paper torn from an original is caught around the DP timing sensor.	Check visually and remove it, if any.
turned on.	Defective DP timing sensor.	Replace the DP timing sensor.
(24) A message indicating cover open is displayed when the	Defective connector cable or poor contact in the connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, replace the cable. DP open/close sensor and DP drive PWB (YC2) DP drive PWB (YC8) and main PWB (YC32)
DP top cover is closed.	2. Defective DP open/close sensor.	Replace the DP open/close sensor.

1-4-5 Mechanical problems

If the part causing the problem was not supplied, use the unit including the part for replacement.

Problem	Causes/check procedures	Corrective measures
(1) No primary paper feed.	Check if the surfaces of the following rollers are dirty with paper powder. Pickup roller Paper feed roller MP paper feed roller	Clean with isopropyl alcohol.
	Check if the following rollers is deformed. Pickup roller Paper feed roller MP paper feed roller	Check visually and replace any deformed (see page 1-5-15, 1-5-17).
	Defective paper feed clutch installation.	Check visually and remedy if necessary.
(2) No secondary paper feed.	Check if the surfaces of the following rollers are dirty with paper powder. Front registration roller Rear registration roller	Clean with isopropyl alcohol.
	Defective registration clutch installation.	Check visually and remedy if necessary.
(3) Skewed paper feed.	Paper width guide in a cassette installed incorrectly.	Check the paper width guide visually and remedy or replace if necessary.
(4)	Check if the paper is excessively curled.	Change the paper.
Multiple sheets of paper are fed.	Paper is loaded incorrectly.	Load the paper correctly.
paper are red.	Check if the retard roller is worn.	Replace the retard roller if it is worn (see page 1-5-13).
(5)	Check if the paper is excessively curled.	Change the paper.
Paper jams.	Check if the contact between the front and rear registration rollers is correct.	Check visually and remedy if necessary.
	Check if the heat roller or press roller is extremely dirty or deformed.	Check visually and replace the fuser unit (see page 1-5-26).
(6) Abnormal noise is	Check if the rollers, pulleys and gears operate smoothly.	Grease the bushes and gears.
heard.	Check if the following clutches are installed correctly. Paper feed clutch MP feed clutch Registration clutch Middle clutch	Check visually and remedy if necessary.
	Check if the following fan motors are installed correctly. Left fan motor Right fan motor Controller fan motor Fuser fan motor Container fan motor	Check visually and remedy if necessary.

Problem	Causes/check procedures	Corrective measures
(7) No primary original feed.	Check if the surfaces of the following pulleys are dirty with paper powder. DP forwarding pulley DP feed pulley	Clean with isopropyl alcohol.
	Check if the following pulleys is deformed. DP forwarding pulley DP feed pulley	Check visually and replace any deformed (see page 1-5-82).
(8)	Original is not correctly set.	Set the original correctly.
Multiple sheets of original are fed.	Check if the DP separation pad is worn.	Replace the DP separation pad if it is worn (see page 1-5-86).
(9) Originals jam.	Originals outside the specifications are used.	Use only originals conforming to the specifications.
	Check if the surfaces of the following pulleys are dirty with paper powder. DP forwarding pulley DP feed pulley	Clean with isopropyl alcohol.
	Check if the contact between the conveying roller and conveying pulley is correct.	Check visually and remedy if necessary.
	Check if the contact between the eject roller and eject pulley is correct.	Check visually and remedy if necessary.
	Check if the contact between the switch-back roller and switchback pulley is correct.	Check visually and remedy if necessary.

1-4-6 Send error code

This section describes the scanning errors and descriptions, preventive actions, as well as corrective actions. Error codes not described here could fall within software errors.

If such an error is encountered, turn power off then on, and advise the service representative.

(1) Scan to SMB error codes

Code	Contents	Check procedures/corrective measures
1101	Host destined does not exist on the network.	 Confirm destined host. Confirm device's network parameters. Confirm the network parameters the device is connected.
1102	Login to the host has failed.	 Confirm user name and passowrd. Confirm the network parameters the device is connected. Check the host if the folder is properly shared.
1103	Destined host, folder, and/or file names are invalid.	 Check illegal characters are not contained within these names. Check the name of the folder and files conform with the naming syntax. Confirm destined host and folder.
1105	SMB protocol is not enabled.	Confirm device's SMB protocols.
2101	Login to the host has failed.	 Confirm destined host. Confirm that the LAN cable is properly connected to the device. Check the SMB port number. Confirm device's network parameters. Confirm the network parameters the device is connected.
2201	Writing scanned data has failed.	 Check the scanning file name. Confirm device's network parameters. Confirm the network parameters the device is connected.

(2) Scan to FTP error codes

Code	Contents	Check procedures/corrective measures
1101	FTP server does not exist on the network.	 Check the FTP server name. Confirm device's network parameters. Confirm the network parameters the device is connected.
1102	Login to the FTP server has failed.	 Confirm user name and passowrd. Check the FTP server name.
1103	Destined folder is invalid.	Check illegal characters are not contained within these names. Check the FTP server name.
1105	FTP protocol is not enabled.	Confirm device's FTP protocols.
1131	Initializing TLS has failed.	Confirm device's security parameters.
1132	TLS negotiation has failed.	Confirm device's security parameters. Check the FTP server name.
2101	Access to the FTP server has failed.	 Check the FTP server name. Confirm that the LAN cable is properly connected to the device. Check the FTP port number. Confirm device's network parameters. Confirm the network parameters the device is connected. Check the FTP server name.
2102	Access to the FTP server has failed. (Connection timeout)	 Check the FTP server name. Check the FTP port number. Confirm device's network parameters. Confirm the network parameters the device is connected. Check the FTP server name.
2201	Connection with the FTP server has failed.	 Confirm device's network parameters. Confirm the network parameters the device is connected. Confirm destined folder. Check the FTP server name.
2202	Connection with the FTP server has failed. (Timeout)	 Confirm device's network parameters. Confirm the network parameters the device is connected.
2231	Connection with the FTP server has failed. (FTPS communication)	Confirm device's network parameters. Confirm the network parameters the device is connected.
3101	FTP server responded with an error.	 Confirm device's network parameters. Confirm the network parameters the device is connected. Check the FTP server.

(3) Scan to E-mail error codes

Code	Contents	Check procedures/corrective measures
1101	SMTP/POP3 server does not exist on the network.	 Check the SMTP/POP3 server name. Confirm device's network parameters. Confirm the network parameters the device is connected.
1102	Login to the SMTP/POP3 server has failed.	Confirm user name and passowrd. Check the SMTP/POP3 server.
1104	The domain the destinede address belongs is prohibited by scanning restriction.	Confirm device's SMTP parameters.
1105	SMTP protocol is not enabled.	Confirm device's SMTP protocols.
1106	Sender's address is not specified.	Confirm device's SMTP protocols.
2101	Connection to the SMTP/POP3 server has failed.	 Check the SMTP/POP3 server name. Confirm that the LAN cable is properly connected to the device. Check the SMTP/POP3 port number. Confirm device's network parameters. Confirm the network parameters the device is connected. Check the SMTP/POP3 server.
2102	Connection to the SMTP/POP3 server has failed. (Connection timeout)	 Check the SMTP/POP3 server name. Check the SMTP/POP3 port number. Confirm device's network parameters. Confirm the network parameters the device is connected. Check the SMTP/POP3 server.
2201	Connection to the SMTP/POP3 server has failed.	Confirm device's network parameters. Confirm the network parameters the device is connected.
2202	Connection to the SMTP/POP3 server has failed. (Timeout)	 Confirm device's network parameters. Confirm the network parameters the device is connected.
2204	The size of scanning exceeded its limit.	Confirm device's network parameters.
3101	SMTP/POP3 server responded with an error.	Confirm device's network parameters. Confirm the network parameters the device is connected. Check the SMTP/POP3 server.
3201	No SMTP authentication is found.	Check the SMTP server. The device supports SMTP authentication services including CRAM-MD5, DIGEST-MD5, PLAIN and LOGIN.

1-4-7 Error codes

(1) Error code

Error codes are listed on the communication reports, activity report, etc. The codes consist of an error code indication U followed by a 5-digit number. (Error codes for V34 communication errors start with an E indication, followed by five digits.)

The upper three of the five digits indicate general classification of the error and its cause, while the lower two indicate the detailed classification. Items for which detailed classification is not necessary have 00 as the last two digits.

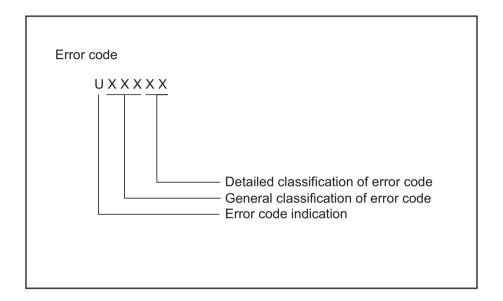


Figure 1-4-5

(2) Table of general classification

Error code	Description
U00000	No response or busy after the set number of redials.
U00100	Transmission was interrupted by a press of the stop/clear key.
U00200	Reception was interrupted by a press of the stop/clear key.
U00300	Recording paper on the destination unit has run out during transmission.
U004XX	A connection was made but interrupted during handshake with the receiver unit (refer to 1-4-48 U004XX error code table).
U006XX	Communication was interrupted because of a machine problem (refer to 1-4-48 U006XX error code table).
U00700	Communication was interrupted because of a problem in the destination unit.
U008XX	A page transmission error occurred in G3 mode (refer to 1-4-48 U008XX error code table).
U009XX	A page reception error occurred in G3 mode (refer to 1-4-48 U009XX error code table).
U010XX	Transmission in G3 mode was interrupted by a signal error (refer to 1-4-49 U010XX error code table).
U011XX	Reception in G3 mode was interrupted by a signal error (refer to 1-4-50 U011XX error code table).
U01400	An invalid one-touch key was specified during communication.
U01500	A communication error occurred when calling in V.8 mode.
U01600	A communication error occurred when called in V.8 mode.
U017XX	A communication error occurred before starting T.30 protocol during transmission in V.34 mode (refer to 1-4-51 U017XX error code table).
U018XX	A communication error occurred before starting T.30 protocol during reception in V.34 mode (refer to 1-4-51 U018XX error code table).
U03000	No document was present in the destination unit when polling reception started.
U03200	In interoffice subaddress-based bulletin board reception, data was not stored in the box specified by the destination unit.
U03300	In polling reception from a unit of our make, operation was interrupted due to a mismatch in permit ID or telephone number. Or, in interoffice subaddress-based bulletin board reception, operation was interrupted due to a mismatch in permit ID or telephone number.
U03400	Polling reception was interrupted because of a mismatch in individual numbers (destination unit is either of our make or by another manufacturer).
U03500	In interoffice subaddress-based bulletin board reception, the specified Subaddress confidential box number was not registered in the destination unit.
U03600	An interoffice subaddress-based bulletin board reception was interrupted because of a mismatch in the specified subaddress confidential box number.
U03700	Interoffice subaddress-based bulletin board reception failed because the destination unit had no subaddress-based bulletin board transmission capability, or data was not stored in any subaddress confidential box in the destination unit.
U04000	In interoffice subaddress-based transmission mode, the specified subaddress box number was not registered in the destination unit.

Error code	Description
U04100	Subaddress-based transmission failed because the destination unit had no subaddress-based reception capability.
U04200	In encrypted transmission, the specified encryption box was not registered in the destination unit.
U04300	Encrypted transmission failed because the destination unit had no encrypted communication capability.
U04400	Encrypted transmission was interrupted because encryption keys did not agree.
U04500	Encrypted reception was interrupted because of a mismatch in encryption keys.
U05100	Password check transmission or restricted transmission was interrupted because the permit ID's did not agree with.
U05200	Password check reception or restricted reception was interrupted because the permit ID's did not match, the rejected FAX number's did match, or the destination receiver did not return its phone number.
U05300	The password check reception or the restricted reception was interrupted because the permitted numbers did not match, the rejected numbers did match, or the machine in question did not acknowledge its phone number.
U14000	Memory overflowed during confidential reception. Or, in subaddress-based confidential reception, memory overflowed.
U14100	In interoffice subaddress-based transmission, memory overflowed in the destination unit.
U19000	Memory overflowed during memory reception.
U19100	Memory overflowed in the destination unit during transmission.
U19300	Transmission failed because an error occurred during JBIG encoding.

(2-1) U004XX error code table: Interrupted phase B

Error code	Description
U00430	Polling request was received but interrupted because of a mismatch in permit number. Or, subaddress-based bulletin board transmission request was received but interrupted because of a mismatch in permit ID in the transmitting unit.
U00431	An subaddress-based bulletin board transmission was interrupted because the specified subaddress confidential box was not registered.
U00432	An subaddress-based bulletin board transmission was interrupted because of a mismatch in Subaddress confidential box numbers.
U00433	Subaddress-based bulletin board transmission request was received but data was not present in the subaddress confidential box.
U00440	Subaddress-based confidential reception was interrupted because the specified subaddress box was not registered.
U00450	The destination transmitter disconnected because the permit ID's did not agree with while the destination transmitter is in password-check transmission or restricted transmission.
U00460	Encrypted reception was interrupted because the specified encryption box number was not registered.
U00462	Encrypted reception was interrupted because the encryption key for the specified encryption box was not registered.

(2-2) U006XX error code table: Problems with the unit

Error code	Description
U00601	Document jam or the document length exceeds the maximum.
U00613	Image writing section problem
U00656	Data was not transmitted to a modem error.
U00690	System error.

(2-3) U008XX error code table: Page transmission error

Error code	Description
U00800	A page transmission error occurred because of reception of a RTN or PIN signal.
U00811	A page transmission error reoccurred after retry of transmission in the ECM mode.

(2-4) U009XX error code table: Page reception error

Error code	Description
U00900	An RTN or PIN signal was transmitted because of a page reception error.
U00910	A page reception error remained after retry of transmission in the ECM mode.

(2-5) U010XX error code table: G3 transmission

Error code	Description
U01000	An FTT signal was received for a set number of times after TCF signal transmission at 2400 bps. Or, an RTN signal was received in response to a Q signal (excluding EOP) after transmission at 2400 bps.
U01001	Function of the unit differs from that indicated by a DIS signal.
U01016	An MCF signal was received but no DIS signal was received after transmission of an EOM signal, and T1 timeout was detected.
U01019	No relevant signal was received after transmission of a CNC signal, and the preset number of command retransfers was exceeded (between units of our make).
U01020	No relevant signal was received after transmission of a CTC signal, and the preset number of command retransfers was exceeded (ECM).
U01021	No relevant signal was received after transmission of an EOR.Q signal, and the preset number of command retransfers was exceeded (ECM).
U01022	No relevant signal was received after transmission of an RR signal, and the preset number of command retransfers was exceeded (ECM).
U01028	T5 time-out was detected during ECM transmission (ECM).
U01052	A DCN signal was received after transmission of an RR signal (ECM).
U01080	A PIP signal was received after transmission of a PPS.NULL signal.
U01092	During transmission in V.34 mode, communication was interrupted because of an impossible combination of the symbol speed and communication speed.
U01093	A DCN or other inappropriate signal was received during phase B of transmission.
U01094	The preset number of command retransfers for DCS/NSS signals was exceeded during phase B of transmission.
U01095	No relevant signal was received after transmission of a PPS (Q) signal during phase D of transmission, and the preset number of command transfers was exceeded.
U01096	A DCN signal or invalid command was received during phase D of transmission.
U01097	The preset number of command retransfers was exceeded after transmission of an RR signal or no response.

(2-6) U011XX error code table: G3 reception

Error code	Description
U01100	Function of the unit differs from that indicated by a DCS signal.
U01101	Function of the unit (excl. communication mode select) differs from that indicated by an NSS signal.
U01102	A DTC (NSC) signal was received when no transmission data was in the unit.
U01110	No response after transmission of a DIS signal.
U01111	No response after transmission of a DTC (NSC) signal.
U01113	No response after transmission of an FTT signal.
U01125	No response after transmission of a CNS signal (between units of our make).
U01129	No response after transmission of an SPA signal (short protocol).
U01141	A DCN signal was received after transmission of a DTC signal.
U01143	A DCN signal was received after transmission of an FTT signal.
U01155	A DCN signal was received after transmission of an SPA signal (short protocol).
U01160	During message reception, transmission time exceeded the maximum transmission time per line.
U01162	Reception was aborted due to a modem malfunction during message reception.
U01191	Communication was interrupted because an error occurred during an image data reception sequence in the V.34 mode.
U01193	There was no response, or a DCN signal or invalid command was received, during phase C/D of reception.
U01194	A DCN signal was received during phase B of reception.
U01195	No message was received during phase C of reception.
U01196	Error line control was exceeded and a decoding error occurred for the message being received.

(2-7) U017XX error code table: V.34 transmission

Error code	Description
U01700	A communication error occurred in phase 2 (line probing).
U01720	A communication error occurred in phase 4 (modem parameter exchange).
U01721	Operation was interrupted due to the absence of a common communication speed between units.

- U01700: A communication error that occurs at the transmitting unit in the period after transmission of INFO0 before entering phase 3 (primary channel equivalent device training). For example, INFO0/A/Abar (B/Bbar, for polling transmission)/INFOh was not detected.
- U01720: A communication error that occurs at the transmitting unit in the period after initiating the control channel before entering the T.30 process. For example, PPh/ALT/MPh/E was not detected.
- U01721: In the absence of a common communication speed between units (including when an impossible combination of communication speed and symbol speed occurs) after MPh exchange; 1) a DCN signal was received from the destination unit, and the line was cut; or 2) a DIS (NSF, CSI) signal was received from the destination unit and, in response to the signal, the unit transmitted a DCN signal, and the line was cut.

(2-8) U018XX error code table: V.34 reception

Error code	Description
U01800	A communication error occurred in phase 2 (line probing).
U01810	A communication error occurred in phase 3 (primary channel equivalent device training).
U01820	A communication error occurred in phase 4 (modem parameter exchange).
U01821	Operation was interrupted due to the absence of a common communication speed between units.

- U01800: A communication error that occurs at the receiver unit in the period after transmission of INFO0 before entering phase 3 (primary channel equivalent device training). For example, INFO0/B/Bbar (A/Abar, for polling reception)/probing tone was not detected.
- U01810: A communication error that occurs at the receiver unit in phase 3 (primary channel equivalent device training). For example, S/Sbar/PP/TRN was not detected.
- U01820: A communication error that occurs at the receiver unit in the period after initiating the control channel before entering the T.30 process. For example, PPh/ALT/MPh/E was not detected.
- U01821: In the absence of a common communication speed between units (including when an impossible combination of communication speed and symbol speed occurs) after MPh exchange, a DCN signal was transmitted to the destination unit and the line was cut.

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1-5-1 Precautions for assembly and disassembly

(1) Precautions

Before starting disassembly, press the Power key on the operation panel to off. Make sure that the Power lamp is off before turning off the main power switch. And then unplug the power cable from the wall outlet.

When the fax kit is installed, be sure to disconnect the modular code before starting disassembly.

When handling PWBs (printed wiring boards), do not touch parts with bare hands.

The PWBs are susceptible to static charge.

Do not touch any PWB containing ICs with bare hands or any object prone to static charge.

When removing the hook of the connector, be sure to release the hook.

Take care not to get the cables caught.

To reassemble the parts, use the original screws. If the types and the sizes of screws are not known, refer to the PARTS LIST

(2) Drum

Note the following when handling or storing the drum.

When removing the drum unit, never expose the drum surface to strong direct light.

Keep the drum at an ambient temperature between -20°C/-4°F and 40°C/104°F and at a relative humidity not higher than 85% RH. Avoid abrupt changes in temperature and humidity.

Avoid exposure to any substance which is harmful to or may affect the quality of the drum.

Do not touch the drum surface with any object. Should it be touched by hands or stained with oil, clean it.

(3) Toner

Store the toner container in a cool, dark place.

Avoid direct light and high humidity.

(4) How to tell a genuine Kyocera Mita toner container

As a means of brand protection, the Kyocera Mita toner container utilizes an optical security technology to enable visual validation. A validation viewer is required to accomplish this.

Hold the validation viewer over the left side part of the brand protection seal on the toner container. Through each window of the validation viewer, the left side part of the seal should be seen as follows:

A black-colored band when seen through the left side window (•)

A shiny or gold-colored band when seen through the right side window (🌣)

The above will reveal that the toner container is a genuine Kyocera Mita branded toner container, otherwise, it is a counterfeit.

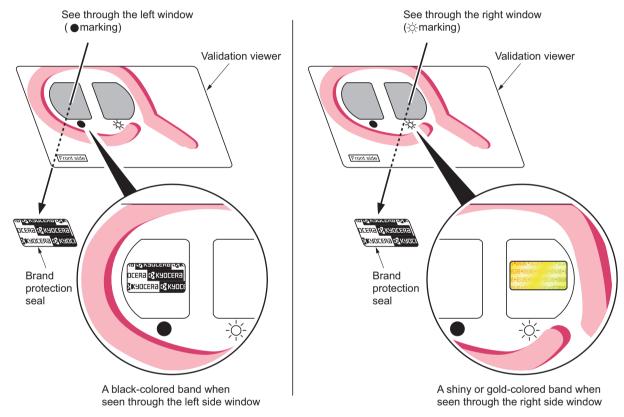


Figure 1-5-1

The brand protection seal has an incision as shown below to prohibit reuse.

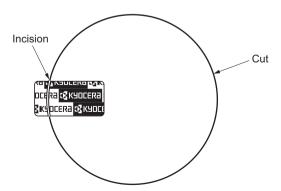


Figure 1-5-2

1-5-2 Outer covers

(1) Detaching and refitting the rear upper cover, right upper cover, left upper cover and front cover

Procedure

- 1. Open the paper conveying unit.
- 2. Release the hook and then remove the IF cover.

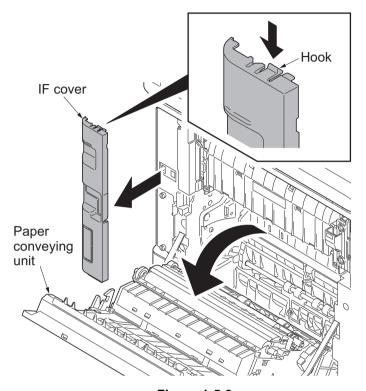


Figure 1-5-3

3. Remove two screws and then remove the rear upper cover.

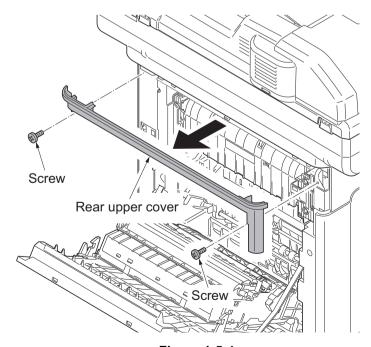


Figure 1-5-4

- 4. Pull the top tray lever and open the top tray.
- 5. Release two hooks. Slide the right upper cover backward and then remove it.

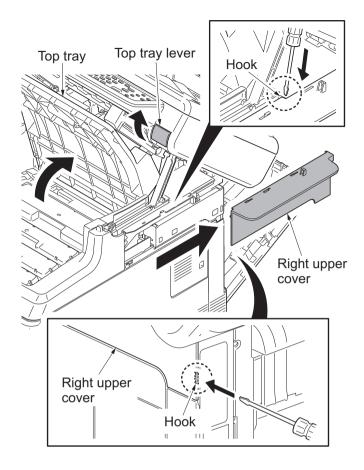


Figure 1-5-5

6. Release the hook. Slide the left upper cover backward and then remove it.

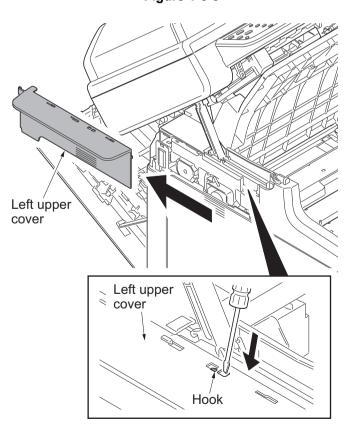


Figure 1-5-6

7. Release five hooks (hook $A \rightarrow B$) and then remove the front cover.

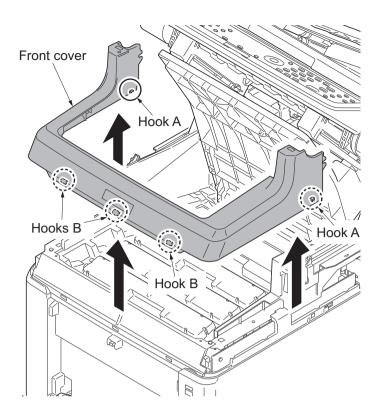


Figure 1-5-7

(2) Detaching and refitting the right rear cover, right cover and right lower cover

- 1. Remove the rear upper cover, right upper cover, left upper cover and front cover (see page 1-5-3).
- 2. Slide the power source cover backward and then remove it.

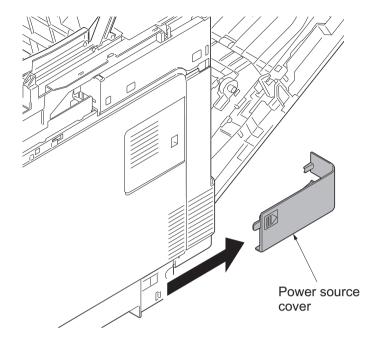


Figure 1-5-8

- 3. Remove the screw.
- 4. Release four hooks. Slide the right rear cover backward and then remove it.

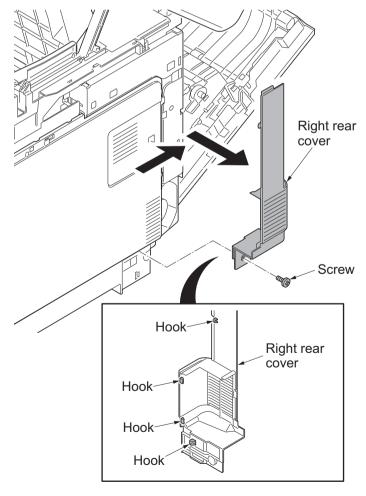


Figure 1-5-9

5. Open the memory cover and then remove it.

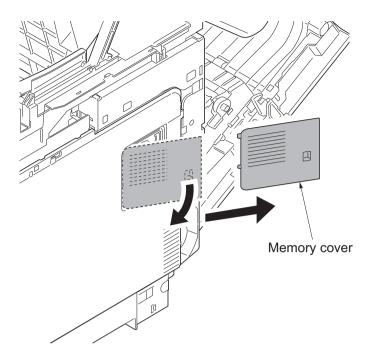


Figure 1-5-10

- 6. Open the waste toner cover.
- 7. Push the lock release button and then remove the waste toner box.

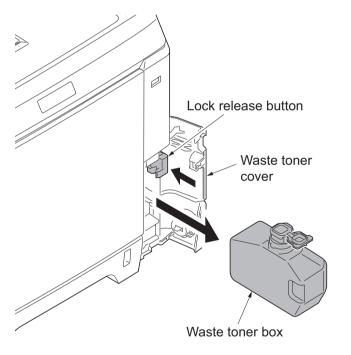


Figure 1-5-11

- Release four hooks (hook A → B→ C).
 Slide the right cover forward and then remove it.
- 9. Remove the waste toner cover.

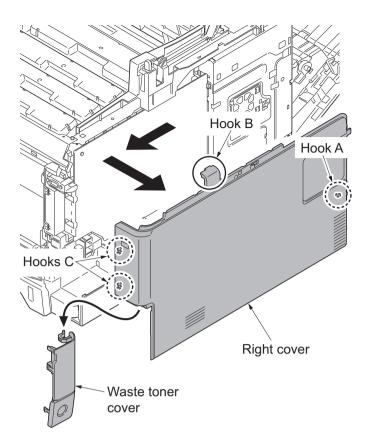


Figure 1-5-12

10. Release the hook. Slide the right lower cover forward and then remove it.

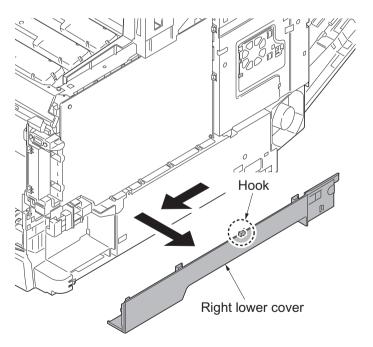


Figure 1-5-13

(3) Detaching and refitting the left rear cover, left cover and left lower cover

Procedure

- 1. Remove the rear upper cover, right upper cover, left upper cover and front cover (see page 1-5-3).
- 2. Release the hook. Slide the left rear cover upward and then remove it.

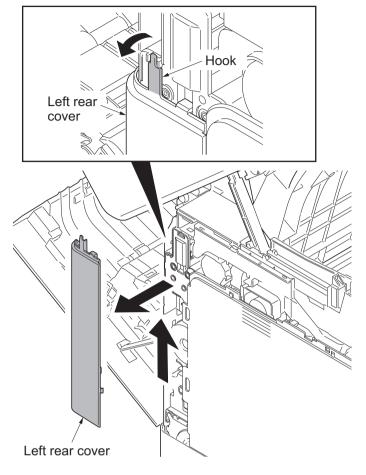


Figure 1-5-14

3. Release four hooks (hook A \rightarrow B) and then remove the left cover.

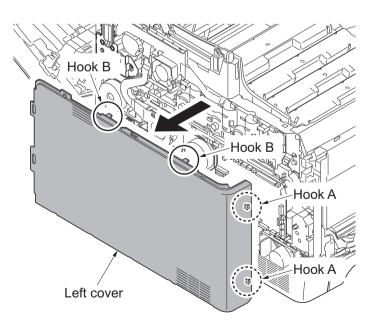


Figure 1-5-15

- 4. Remove the screw.
- 5. Release three hooks (hook $A \rightarrow B \rightarrow C$) and then remove the left lower cover.

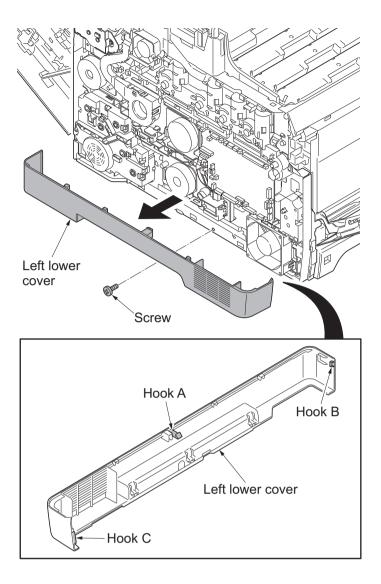


Figure 1-5-16

(4) Detaching and refitting the inner cover

Procedure

1. Remove the cassette.

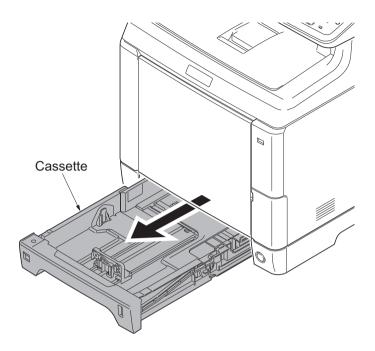


Figure 1-5-17

- 2. Remove the MP tray cover. (see page 1-5-17)
- 3. Remove the MP tray.

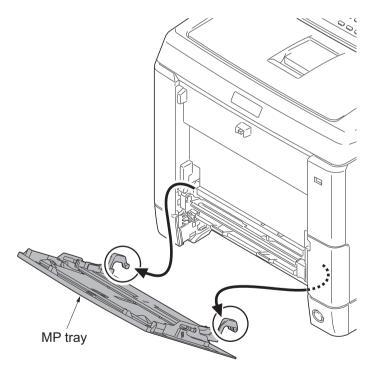
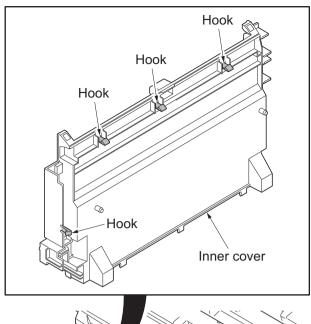


Figure 1-5-18

- 4. Remove the rear upper cover, right upper cover, left upper cover and front cover (see page 1-5-3).
- 5. Remove the right rear cover and right cover (see page 1-5-6).
- 6. Remove the left rear cover and left cover (see page 1-5-9).
- 7. Release three hooks and then remove the switch holder.
- 8. Release four hooks and then remove the inner cover.



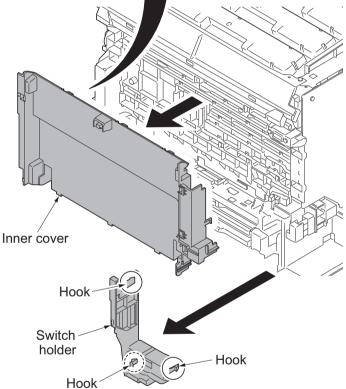


Figure 1-5-19

1-5-3 Paper feed section

(1) Detaching and refitting the retard roller unit

- 1. Open the paper conveying unit.
- 2. Pull the middle roller unit forward to the hook.
- 3. While pressing the right and left hooks outwards, unlatch the shaft from the rail and remove the middle roller unit.

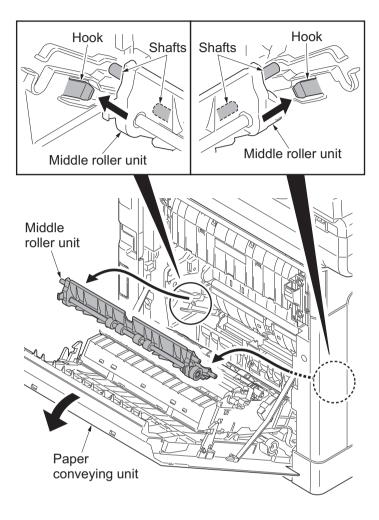


Figure 1-5-20

- 4. Pull the retard cover down and remove.
- 5. Release two hooks and then remove the retard roller unit.
- 6. Check or replace the retard roller unit and refit all the removed parts.

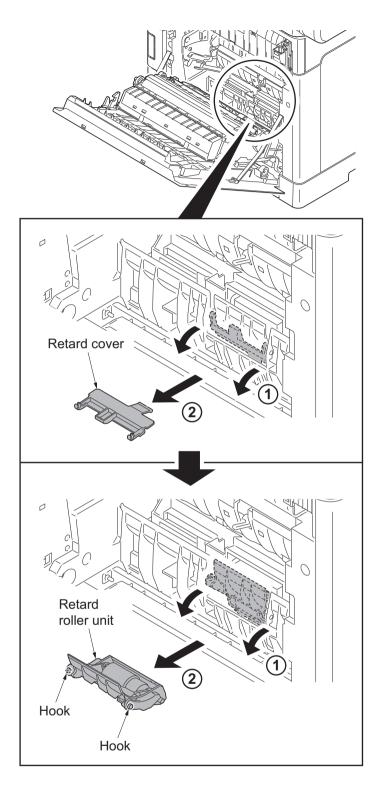


Figure 1-5-21

(2) Detaching and refitting the paper feed roller unit

- 1. Remove the retard roller unit (see page 1-5-13).
- 2. Turn forward the lever of the feed pin to release the lock.
- 3. Slide the feed pin.

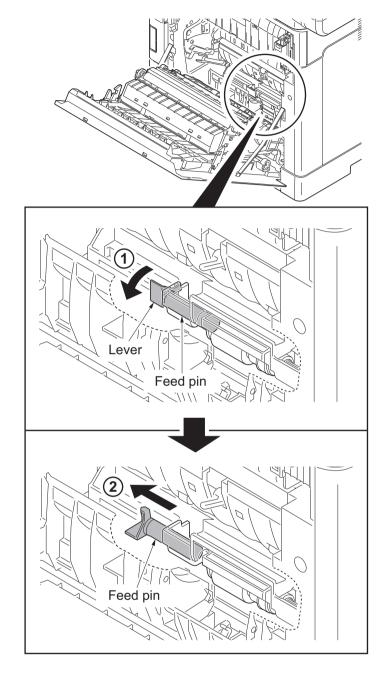


Figure 1-5-22

- 4. Remove the paper feed roller unit.
- 5. Check or replace the paper feed roller unit and refit all the removed parts.

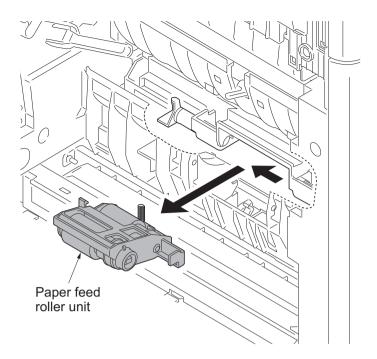


Figure 1-5-23

(3) Detaching and refitting the MP paper feed roller

Procedure

- 1. Remove the cassette.
- 2. Remove the guide sections of the MP tray cover from the MP tray.
- 3. Raise the MP tray cover upward. Release two hooks and then remove the MP tray cover.

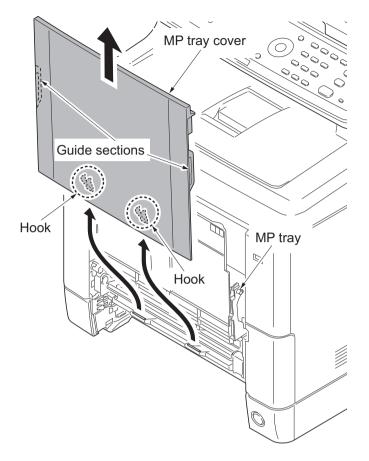


Figure 1-5-24

4. Open the conveying lower cover.

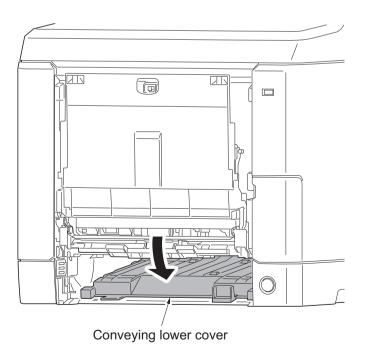


Figure 1-5-25

5. Remove two screws and then remove the MP paper feed lower unit.

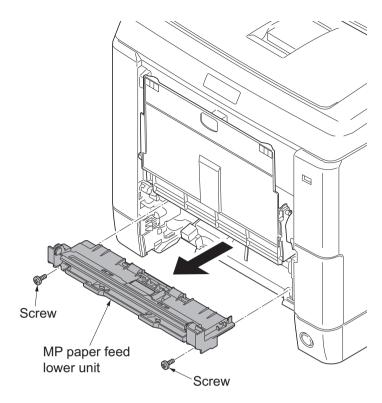


Figure 1-5-26

- 6. Pull the hook forward and then slide the MP feed shaft.
- 7. Remove the MP paper feed roller.
- 8. Check or replace the Mp paper feed roller and refit all the removed parts.

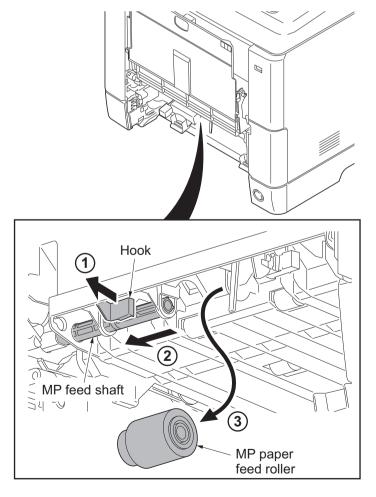


Figure 1-5-27

1-5-4 Developing section

(1) Detaching and refitting the developing unit

- 1. Remove the intermediate transfer unit (see page 1-5-22).
- 2. Remove drum units (K, M, C, Y).
- 3. Pinch the lever of developing unit.
- 4. Remove developing units (K, M, C, Y).

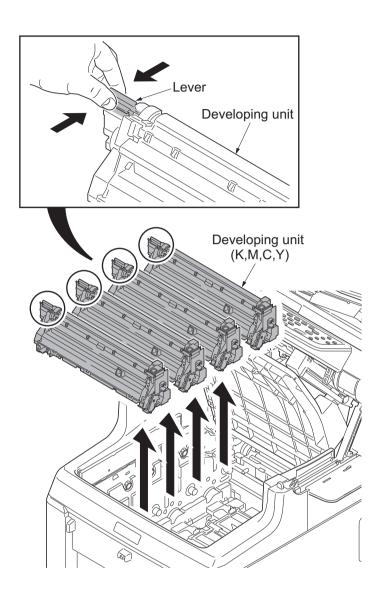
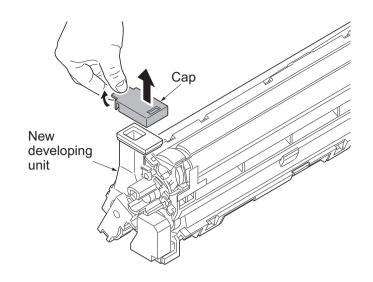


Figure 1-5-28

5. Check or replace the developing unit and refit all the removed parts.

NOTE:

- *: Remove the cap before installing the new developing unit.
- *: When reinstalling the developing unit, press it down until the lever of developing unit is engaged with the notch.
- *: If it is difficult to engage the lever, press the unit down while rotating the gear to engage it.



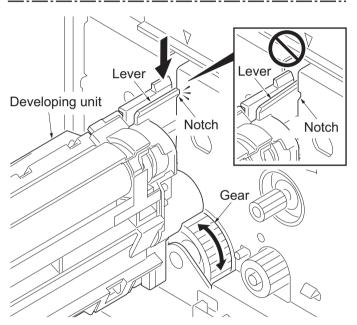


Figure 1-5-29

1-5-5 Drum section

(1) Detaching and refitting the drum unit

- 1. Remove the intermediate transfer unit (see page 1-5-22).
- 2. Remove drum units (K, M, C, Y).
- 3. Check or replace the drum unit and refit all the removed parts.

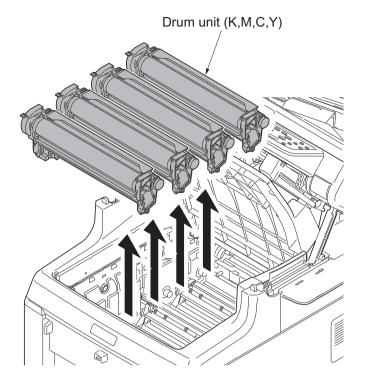


Figure 1-5-30

1-5-6 Transfer/Separation section

(1) Detaching and refitting the intermediate transfer unit

Procedure

- 1. Open the top tray and the paper conveying unit.
- 2. Remove toner containers (K, M, C, Y).

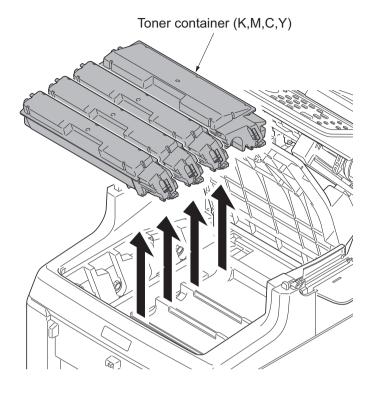


Figure 1-5-31

3. Slide the container guide forward and then remove it.

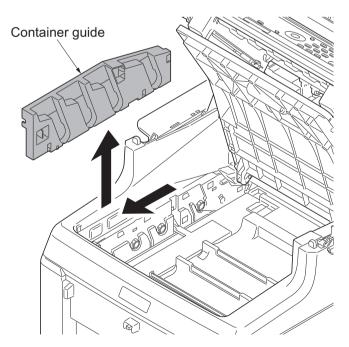


Figure 1-5-32

4. Open the RFID holder.

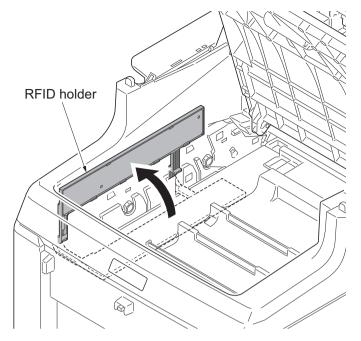


Figure 1-5-33

- 5. Slide the shutter forward and seal the toner inlet.
- 6. Remove the screw.

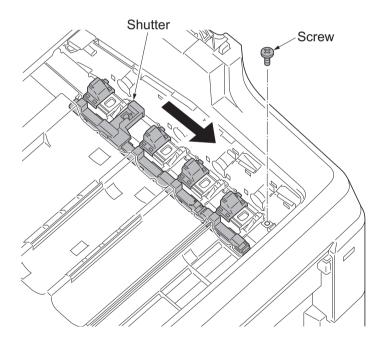


Figure 1-5-34

- 7. Remove the intermediate transfer unit.
- 8. Check or replace the intermediate transfer unit and refit all the removed parts.

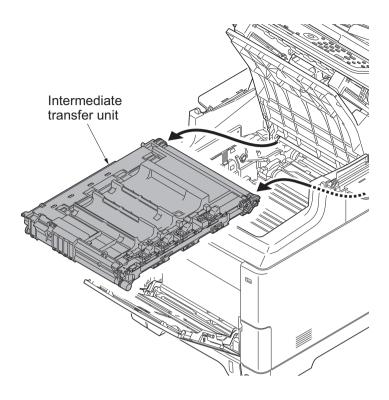


Figure 1-5-35

(2) Detaching and refitting the transfer roller unit

- 1. Open the paper conveying unit.
- 2. Release two hooks and then remove the transfer roller unit.
- 3. Check or replace the transfer roller unit and refit all the removed parts.

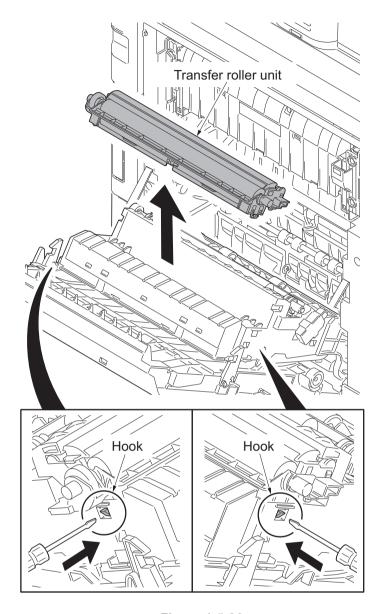


Figure 1-5-36

1-5-7 Fuser section

(1) Detaching and refitting the fuser unit

- 1. Open the paper conveying unit.
- 2. Remove the IF cover (see page 1-5-3).
- 3. Remove the screw and then fuser wire cover.

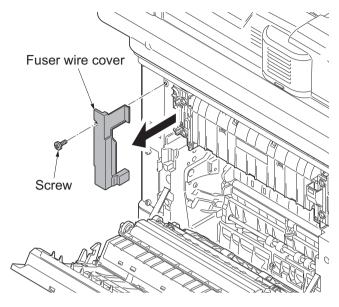


Figure 1-5-37

- 4. Remove three connectors.
- 5. Remove two screws and then remove the fuser unit.
- 6. Check or replace the fuser unit and refit all the removed parts.
- *: Take care not to get the cables caught.

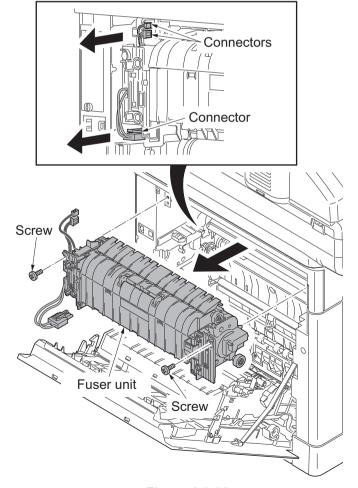


Figure 1-5-38

1-5-8 PWBs

(1) Detaching and refitting the engine PWB

- 1. Remove the left cover (see page 1-5-9).
- 2. Remove all connectors from the engine PWB.

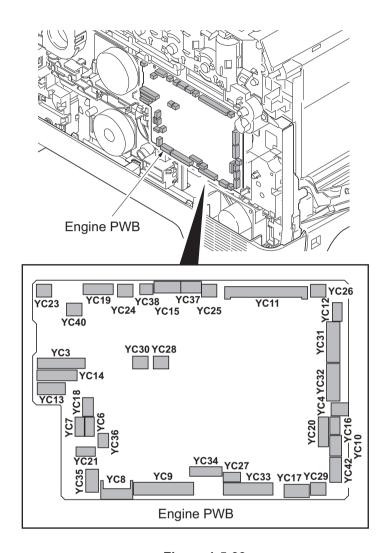


Figure 1-5-39

- 3. Remove three screws and then remove the engine PWB.
- 4. Check or replace the engine PWB and refit all the removed parts.
- *: To replace the engine PWB, remove the EEPROM (U1) from the old engine PWB and mount it to the new engine PWB.

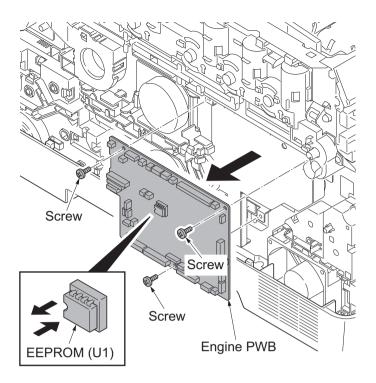


Figure 1-5-40

(2) Detaching and refitting the power source PWB

- 1. Remove the right rear cover, right cover and right lower cover (see page 1-5-6).
- 2. Remove four screws and then remove the power source shield.
 - Screws A and B are unidentical, therefore, do not mix up.

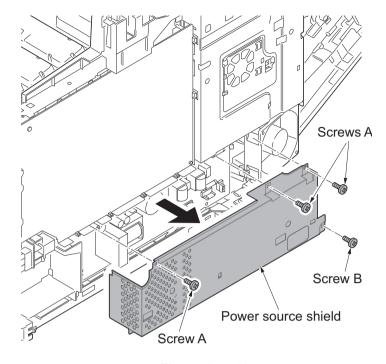


Figure 1-5-41

- 3. Remove all connectors from power source PWB.
- 4. Remove two screws.
- 5. Release three hooks and then remove the power source PWB.
- 6. Check or replace the power source PWB and refit all the removed parts.

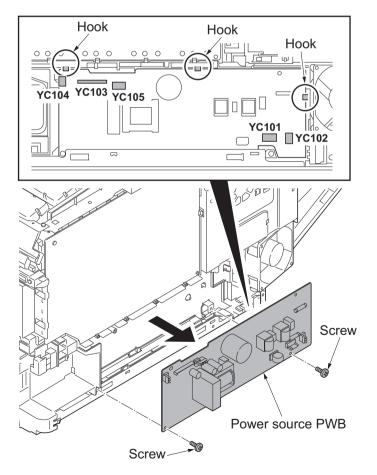


Figure 1-5-42

(3) Detaching and refitting the main PWB

- 1. Remove the FAX control PWB, if installed (see page 1-5-36).
- 2. Remove the right rear cover, right cover and right lower cover (see page 1-5-6).
- Remove four screws and then remove the power source shield.
 Screws A and B are unidentical, therefore, do not mix up.

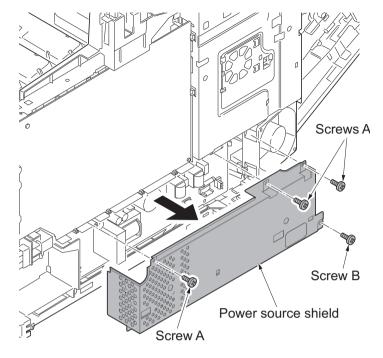


Figure 1-5-43

- 4. Open the fan bracket.
- 5. Slide the fan plate. Release four hooks and then remove the fan plate.

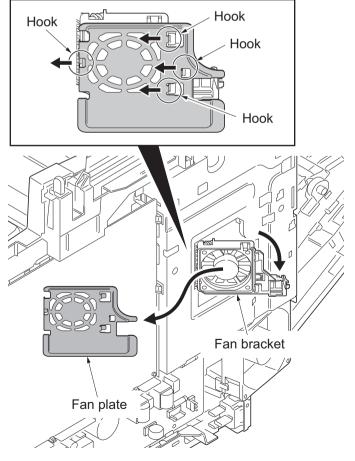


Figure 1-5-44

6. Remove the screw and then remove the fuser wire cover.

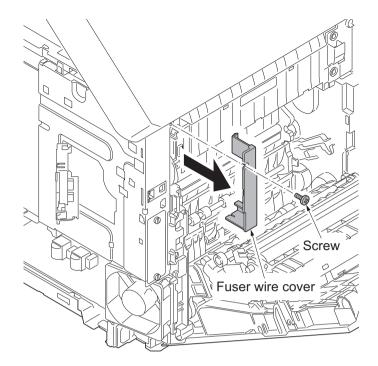


Figure 1-5-45

7. Remove five screws and then remove the controller shield.

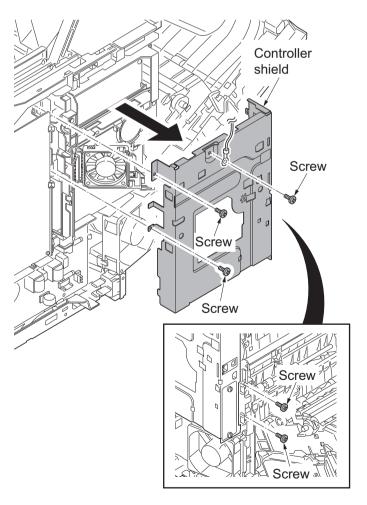


Figure 1-5-46

- 8. Remove the connector (YC41) of the controller fan motor.
- 9. Open the fan bracket and then remove it.

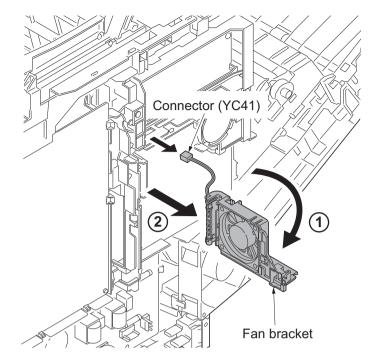


Figure 1-5-47

10. Remove seven connectors (YC15, YC37, YC41, YC40, YC38, YC39 and YC42) from the main PWB.

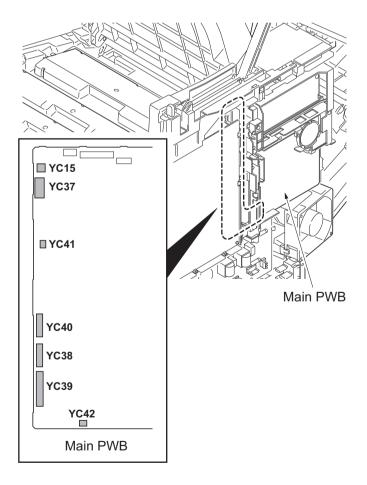


Figure 1-5-48

- 11. Remove two screws.
- 12. Release three hooks and then remove the wire holder.

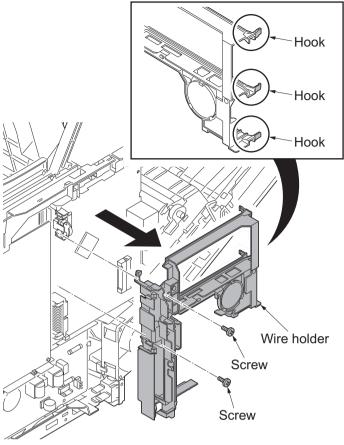


Figure 1-5-49

13. Remove three connectors (YC36, YC32, YC12) and two FFCs (YC8, YC43) from the main PWB.

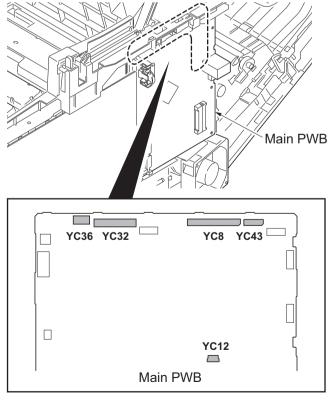


Figure 1-5-50

- 14. Remove five screws and then remove the main PWB.
- 15. Check or replace the main PWB and refit all the removed parts.

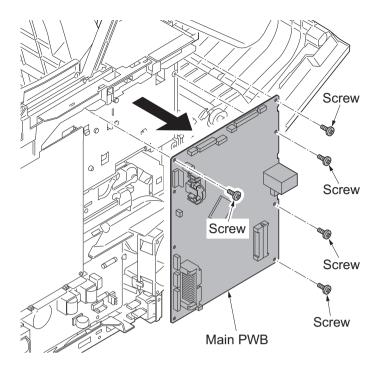


Figure 1-5-51

(4) Detaching and refitting the high voltage PWB

- 1. Remove the right rear cover and right cover (see page 1-5-6).
- 2. Remove the FFC from the high voltage PWB.

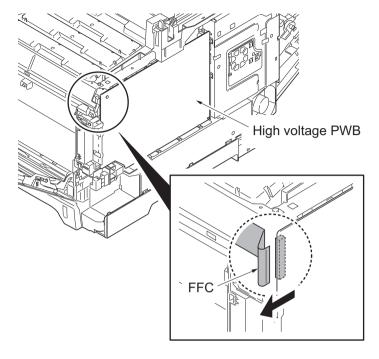


Figure 1-5-52

- 3. Remove the screw.
- 4. Release eight hooks and then remove the high voltage PWB.
- 5. Check or replace the high voltage PWB and refit all the removed parts.

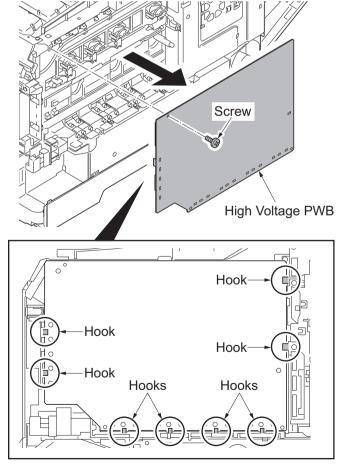


Figure 1-5-53

(5) Detaching and refitting the FAX control PWB (4 in 1 model (with FAX) only)

- 1. Remove the IF cover (see page 1-5-3).
- 2. Remove two screws and then remove the FAX control PWB.
- 3. Check or replace the FAX control PWB and refit all the removed parts.

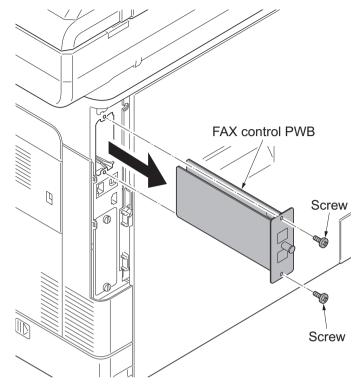


Figure 1-5-54

1-5-9 Drive section

(1) Detaching and refitting the MP feed drive unit

Procedure

- 1. Remove the rear upper cover, right upper cover, left upper cover and front cover (see page 1-5-3).
- 2. Remove the right rear cover and right cover (see page 1-5-6).
- 3. Remove the left rear cover, left cover and left lower cover (see page 1-5-9).
- 4. Remove the inner cover (see page 1-5-11).
- 5. Remove the engine PWB (see page 1-5-27).
- 6. Release three hooks and then remove the left fan motor.

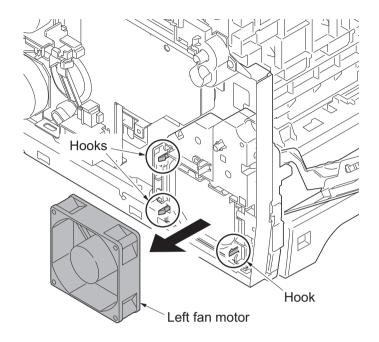


Figure 1-5-55

- 7. Turn the cam inside the device to the position indicated.
- 8. Remove three screws and then remove MP feed drive unit.
- 9. Check or replace the MP feed drive unit and refit all the removed parts.

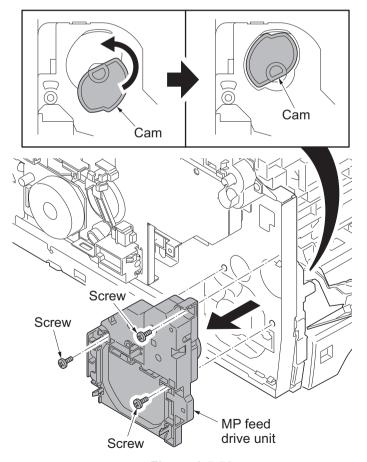
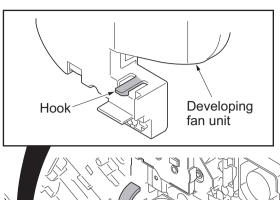


Figure 1-5-56

(2) Detaching and refitting the drum/developing drive unit

Procedure

- 1. Remove drum units (K, M, C, Y) and developing units (K, M, C, Y) (see page 1-5-21, 19).
- 2. Remove the rear upper cover, right upper cover, left upper cover and front cover (see page 1-5-3).
- 3. Remove the left rear cover, left cover and left lower cover (see page 1-5-9).
- 4. Remove the engine PWB (see page 1-5-27).
- 5. Remove the screw and release the hook, and then remove the developing fan unit.



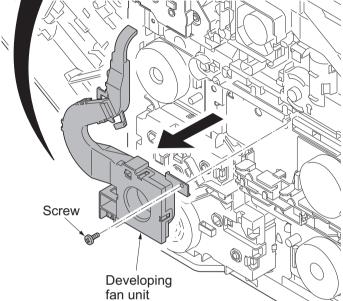


Figure 1-5-57

6. Remove the screw and then remove the ID guide.

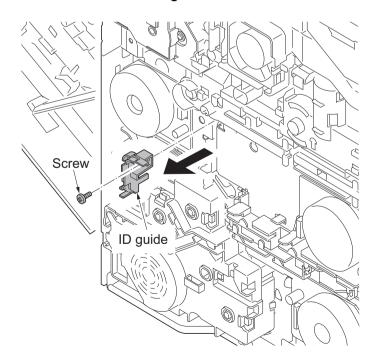


Figure 1-5-58

- 7. Remove five screws and then remove drum/developing drive unit.
- 8. Check or replace the drum/developing drive unit and refit all the removed parts.

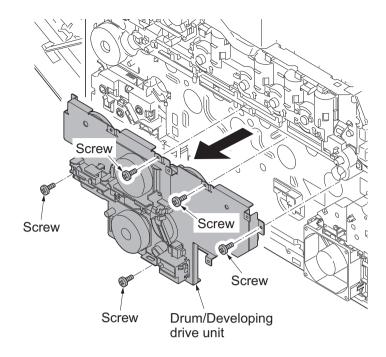


Figure 1-5-59

(3) Detaching and refitting the paper feed drive unit

Procedure

- 1. Remove the rear upper cover, right upper cover, left upper cover and front cover (see page 1-5-3).
- 2. Remove the left rear cover, left cover and left lower cover (see page 1-5-9).
- 3. Remove connector (YC3) from engine PWB.

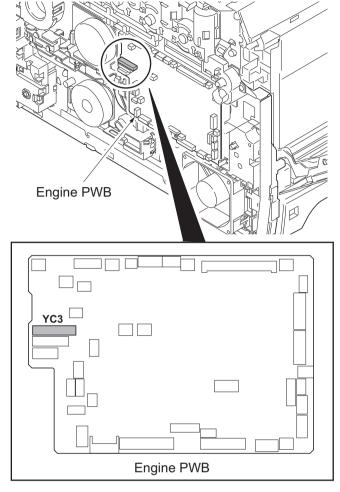


Figure 1-5-60

- 4. Remove four screws and then remove the paper feed drive unit.
- 5. Check or replace the paper feed drive unit and refit all the removed parts.

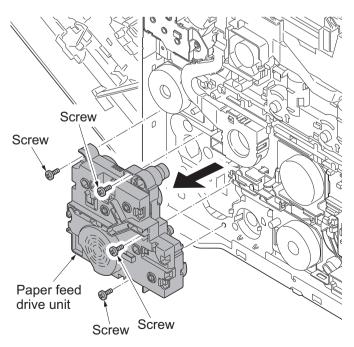


Figure 1-5-61

(4) Detaching and refitting the fuser pressure drive unit

Procedure

- 1. Remove the fuser unit (see page 1-5-26).
- 2. Remove the rear upper cover, right upper cover, left upper cover and front cover (see page 1-5-3).
- 3. Remove the left rear cover and left cover (see page 1-5-9).
- 4. Remove connector (YC38) from engine PWB.

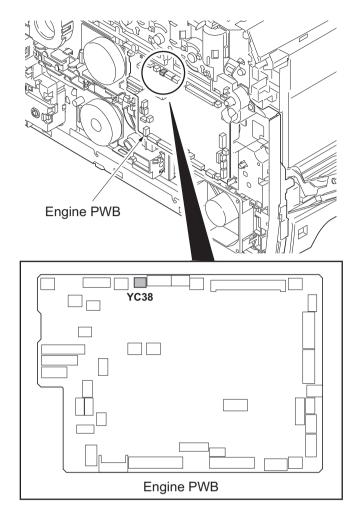


Figure 1-5-62

- 5. Remove the developing fan unit (see page 1-5-38).
- 6. Remove three screws.
- 7. Release two hooks remove the fuser pressure drive unit.
- 8. Check or replace the fuser pressure drive unit and refit all the removed parts.

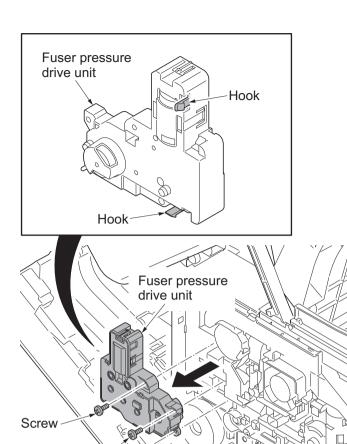


Figure 1-5-63

Screws

(5) Detaching and refitting the middle transfer drive unit

Procedure

- 1. Remove the intermediate transfer unit (see page 1-5-22).
- 2. Remove the rear upper cover, right upper cover, left upper cover and front cover (see page 1-5-3).
- 3. Remove the left rear cover and left cover (see page 1-5-9).
- 4. Remove the fuser pressure drive unit (see page 1-5-41).
- 5. Remove connector (YC15) from engine PWB.

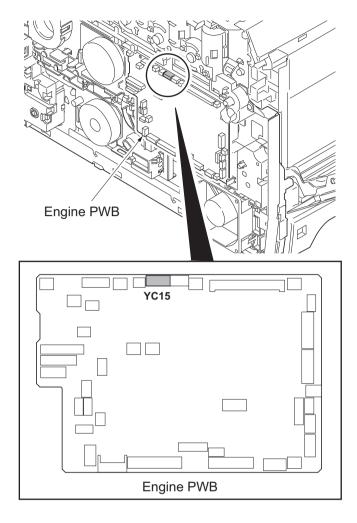


Figure 1-5-64

6. Remove the screw and then remove the ID guide.

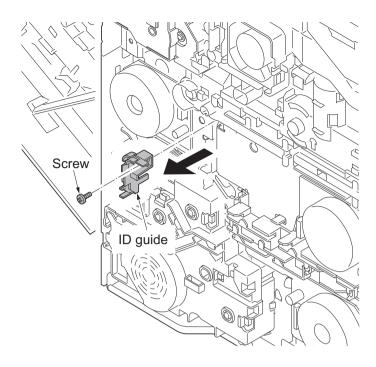


Figure 1-5-65

- 7. Remove three screws and then remove the middle transfer drive unit.
- 8. Check or replace the middle transfer drive unit and refit all the removed parts.

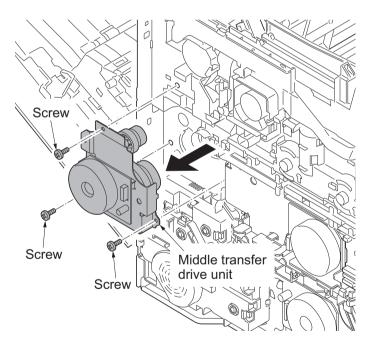


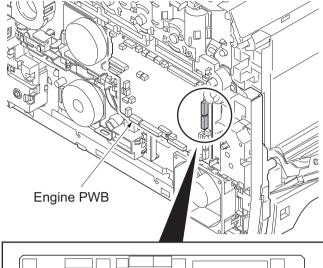
Figure 1-5-66

1-5-10 Optical section

(1) Detaching and refitting the laser scanner unit

Procedure

- 1. Remove the intermediate transfer unit (see page 1-5-22).
- 2. Remove drum units (K, M, C, Y) and developing units (K, M, C, Y) (see page 1-5-21, 19).
- 3. Remove the rear upper cover, right upper cover, left upper cover and front cover (see page 1-5-3).
- 4. Remove the left rear cover and left cover (see page 1-5-9).
- 5. Remove two connectors (YC32, YC32) from engine PWB.



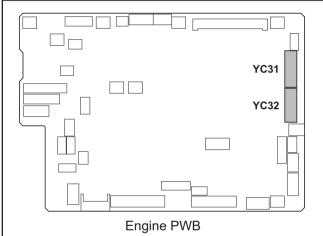


Figure 1-5-67

6. Draw two connectors (YC31, YC32) into the machine inside.

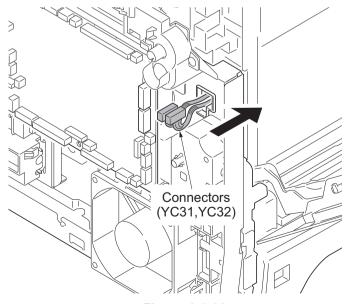


Figure 1-5-68

- 7. Remove the right rear cover, right cover and right lower cover (see page 1-5-6).
- 8. Remove the controller shield (see page 1-5-30).
- 9. Remove two connectors (YC38, YC40) from main PWB.

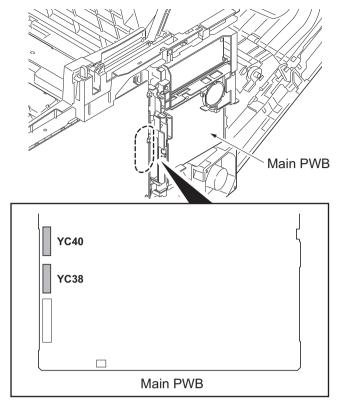


Figure 1-5-69

10. Draw two connectors (YC38, YC40) into the machine inside.

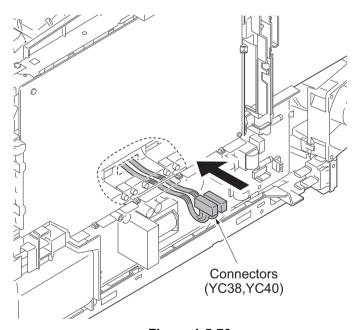


Figure 1-5-70

- 11. Remove each three screws and then remove laser scanner unit (KM, CY).
- 12. Check or replace the laser scanner unit and refit all the removed parts.

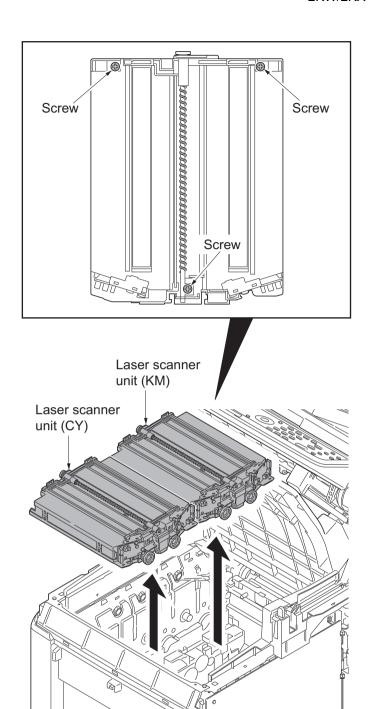


Figure 1-5-71

(2) Detaching and refitting the scanner unit

Procedure

- 1. Remove the document processor (see page 1-5-78).
- 2. Remove the connector (YC36) and two FFCs (YC8, YC43) from main PWB.
- 3. Open the scanner unit.

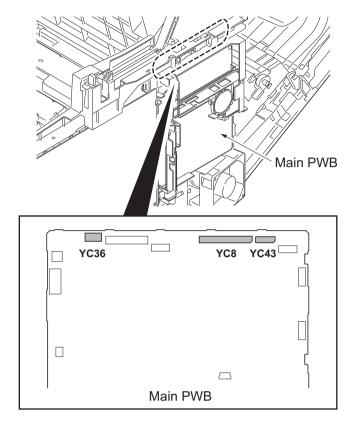


Figure 1-5-72

4. Remove the motor wire, CCD wire and LCD wire from the wire holder.

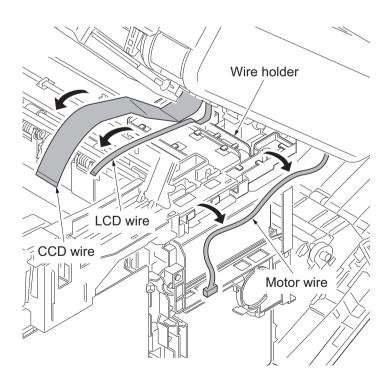


Figure 1-5-73

5. Release each four hooks and then remove left and right rails.

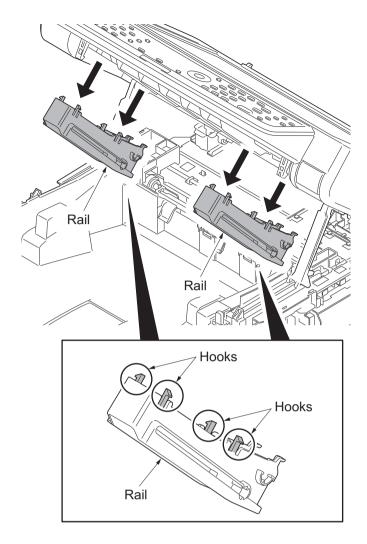


Figure 1-5-74

6. Remove two springs from left and right rails.

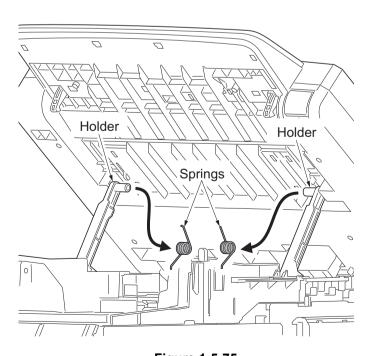


Figure 1-5-75

7. Remove left and right rails from the scanner unit.

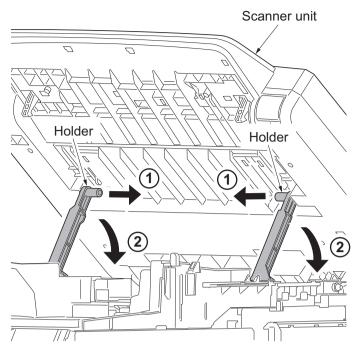


Figure 1-5-76

8. Remove left and right washers and springs and then pull pins out.

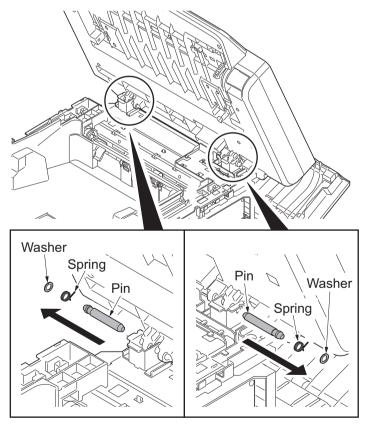


Figure 1-5-77

9. Remove the scanner unit.

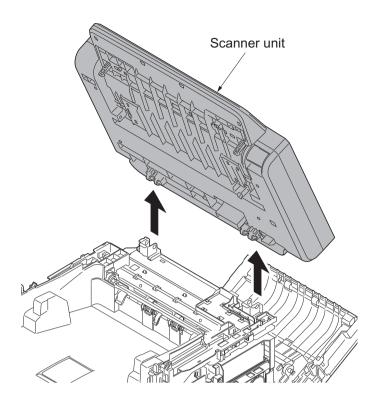


Figure 1-5-78

(3) Detaching and refitting the image scanner unit

Procedure

(Detach the covers)

- 1. Open the paper conveying unit.
- 2. Release the hook and then remove the IF cover.

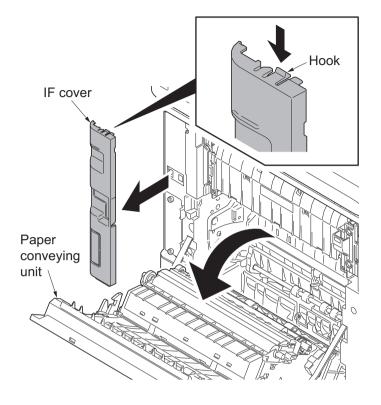


Figure 1-5-79

3. Remove two screws and then remove the rear uppercover.

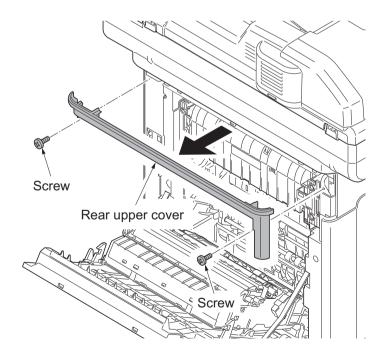


Figure 1-5-80

- 4. Pull the inner tray lever and open the inner tray.
- 5. Release two hooks. Slide the right upper cover backward and then remove it.

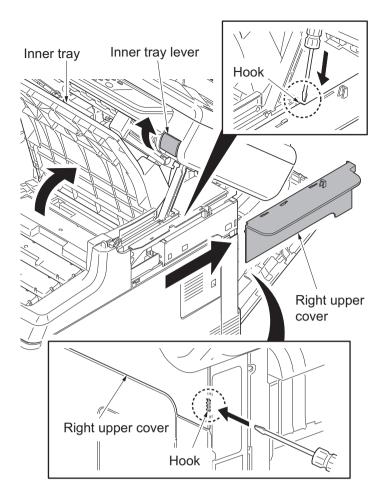


Figure 1-5-81

6. Release the hook. Slide the left upper cover backward and then remove it.

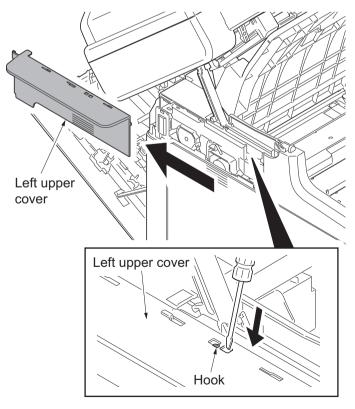


Figure 1-5-82

7. Release five hooks (hook $A \rightarrow B$) and then remove the front cover.

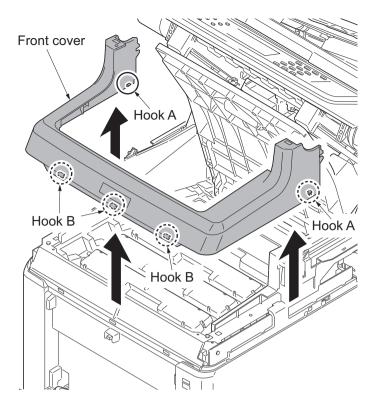


Figure 1-5-83

8. Slide the power source cover backward and then remove it.

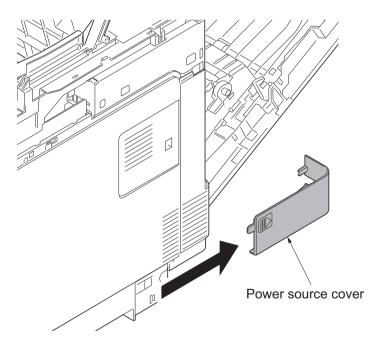


Figure 1-5-84

- 9. Remove the screw.
- 10. Release four hooks. Slide the right rear cover backward and then remove it.

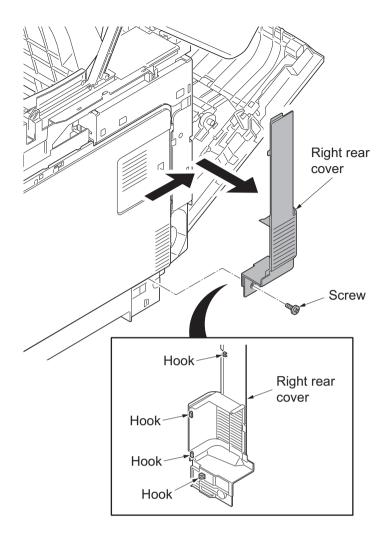


Figure 1-5-85

11. Open the memory cover and then remove it.

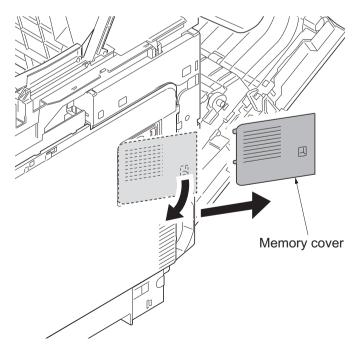


Figure 1-5-86

- 12. Open the waste toner cover.
- 13. Push the lock release button and then remove the waste toner box.(Close the cap of the waste toner box.)

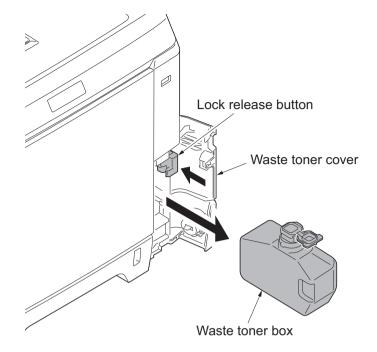


Figure 1-5-87

- 14. Open the MP tray.
- 15. Release four hooks (hook $A \rightarrow B \rightarrow C$). Slide the right cover forward and then remove it.
- 16. Remove the waste toner cover.

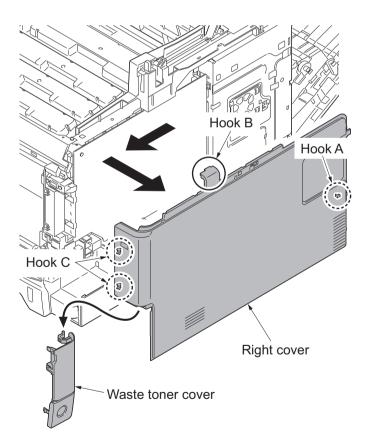


Figure 1-5-88

17. Release the hook. Slide the right lower coverforward and then remove it.

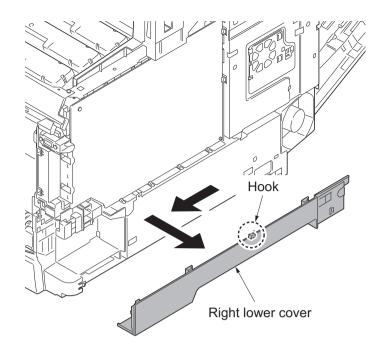


Figure 1-5-89

(Fully open the Document Processor and the scanner unit.)

18. Remove the left and right pins by pushing the pins out from inside while opening the top tray till the half way of the opening angle. (After this procedure, the top tray goes down and only the scanner unit opens.)

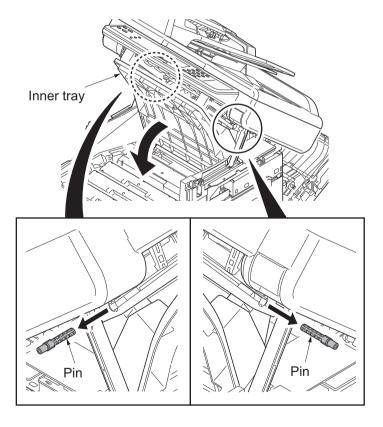


Figure 1-5-90

19. Release each four hooks and remove the left and right rails.

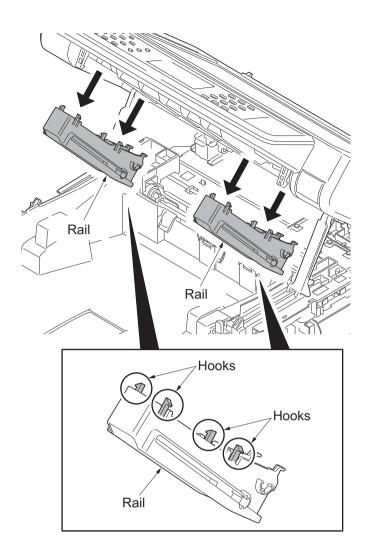


Figure 1-5-91

20. Remove two springs from the left and right holders.

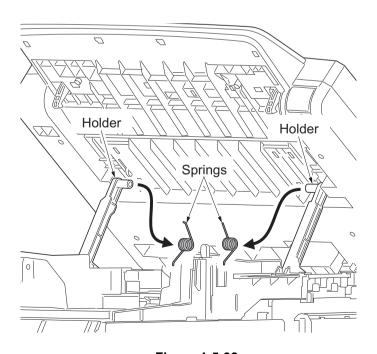
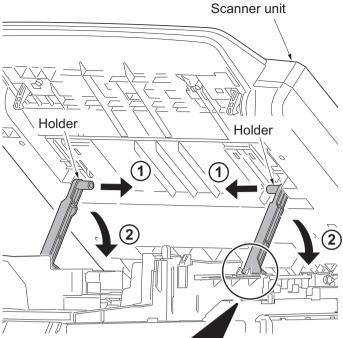


Figure 1-5-92

21. Remove left and right holders from the scanner unit.



*: When reattaching the holders in the scanner unit, assemble the parts so that the holders are in front of the triangle ribs of the ISU frame.

(If the holders are behind the triangle ribs, the scanner unit cannot be closed.)

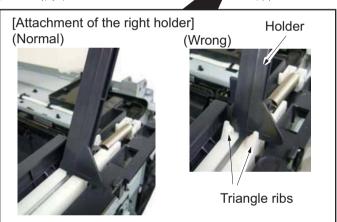


Figure 1-5-93

22. Release four hooks and remove the upper middle cover.

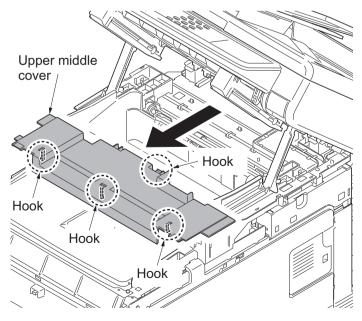


Figure 1-5-94

(Detach the high voltage PWB (HVU PWB).)

- 23. Remove the screw.
- 24. Release four hooks of the upside of the PWB circled in the figure and slant the upside of the high voltage PWB like opening it, and then remove the FFC.
- 25. After surely slanting the high voltage PWB till ninety degree, pull it out toward the machine right side.
 - *: If trying to pull out the PWB on the way of slanting till ninety degree, the hooks securing the PWB's low side may damage. (The hooks are circled at the figure.)

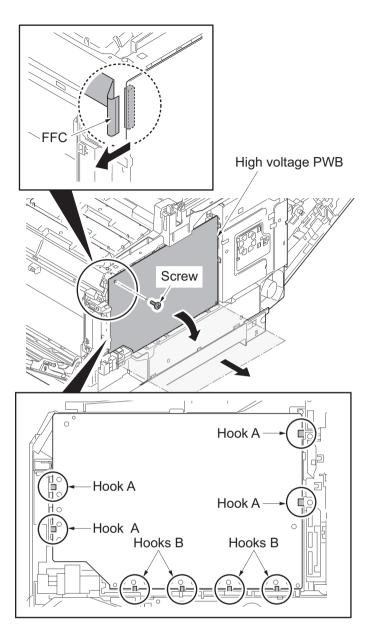
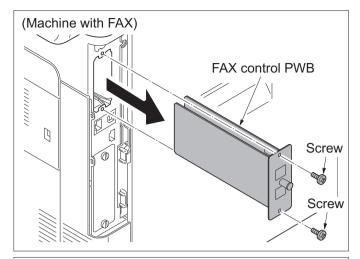


Figure 1-5-95

(Disconnect the connectors on the main PWB.)

[For the machine with FAX]

26. Remove two screws and then remove the FAX control PWB.



[For the machine with the hard disk or the network interface card]

27. Remove two pins and then pull out the hard disk or the network interface card.

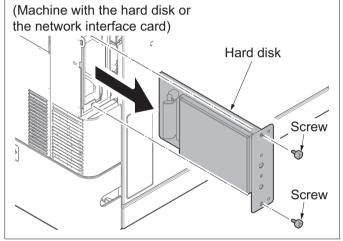


Figure 1-5-96

- 28. Remove four screws and then remove the power source shield.
 - *: Screws A and B are unidentical, Thus, do not mix up.

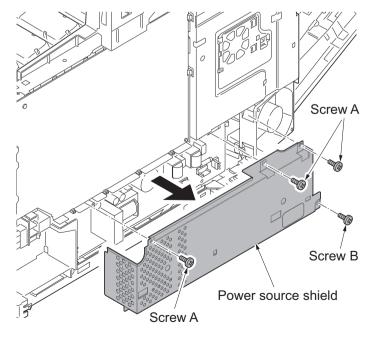


Figure 1-5-97

- 29. Pick up the hook A and then open the fan bracket.
- 30. Release the hook B and slide the fan plate to release the remaining three hooks, and then remove it.

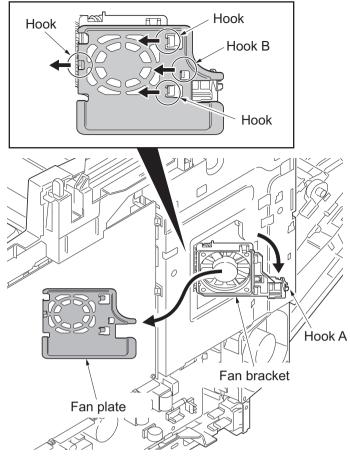


Figure 1-5-98

- 31. Remove the screw and remove the fuser wire cover.
- 32. Remove the cap.

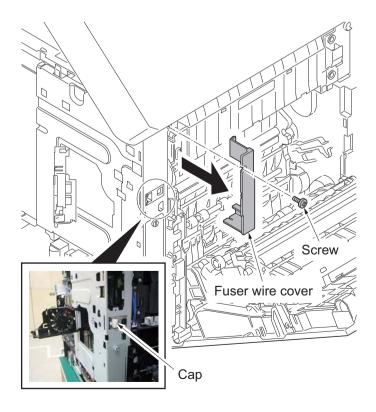


Figure 1-5-99

33. Remove five screws and the controller shield.

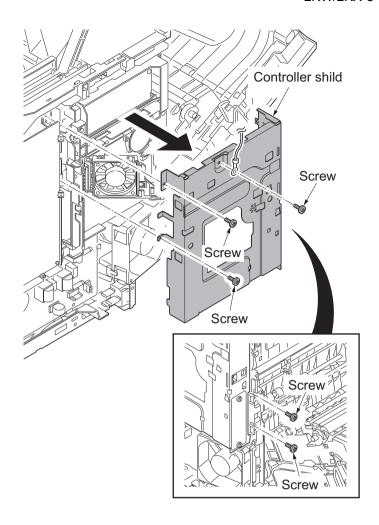


Figure 1-5-100

- 34. Disconnect the connector (YC41) of the controller fan motor.
- 35. Open the fan bracket and remove it.

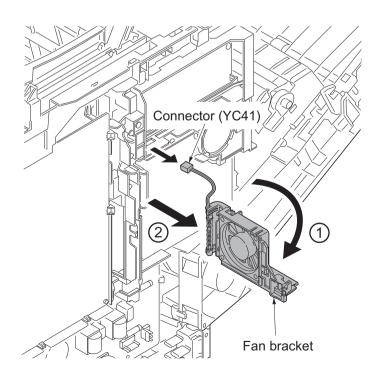


Figure 1-5-101

- 36. Disconnect the connectors (YC15, YC37, YC40,YC38, YC39, YC42) from the main PWB.
- 37. Loosen four screws fixing the machine rear side of the main PWB.
 - *: Be sure to retighten the screws after reattaching the wire holder.

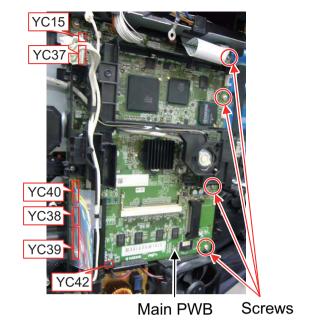


Figure 1-5-102

- 38. Remove the wires from the wire holder.
- 39. Remove two screws.
- 40. Release three hooks and then remove the wire holder.

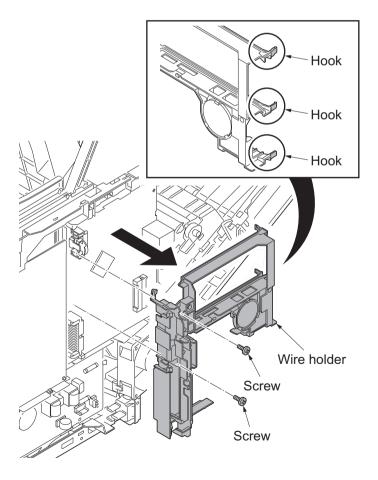


Figure 1-5-103

- 41. Disconnect the FFC wire at the connector YC8 on the main PWB.
 - *: Reconnect the connectors on the main PWB before reattaching the wire holder detached at Step 40.

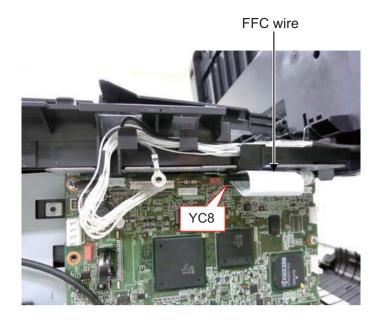


Figure 1-5-104

42. Remove the wire holder and the ferrite core.

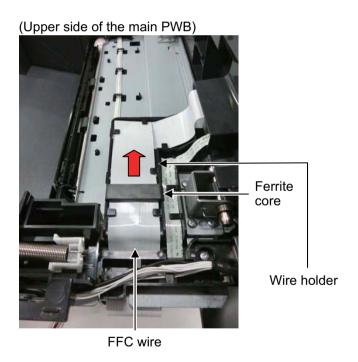


Figure 1-5-105

43. Reattach the left and right holders in a reverse manner of removal at Step 20, 21.

Close the Document Processor and the scanner unit.

(Remove the ISU cover.)

44. Open the DP top cover and remove the screw fixing the DP rear cover.

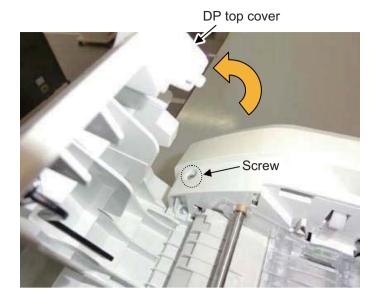


Figure 1-5-106

45. Open the Document Processor and release two hooks fixing the original tray.

And close the Document Processor.

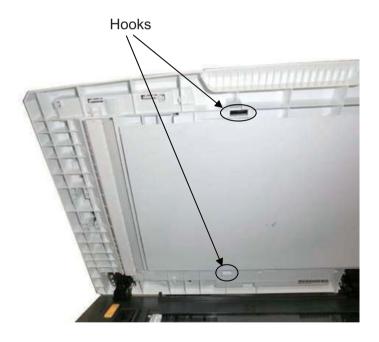


Figure 1-5-107

46. Slide the cursors to the center of the original tray and lift up the original tray.

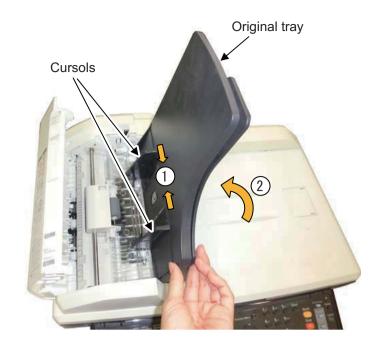


Figure 1-5-108

- 47. Release three hooks in the machine rear side of the DP rear cover. (in the order of hook $A \to B \to C$) Release the hook D and E at the machine front side while rotating the DP rear cover in the arrow's direction and then remove it.
 - *: Release the hook A, B and C while pressing the upper part of the hook to prevent the hook from breaking.

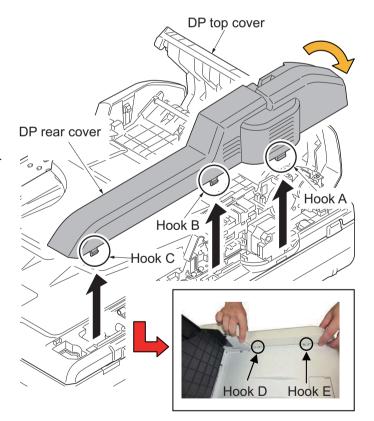


Figure 1-5-109

48. Remove two screws and disconnect two connectors from the DP drive PWB.

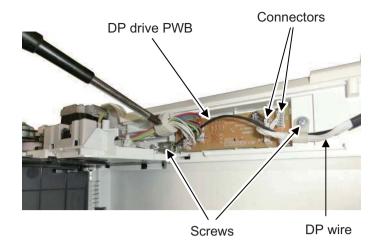


Figure 1-5-110

49. Press the DP lock lever through the hole at the bottom right side of the scanner unit by inserting a screwdriver, etc., and open the Document Processor.

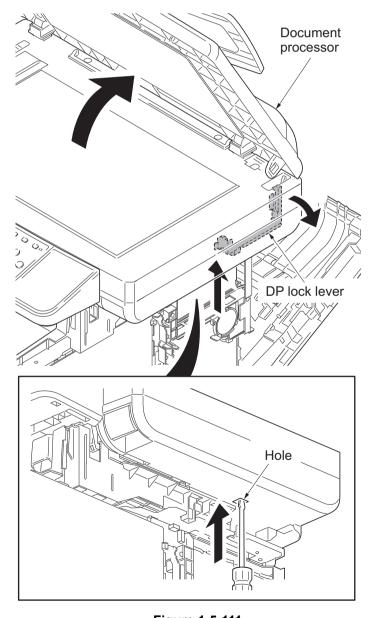


Figure 1-5-111

50. Remove the wire cover.

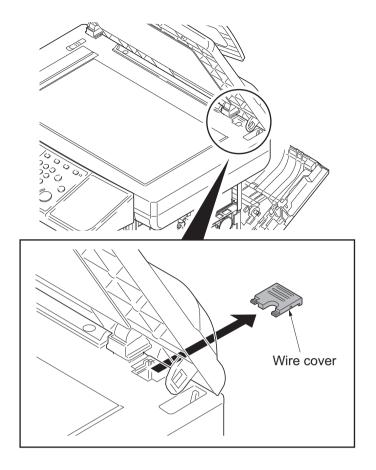


Figure 1-5-112

51. Detach the Document Processor.

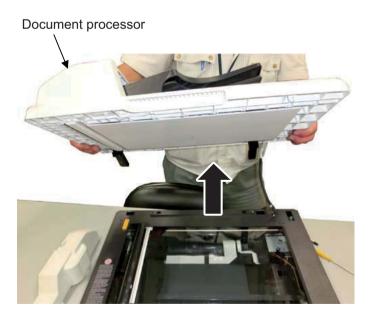
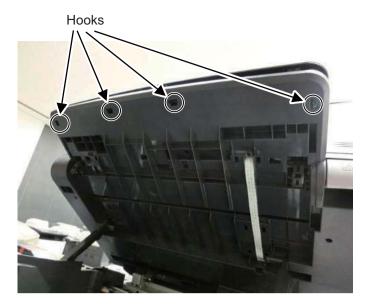
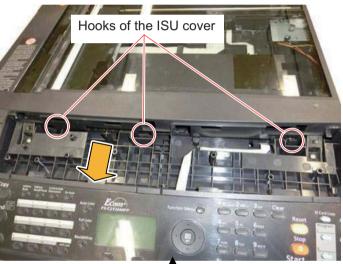


Figure 1-5-113

52. Open the scanner unit and release four hooks, and then forward slide the operation cover.





Operation cover

Figure 1-5-114

- 53. Remove two screws at the machine rear side and release three hooks under the operation cover. Remove the ISU cover while pushing the DP lock lever to the right using a flat-blade screw driver.
 - *: Do not touch the inner side of the contact glass removed with the ISU cover. (Dirt adhered triggers the abnormal image.)

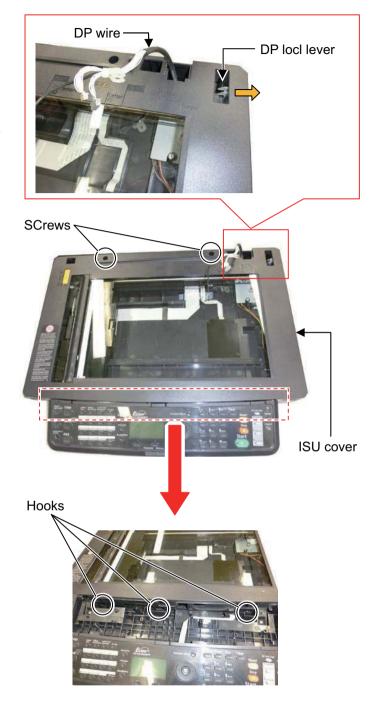


Figure 1-5-115

(Detaching the ISU)

- 54. Lift up the machine right end of the shaft to come off from the locking hole of the scanner frame, and then pull out the shaft in the machine right direction.
 - *: Confirm the end of the ground spring surely fits the groove F of the shaft when reattaching.



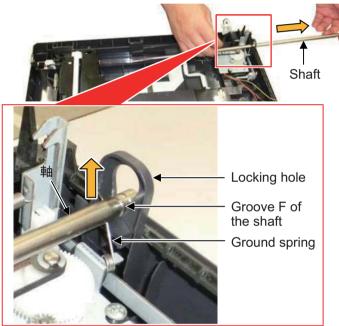


Figure 1-5-116

55. Slightly lift up the ISU and remove the ISU drive belt from the groove locking the ISU drive belt.

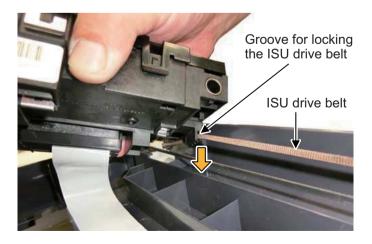


Figure 1-5-117

56. Remove the FFC wire connecting to the ISU from the wire alignment part in the scanner unit.

Take off the bending part of the FFC wire from the two double-sided tapes on the wire alignment part.

Detach the ISU.

Then, peel off the double-sided tapes and clean the affixing part to remove the adhesive.

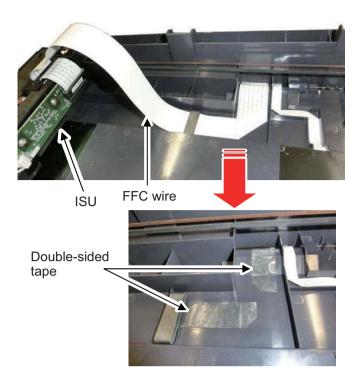
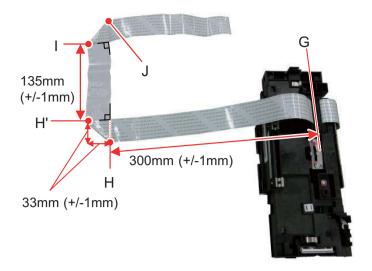


Figure 1-5-118

(Attaching the new ISU)

- 57. Fold the FFC wire of the new ISU with the alignment to the right.
- (1)Fold the FFC wire in 90 degrees at 300mm from Alignment **G** at the edge of the holder passing the FFC wire to make Alignment **H**.
 - (Or, fold it in 90 degrees on the line connecting the Alignment **H** and Alignment **H'** at 33mm from **H**.)
- (2)Fold it in 90 degrees at Alignment I at 135mm from the Alignment H' to make Alignment J.



- (3)Fold the FFC wire in 180 degrees at the Alignment **J**.

 (The reference length from the
 - Alignment **J** to the wire's edge is about 195mm.)
- (4)Unfold the FFC wire to easily pass the FFC wire through the ferrite core at the next step.

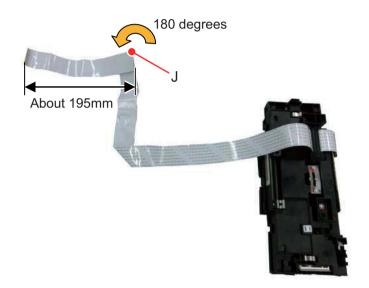
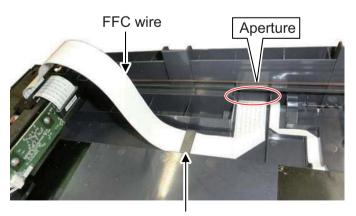


Figure 1-5-119

58. Pass the ISU's FFC wire through the ferrite core affixed on the scanner frame and then pass its edge through the aperture in the center of the scanner frame.



Ferrite core

Figure 1-5-120

59. Fit the ISU drive belt to the groove at the ISU bottom side.

Confirm the teeth of the ISU drive belt face the machine front side before fitting as above.

After fitting, confirm the ISU drive belt and the ISU are connected by horizontally shifting the ISU (in the red arrow's direction in the figure).

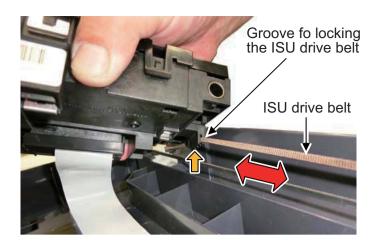
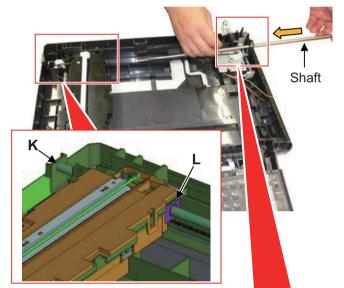


Figure 1-5-121

60. Pass the shaft removed at Step 54 through the holes (**K**, **L**) of the scanner frame's machine left side and the ISU's machine rear side, and then fit the groove of the shaft to the locking hole of the scanner frame's machine right side.



*: After that, confirm the edge of the ground spring is fitted to the groove (**F**) of the shaft.

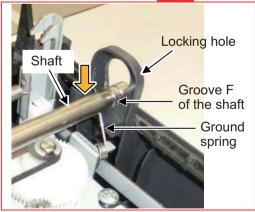
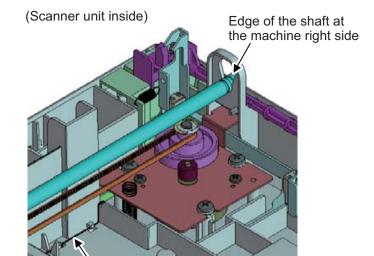


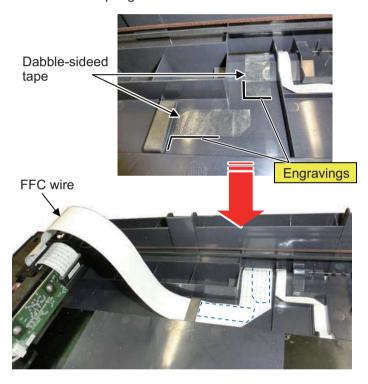
Figure 1-5-122

61. Confirm the conductivity between the ground spring M and the machine right side's edge of the shaft.(Electric resistance: 10Ω or less)



Ground spring M

- 62. Affix two double-sided tapes bundled in the ISU for service while aligning their edges to the engravings on the scanner frame.
- 63. Affix the ISU side's folding part of the FFC wire to the double-sided tapes.



64. Refit the ISU cover and the operation cover in the reverse procedures of removal.

Figure 1-5-123

(Align the FFC wire at the main PWB side.)

65. Remove the left and right holders of the scanner unit at Step 20, 21 and fully open the scanner unit.

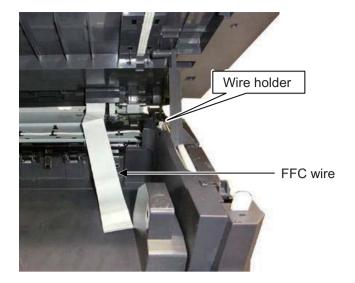


Figure 1-5-124

66. Align the FFC wire like the figure to the right.

(Seven alignment ribs and one ferrite core)

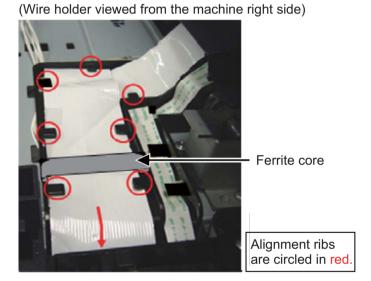
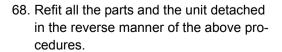


Figure 1-5-125

67. Insert the end of the FFC wire into the connector YC8 on the main PWB.



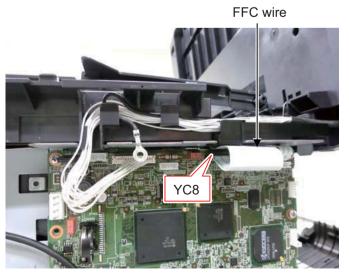


Figure 1-5-126

1-5-11 Document processor

(1) Detaching and refitting the document processor

Procedure

- 1. Remove the rear upper cover, right upper cover, left upper cover and front cover (see page 1-5-3).
- 2. Remove left and right pins and then close the top tray.

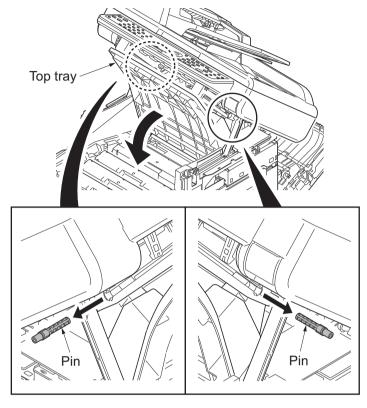


Figure 1-5-127

3. Release four hooks and then remove the upper middle cover.

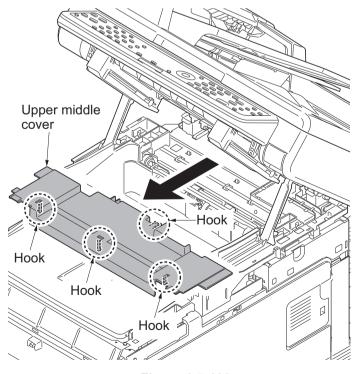


Figure 1-5-128

- 4. Remove the right rear cover, right cover and right lower cover (see page 1-5-6).
- 5. Remove the controller shield (see page 1-5-30).
- 6. Remove connector (YC32) from main PWB.

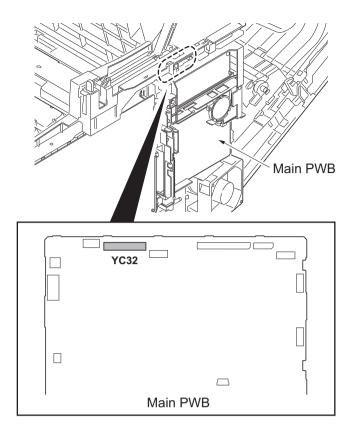


Figure 1-5-129

- 7. Cut the band and then remove the it.
- 8. Remove the DP wire and ground wire from wire holder.
- 9. Close the scanner unit.

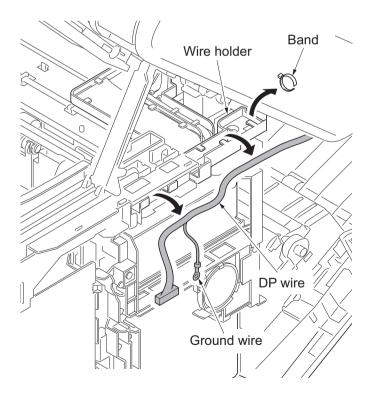


Figure 1-5-130

10. Press the DP lock lever through the hole at the bottom right side of the scanner unit, and open the document processor.

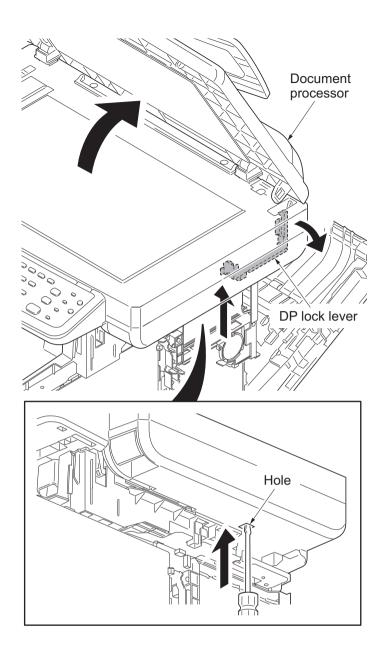


Figure 1-5-131

11. Remove the wire cover.

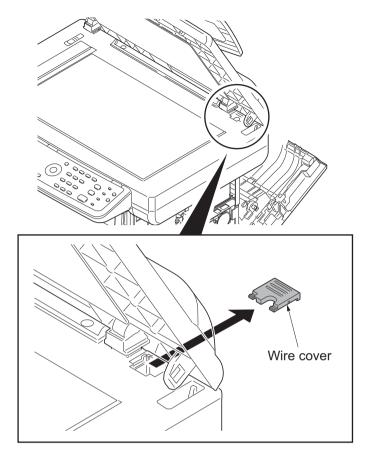


Figure 1-5-132

12. Remove the document processor.

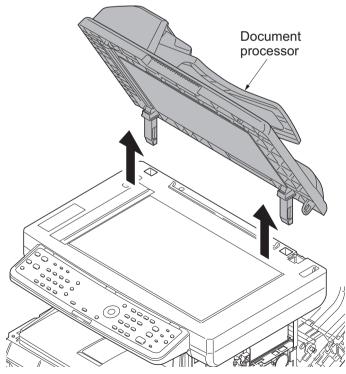


Figure 1-5-133

(2) Detaching and refitting the DP paper feed pulley unit

Procedure

- 1. Open the DP top cover.
- 2. Remove the screw.
- 3. Release three hooks and then remove the DP rear cover.

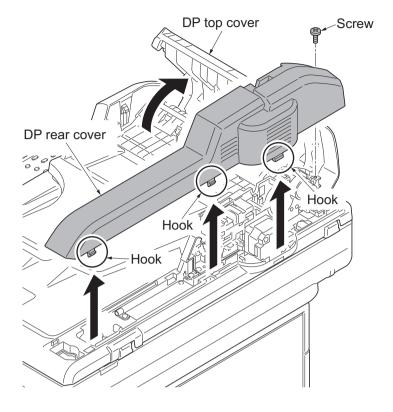


Figure 1-5-134

4. Release two hooks and then remove the DP front cover.

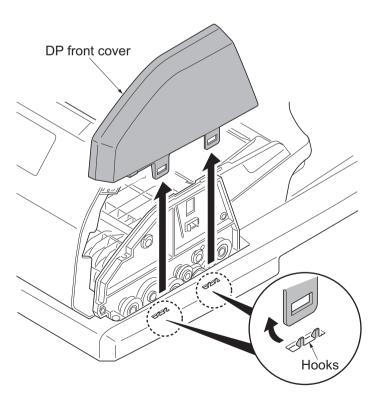


Figure 1-5-135

5. Remove the stop ring and bush.

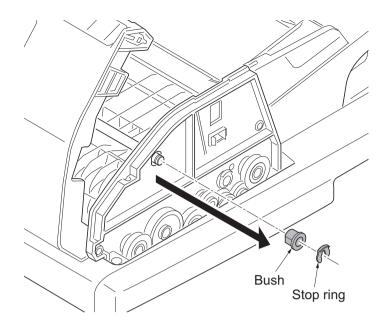


Figure 1-5-136

- 6. Remove the stop ring A and then remove the DP paper feed clutch from the PF shaft.
- 7. Remove the stop ring B and then remove the PF collar, spring, spring collar, pin and bush from the PF shaft.

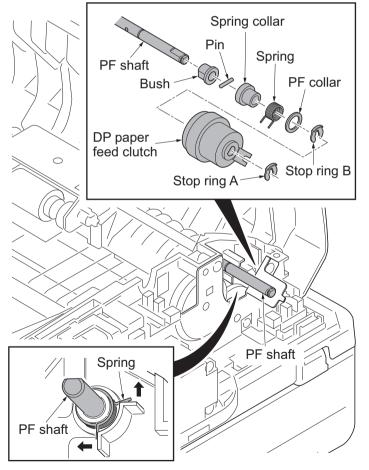


Figure 1-5-137

8. Remove the DP forwarding pulley unit.

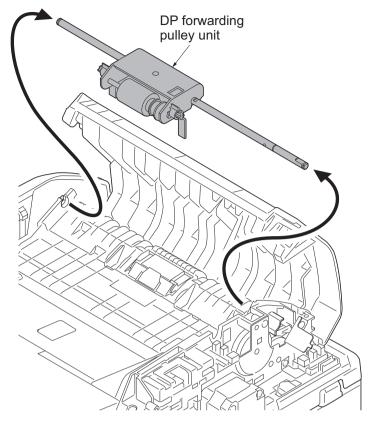


Figure 1-5-138

- 9. Remove the stop ring A.
- 10. Remove the DP feed pulley unit from the LF holder.
- 11. Remove the stop ring B.
- 12. Remove the PF collar, spring, spring collar and pin from the PF shaft.
- 13. Remove the DP feed pulley, one-way clutch, PF pulley gear and pin from the PF shaft.

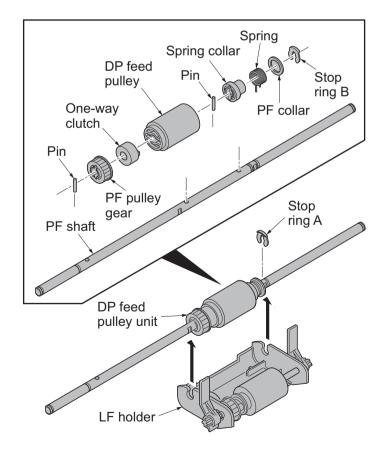


Figure 1-5-139

- 14. Remove the PF stopper from the LF holder.
- 15. Remove the stop ring.
- 16. Pull out the LF shaft and then remove the LF gear 18, joint gear and DP forwarding pulley.
- 17. Check or replace the DP feed pulley and DP forwarding pulley, and refit all the removed parts.

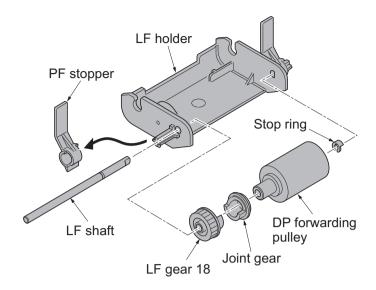


Figure 1-5-140

(3) Detaching and refitting the DP separation pad

Procedure

- 1. Remove the DP paper feed pulley unit (see page 1-5-82).
- 2. Remove the DP separation pad.
- 3. Check or replace the DP separation pad and refit all the removed parts.

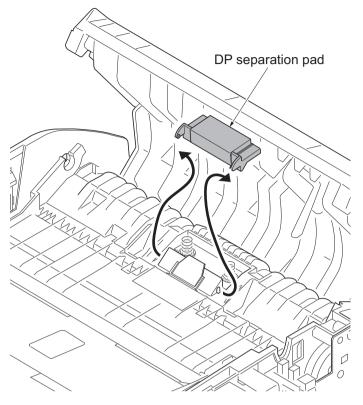
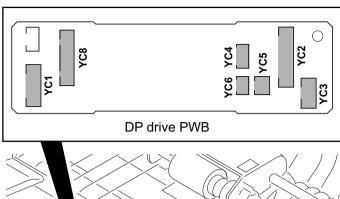


Figure 1-5-141

(4) Detaching and refitting the DP drive PWB

Procedure

- 1. Remove the DP rear cover (see page 1-5-82).
- 2. Remove all connectors from DP drive PWB.
- 3. Remove the screw and then remove the DP drive PWB.
- 4. Check or replace the DP drive PWB and refit all the removed parts.



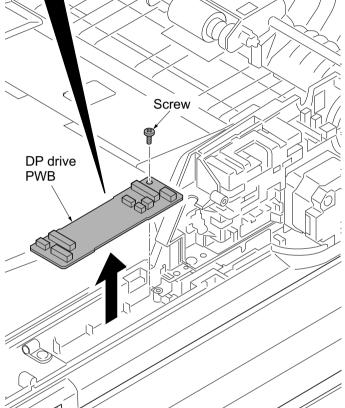


Figure 1-5-142

1-5-12 Others

(1) Detaching and refitting the paper conveying unit

Procedure

- 1. Open the rear cover.
- 2. Remove left and right straps.

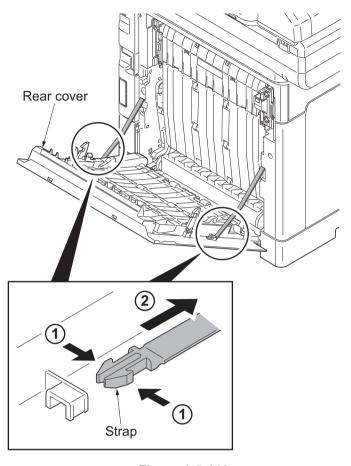


Figure 1-5-143

3. Remove the rear cover unit.

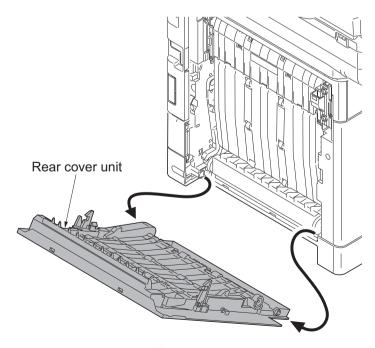


Figure 1-5-144

4. Remove the paper conveying unit.

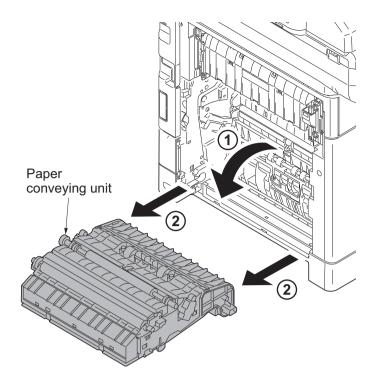


Figure 1-5-145

(2) Detaching and refitting the operation panel

Procedure

- 1. Release four hooks and then remove the operation panel.
- 2. Remove the FFC from connector.
- 3. Check or replace the operation panel and refit all the removed parts.

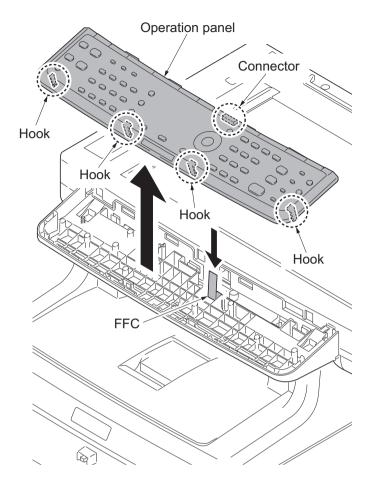


Figure 1-5-146

(3) Detaching and refitting the power source inlet

Procedure

- 1. Remove the power source PWB (see page 1-5-29).
- 2. Remove the connector and release the hook and then remove the right fan motor.

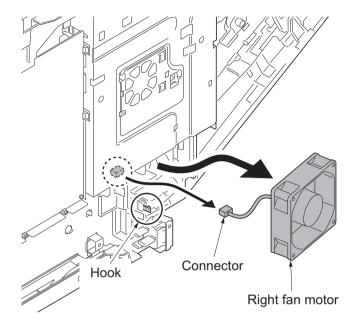


Figure 1-5-147

3. Remove the screw of the grounding wire.

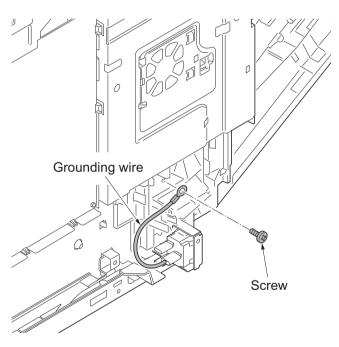


Figure 1-5-148

4. Remove the screw and two terminals and then remove the power source inlet.

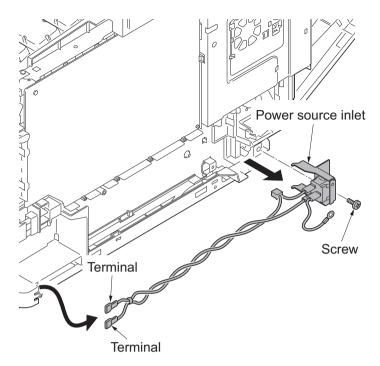


Figure 1-5-149

- 5. Check or replace the power source inlet and refit all the removed parts.
- *: Before mounting the AC inlet on the main unit, twist the wires 5 to 7 turns.

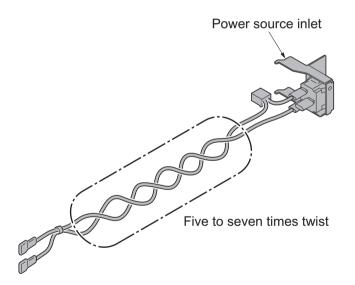


Figure 1-5-150

(4) Direction of installing the principal fan motors

When detaching or refitting the fan motors, be careful of the airflow direction (intake or exhaust).

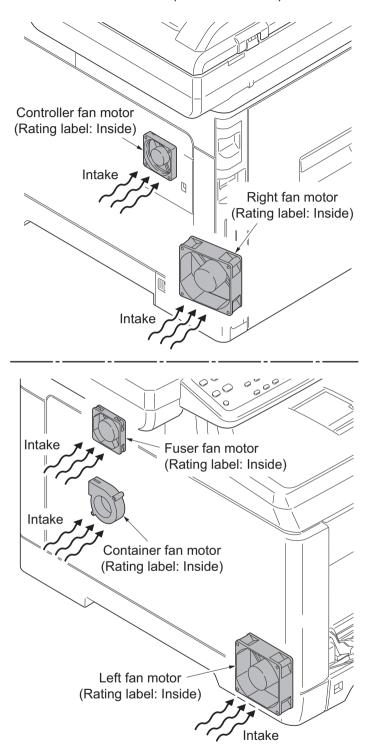


Figure 1-5-151

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1-6-1 Upgrading the firmware

Follow the procedure below to upgrade the firmware of main PWB (main controller and scanner), engine PWB, FAX control PWB*, optional language, optional paper feeder and color table.

Preparation

Extract the file that has the download firmware and put them in the USB Memory.

Procedure

- Turn ON the main power switch and confirm if the screen shows "Ready to copy" then, turn OFF the main power switch.
- 2. Insert USB memory that has the firmware in the USB memory slot.
- 3. Turn ON the main power switch.
- About 40 seconds later, "FW-Update" will be displayed and blinking the memory indicator (this shows to start the download).
- 5. Display the software that now upgrading.

"FW-Update [CTRL]"

"FW-Update [ENGN]"

"FW-Update [PF1]"

"FW-Update [PF2]"

"FW-Update [SCAN]"

"FW-Update [FAX]" *

"FW-Update [OPT]"

"FW-Update [CLT]"

Caution:

Never turn off the power switch or remove the USB flash device during upgrading.

- 6. Display the completion of the upgrade (Memory indicator is ON condition).
- 7. ROM version is confirmed by the content of the display.
- 8. Turn OFF the main power switch and remove the USB memory.
- *: 4 in 1 model (with FAX) only.

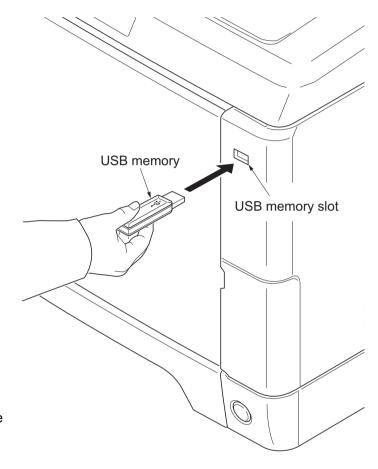


Figure 1-6-1

Emergency-UPDATE

If the device is accidentally switched off and upgrading was incomplete, upgrade becomes impossible from a USB flash device.

In that case, retry upgrading after recovering the software by following the procedure below.

Preparation

The memory card must be formatted in FAT or FAT32 in advance.

Extract the main firmware to download from the file.

Rename the file which was extracted from the archive. [DL_CTRL.2KX] to [KM_EMRG.2KX] Copy the all extracted files to the root of the memory card.

Procedure

- 1. Turn the main power switch off.
- 2. Install the memory card which contains the firmware onto the main PWB.
- 3. Turn the main power switch on.
- 4. Rewriting of the PWB software will start for restoration.
 - The memory and attention indicators will be blinking.
- 5. Only the Memory indicator will be blinking when rewriting is successful.
 - * : Only the Attention indicator will be blinking when rewriting is failed.
- 6. Turn the main power switch off.
- 7. Wait for several seconds and then remove the memory card from the main PWB.
- 8. Extract the firmware to download from the archive and copy to the root of the USB flash device.

NOTE: Deletes the "ES_SKIP.on" file When it is contained directly under the USB memory.

- Insert the USB flash device in which the firmware was copied into the slot on the machine.
- Perform steps 3 to 8 on the previous page.
- 11. Turn the main power switch on.
- Perform maintenance item U000 (Print a maintenance report) to check that the version of ROM U019 has been upgraded.

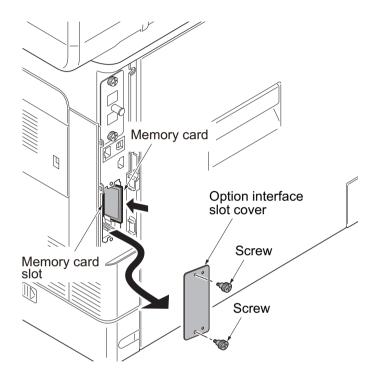


Figure 1-6-2

1-6-2 Remarks on engine PWB replacement

When replacing the engine PWB, remove the EEPROM (U1) from the engine PWB that has been removed and then reattach it to the new engine PWB.

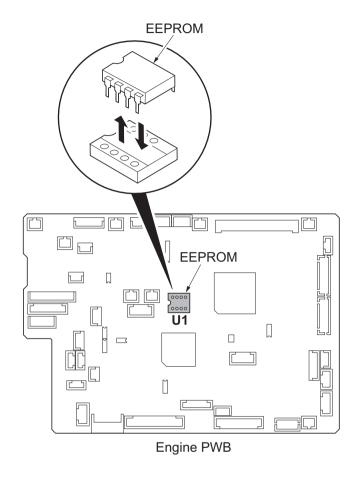


Figure 1-6-3

2-1-1 Paper feed/conveying section

Paper feed/conveying section consists of the paper feed unit that feeds paper from the cassette and the MP tray paper feed unit that feeds paper from the MP tray, and the paper conveying section that conveys the fed paper to the transfer/separation section.

(1) Cassette paper feed section

The cassette can contain 250 sheets. The sheet from the cassette is pulled out by rotation of the pickup roller and sent to the paper conveying section by rotation of the paper feed roller. Also the retard roller prevents multiple feeding of paper.

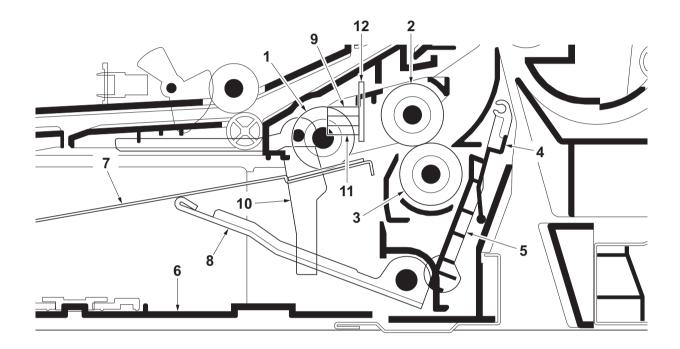


Figure 2-1-1 Cassette paper feed section

- 1. Pickup roller
- 2. Paper feed roller
- 3. Retard roller
- 4. Retard cover
- 5. Retard lever
- 6. Cassette base

- 7. Bottom plate
- 8. Lift work plate
- 9. Paper sensor (PS)
- 10. Actuator (paper sensor)
- 11. Lift sensor (LS)
- 12. Cassette PWB (CPWB)

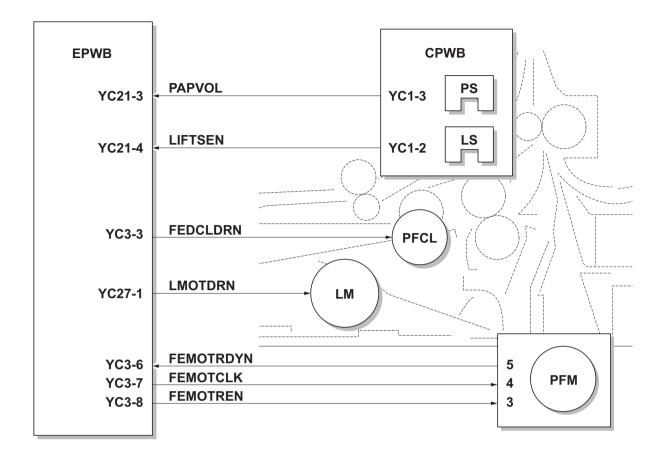


Figure 2-1-2 Cassette paper feed section block diagram

(2) MP tray paper feed section

The MP tray can contain 50 sheets. Feeding from the MP tray is performed by the rotation of the MP paper feed roller. Also, function of the MPF separation pad prevents paper from multiple feeding.

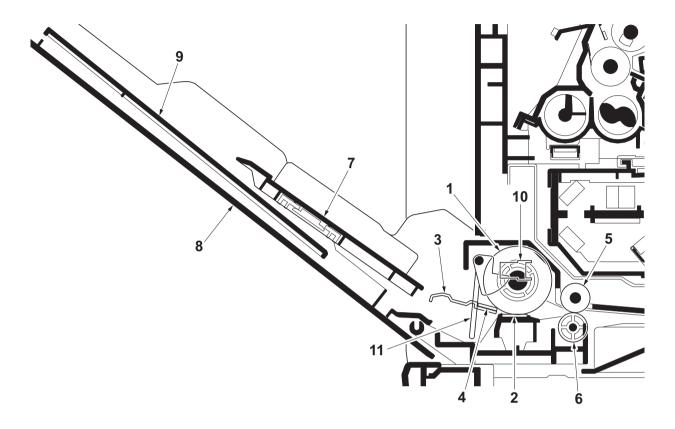


Figure 2-1-3 MP tray paper feed section

- 1. MP paper feed roller
- 2. MPF separation pad
- 3. MPF bottom plate
- 4. Friction pad
- 5. MPF feed roller
- 6. Feed pulley

- 7. MPF base
- 8. MPF cover
- 9. MPF tray
- 10. MP paper sensor (MPPS)
- 11. Actuator (MP paper sensor)

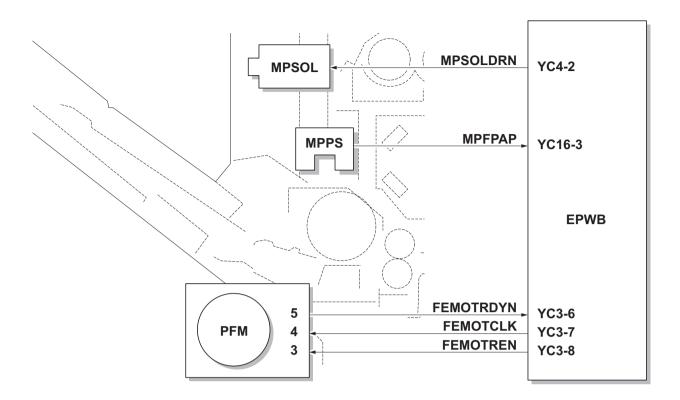


Figure 2-1-4 MP tray paper feed section block diagram

(3) Paper conveying section

The paper conveying section conveys paper to the transfer/separation section as paper feeding from the cassette or MP tray, or as paper refeeding for duplex printing. Paper by feeding is conveyed by the middle roller to the position where the registration sensor (RS) is turned on, and then sent to the transfer/separation section by the front registration roller and rear registration roller.

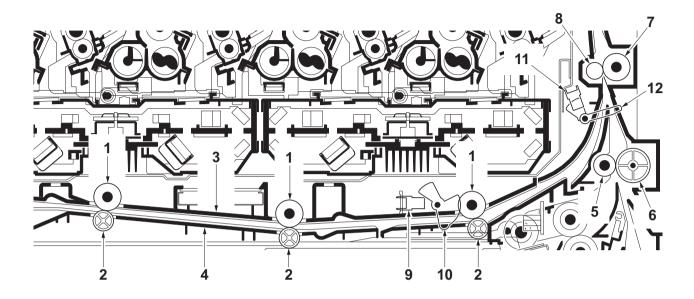


Figure 2-1-5 Paper conveying section

- 1. MPF feed rollers
- 2. Feed pulleys
- 3. MPF feed upper guide
- 4. MPF feed lower guide
- 5. Middle roller
- 6. Middle pulley
- 7. Front registration roller

- 8. Rear registration roller
- MP paper conveying sensor (MPPCS)
- Actuator
 (MP paper conveying sensor)
- 11. Registration sensor (RS)
- 12. Actuator (registration sensor)

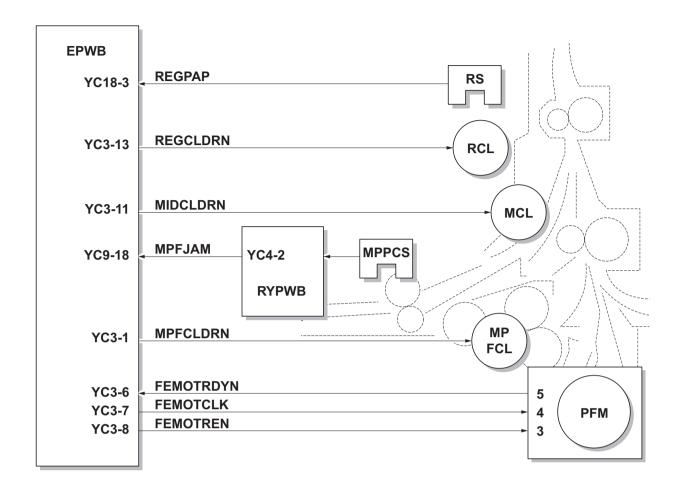


Figure 2-1-6 Paper conveying section block diagram

2-1-2 Drum section

The drum section consists of the drum, the charger roller unit, and the cleaning unit, and the drum surface is uniformly charged in preparation for formation of residual image by laser beam.

After transfer is complete, toner remaining on the drum surface is chipped off with the cleaning blade and is collected to the waste toner box with the drum screw. The cleaning lamp (CL) consists of LEDs and removes residual charge on the drum before main charging.

.

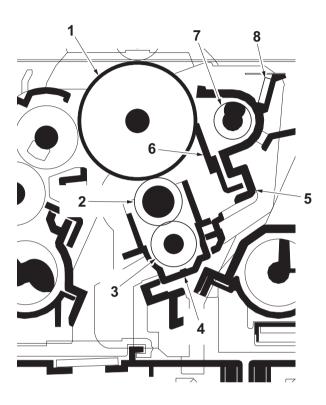


Figure 2-1-7 Drum section

- 1. Drum
- 2. Charger roller
- 3. Charger cleaning roller
- 4. Charger case

- 5. Drum frame
- 6. Cleaning blade
- 7. Drum screw
- 8. Cleaning lamp (CL)

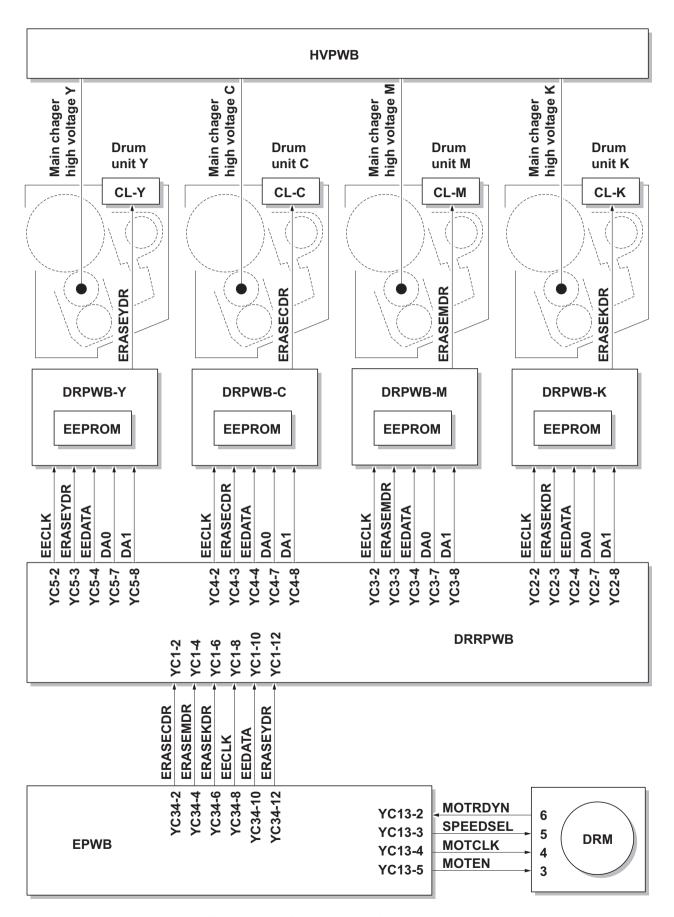


Figure 2-1-8 Drum section block diagram

2-1-3 Developing section

The developing unit consists of the sleeve roller that forms the magnetic brush, the magnet roller, the developing blade and the developing screws that agitate the toner. Also, the toner sensor (TS) checks whether or not toner remains in the developing unit.

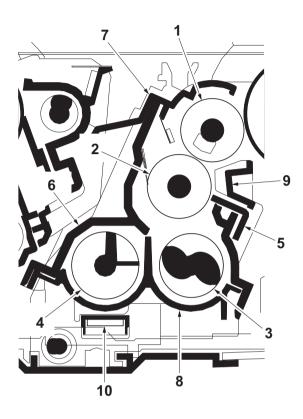


Figure 2-1-9 Developing section

- 1. Sleeve roller
- 2. Magnet roller
- 3. Developing screw A
- 4. Developing screw B
- 5. Developing blade

- 6. Developer case
- 7. Upper developer cover
- 8. Developer base
- 9. Sleeve cover
- 10. Toner sensor (TS)

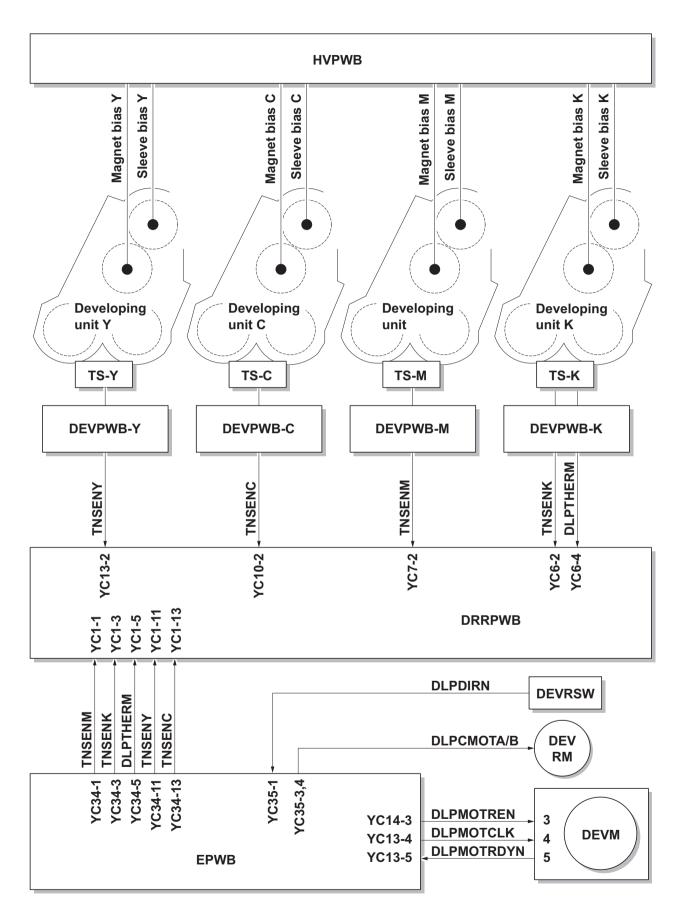


Figure 2-1-10 Developing section block diagram

2-1-4 Optical section

The optical section consists of the image scanner section for scanning and the laser scanner section for printing.

(1) Image scanner section

The original image is illuminated by the exposure lamp (EL) and scanned by the CCD image sensor in the CCD PWB (CCDPWB) via the five mirrors and ISU lens, the reflected light being converted to an electrical signal.

If a document processor is used, the image scanner unit stops at the position of the DP contact glass and scans sequentially one row of the image on the original in synchronization with the moving timing of the original in the sub scan direction by driving the DP.

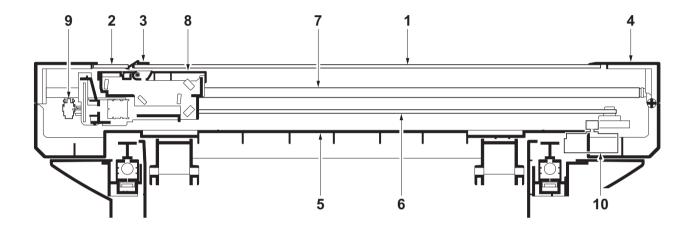


Figure 2-1-11 Scanner unit

- 1. Contact glass
- 2. DP contact glass
- 3. Original size indicator plate
- 4. ISU top frame
- 5. ISU bottom frame

- 6. ISU belt
- 7. ISU shaft
- 8. Image scanner unit (ISU)
- 9. Home position sensor (HPS)
- 10. ISU motor (ISUM)

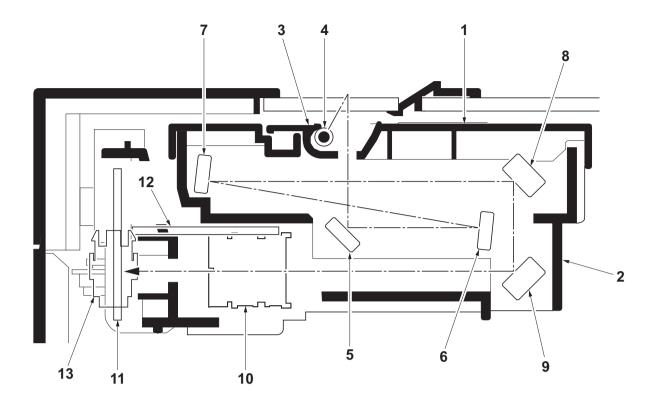


Figure 2-1-12 Image scanner unit (ISU)

- 1. Lamp mount
- 2. ISU housing
- 3. ISU reflector
- 4. Exposure lamp (EL)
- 5. Mirror A
- 6. Mirror B
- 7. Mirror C

- 8. Mirror D
- 9. Mirror E
- 10. ISU lens
- 11. CCD PWB (CCDPWB)
- 12. Inverter PWB (INPWB)
- 13. Home position sensor (HPS)

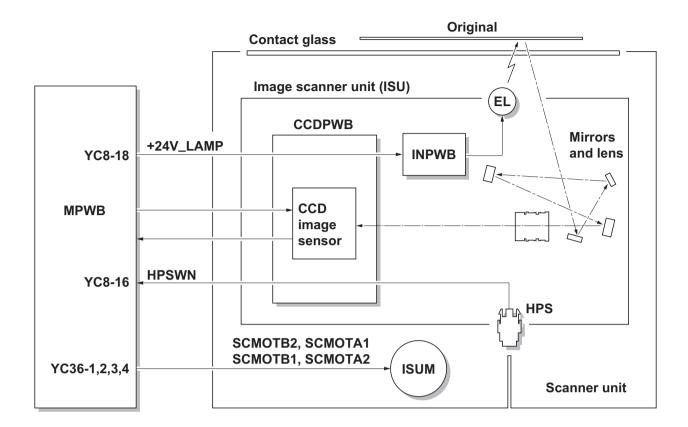


Figure 2-1-13 Scanner unit block diagram

(2) Laser scanner section

The charged surface of the drum is then scanned by the laser beam from the laser scanner unit. The laser beam is dispersed as the polygon motor (PM) revolves to reflect the laser beam over the drum. Various lenses and mirror are housed in the laser scanner unit, adjust the diameter of the laser beam, and focalize it at the drum surface. Also the LSU cleaning motor (LSUCM) is activated to conduct automatically cleaning of the LSU dust shield glass.

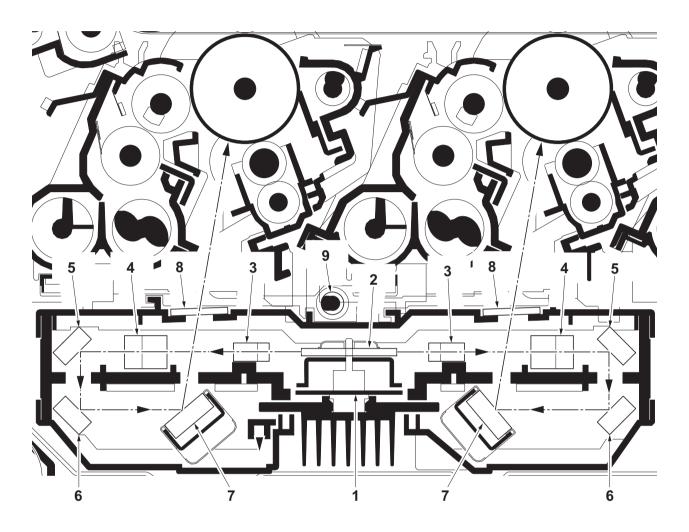


Figure 2-1-14 Laser scanner unit (LSU)

- 1. Polygon motor (PM)
- 2. Polygon mirror
- 3. $f-\theta$ lens A
- 4. f-θ lens B
- 5. Mirror A

- 6. Mirror B
- 7. Mirror C
- 8. LSU dust shield glass
- 9. LSU spiral

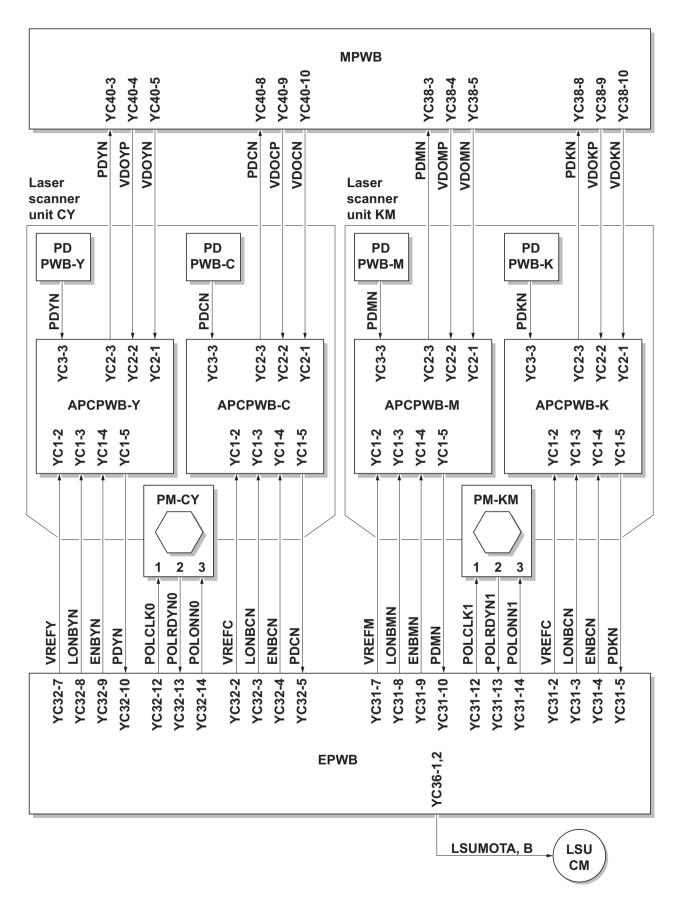


Figure 2-1-15 Laser scanner unit block diagram

2-1-5 Transfer/Separation section

The transfer/separation section consists of the intermediate transfer unit section and the secondary transfer roller section.

(1) Intermediate transfer unit section

The intermediate transfer unit section consists of the transfer cleaning unit, the transfer belt, and the four primary transfer rollers for respective color drums, and forms a full-color toner image by superimposing and transferring single-color toner images formed on each drum onto the transfer belt. Also with the ID sensors (IDS) mounted on the machine frame, the toner density on the transfer belt is measured.

The transfer cleaning unit collects toner remaining on the transfer belt after secondary transfer and forwards it as waste toner to the waste toner box.

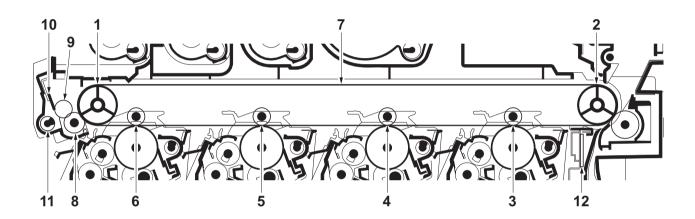


Figure 2-1-16 Intermediate transfer unit section

- 1. Tension roller
- 2. Drive roller
- 3. Primary transfer roller K
- 4. Primary transfer roller M
- 5. Primary transfer roller C
- 6. Primary transfer roller Y
- 7. Transfer belt
- 8. Cleaning fur brush
- 9. Cleaning roller
- 10. Cleaning blade
- 11. Cleaning screw
- 12. ID sensors (IDS)

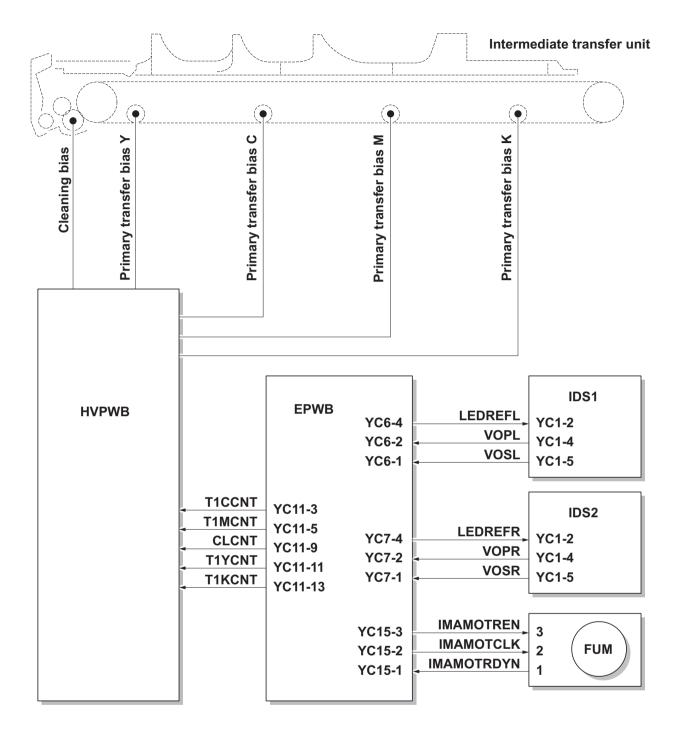


Figure 2-1-17 Intermediate transfer unit section block diagram

(2) Secondary transfer roller section

The secondary transfer roller section consists of the secondary transfer roller mounted to the paper conveying unit and the separation brush. To the secondary transfer roller, DC bias is applied from the high voltage PWB (HVPWB). The toner image formed on the transfer belt is transferred to the paper by the potential difference and the paper is separated by curvature separation.

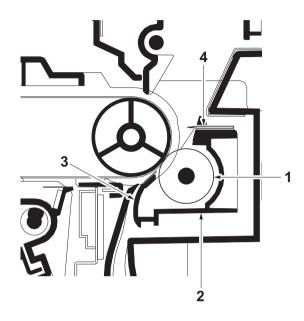


Figure 2-1-18 Secondary transfer roller section

- 1. Secondary transfer roller
- 2. Brush holder
- 3. Paper chute guide
- 4. Separation brush

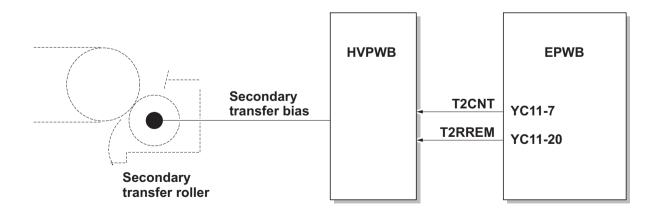


Figure 2-1-19 Secondary transfer roller section block diagram

2-1-6 Fuser section

The paper sent from the transfer/separation section is interleaved between the heat roller and the press roller. The heat roller is heated by the fuser heater (FH), and the toner is fused by heat and pressure and fixed onto the paper because the press roller is pressed by the fuser press spring. The surface temperature of heat roller is detected by the fuser thermistor (FTH) and controlled by the engine PWB (EPWB). If the fuser section shows extremely high temperature, the power line will be shut off and the fuser heater (FH) is forced to turn off

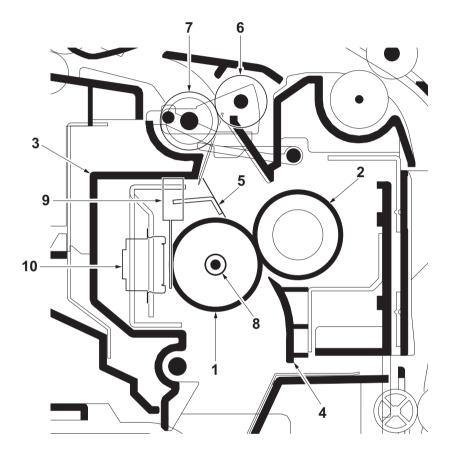


Figure 2-1-20 Fuser section

- 1. Heat roller
- 2. Press roller
- 3. Upper fuser frame
- 4. Fuser paper guide
- 5. Separators

- 6. Eject roller
- 7. Eject pulley
- 8. Fuser heater (FH)
- 9. Fuser thermistor (FTH)
- 10. Fuser thermostat (FTS)

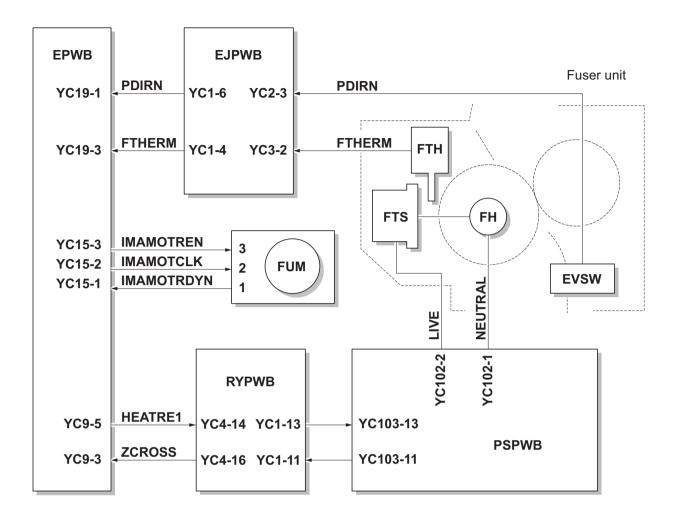


Figure 2-1-21 Fuser section block diagram

2-1-7 Eject/Feedshift section

The paper eject/feedshift section consists of the conveying path which sends the paper that has passed the fuser section to the top tray or the duplex conveying section.

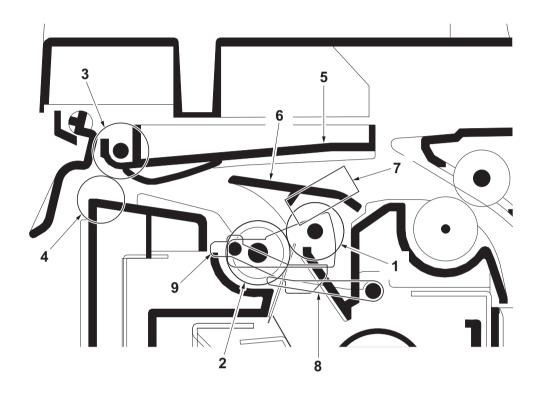


Figure 2-1-22 Eject/Feed shift section

- 1. Eject roller
- 2. Eject pulley
- 3. Eject roller
- 4. Eject pulley
- 5. Upper eject guide

- 6. Change guide
- 7. Eject sensor (ES)
- 8. Actuator (eject sensor)
- 9. Actuator (eject sensor)

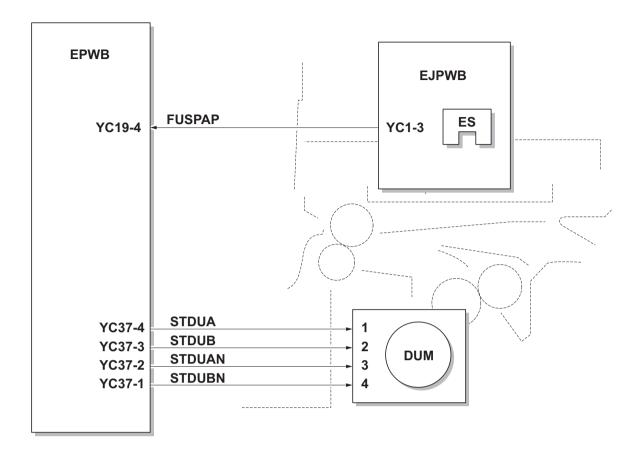


Figure 2-1-23 Eject/Feed shift section block diagram

2-1-8 Duplex conveying section

The duplex conveying section consists of conveying path which sends the paper sent from the eject/feedshift section to the paper feed/conveying section when duplex printing.

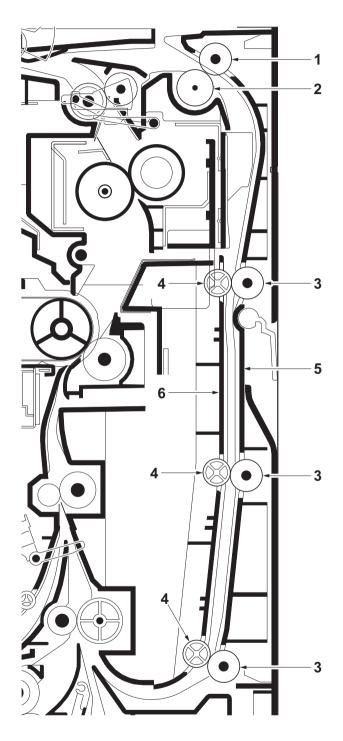


Figure 2-1-24 Duplex conveying section

- 1. Duplex roller L
- 2. Eject pulley
- 3. Duplex rollers S

- 4. Duplex pulleys
- 5. Duplex frame
- 6. Duplex feed guide

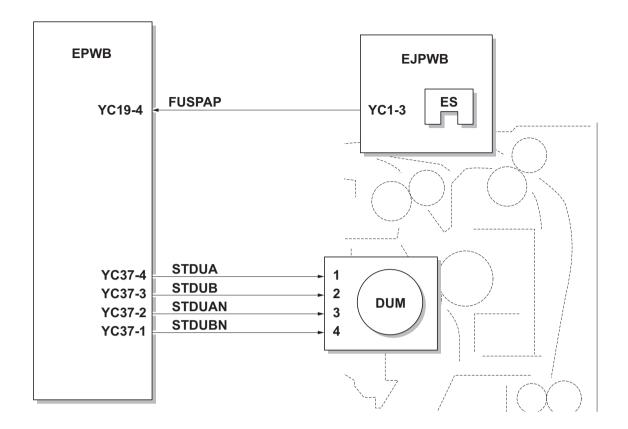


Figure 2-1-25 Duplex conveying section block diagram

2-1-9 Document processor

(1) Original feed section

The original feed section consists of the parts shown in figure. An original placed on the original table is conveyed to the original conveying section. Original is fed by the rotation of the DP forwarding pulley and DP feed pulley.

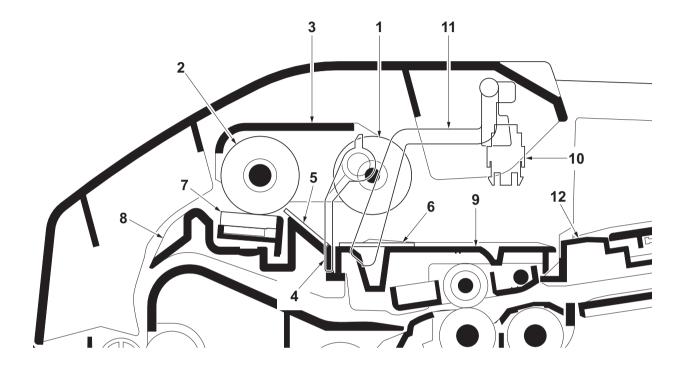


Figure 2-1-26 Original feed section

- 1. DP forwarding pulley
- 2. DP feed pulley
- 3. LF holder
- 4. PF stopper
- 5. Front separation pad
- 6. LF friction plate

- 7. DP separation pad
- 8. Upper guide
- 9. Switchback guide
- 10. DP original sensor (DPOS)
- 11. Actuator (DP original sensor)
- 12. Original table

]

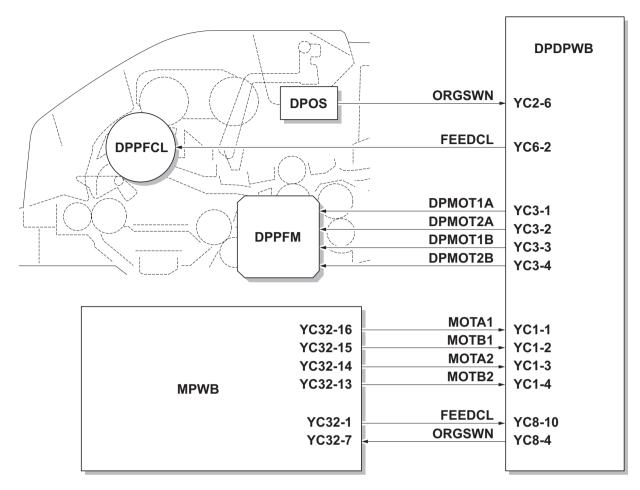


Figure 2-1-27 Original feed section block diagram

(2) Original conveying section

The original conveying section consists of the parts shown in figure. A conveyed original is scanned by the optical section (CCD) of main machine when it passes through the DP contact glass of main machine.

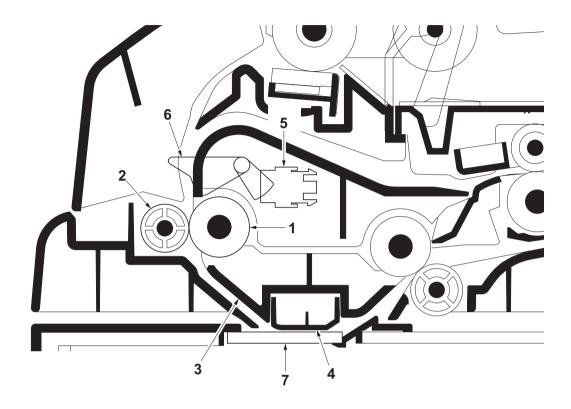


Figure 2-1-28 Original conveying section

- 1. Conveying roller A
- 2. Conveying pulley
- 3. Conveying bottom
- 4. Reading guide

- 5. DP timing sensor (DPTS)
- 6. Actuator (DP timing sensor)
- 7. DP contact glass

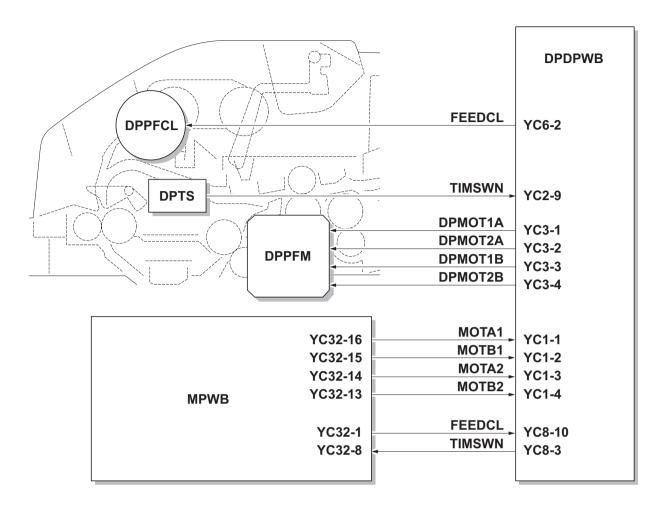


Figure 2-1-29 Original conveying section block diagram

(3) Original switchback/eject sections

The original switchback/eject sections consists of the parts shown in figure. An original of which scanning is complete is ejected to the original eject table by the eject roller. In the case of duplex switchback scanning, an original is conveyed temporarily to the switchback tray and conveyed again to the original conveying section by the switchback roller.

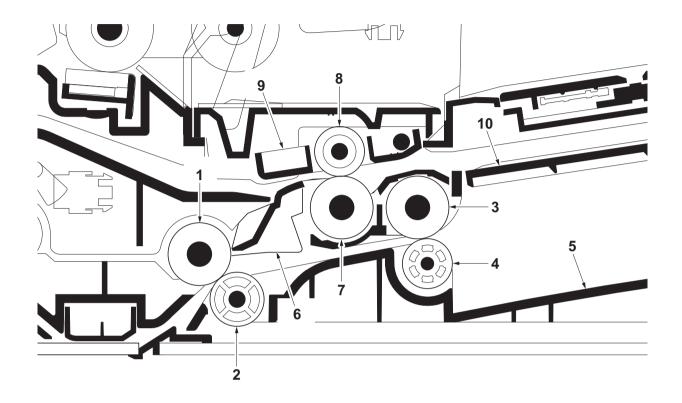


Figure 2-1-30 Original switchback/eject sections

- 1. Conveying roller B
- 2. Conveying pulley
- 3. Eject roller
- 4. Eject pulley
- 5. Original eject table

- 6. Switchback guide
- 7. Switchback roller
- 8. Switchback pulley
- 9. Switchback pulley mount
- 10. Switchback tray

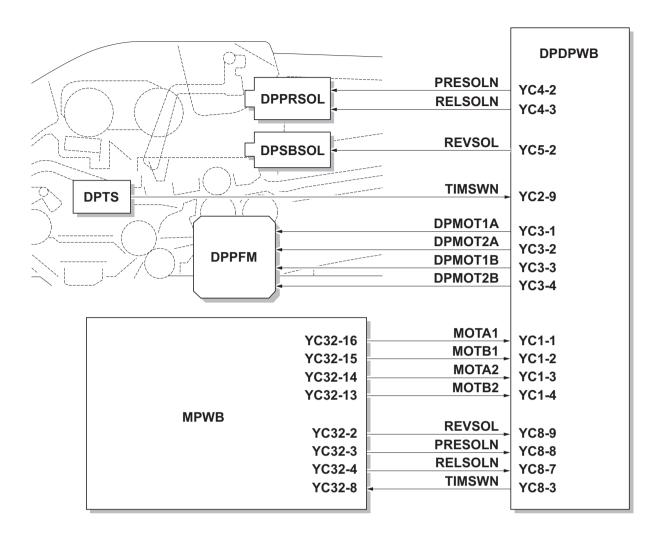


Figure 2-1-31 Original switchback/eject sections block diagram

2-2-1 Electrical parts layout

(1) PWBs

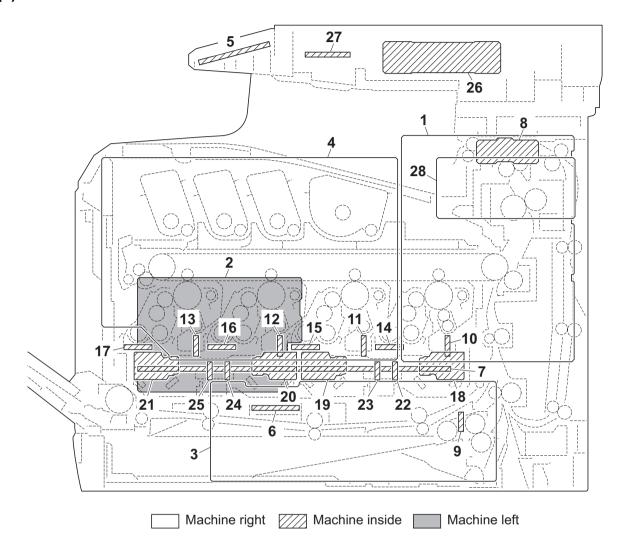


Figure 2-2-1 PWBs

1. Main PWB (MPWB)	. Controls the software such as the print data processing and provides the interface with computers.
2. Engine PWB (EPWB)	. Controls printer hardware such as high voltage/bias output control, paper conveying system control, and fuser temperature control, etc.
3. Power source PWB (PSPWB)	. After full-wave rectification of AC power source input, switching for converting to 24 V DC and 5V DC for output. Controls the fuser heater.
4. High voltage PWB (HVPWB)	. Generates main charging, developing bias, transfer bias and cleaning bias.
5. Operation panel PWB (OPPWB)	. Controls the LCD display. Consists the LCD, LED indicators and key switches.
6. Relay PWB (RPWB)	. Consists of wiring relay circuit between main PWB and engine PWB and power source PWB.
7. Drum relay PWB (DRRPWB)	. Consists of wiring relay circuit between engine PWB and the drum units and developing units.

8. Eject PWB (EJPWB)	. Consists of wiring relay circuit between engine PWB and each
O Coccetto DIAID (CDIAID)	electrical component (eject section).
9. Cassette PWB (CPWB)	. Interconnects the engine PWB and each electrical component
10 Drum DW/D K (DDDW/D K)	(cassette section).
10. DIUIII PVVB K (DRPVVB-K)	. Relays wirings from electrical components on the drum unit K. Drum individual information in EEPROM storage.
11 Drum DW/D M (DDDW/D M)	· · · · · · · · · · · · · · · · · · ·
TT. DIUITI PVVB IVI (DRPVVB-IVI)	. Relays wirings from electrical components on the drum unit M. Drum individual information in EEPROM storage.
12 Drum DWR C (DDDWR C)	. Relays wirings from electrical components on the drum unit C.
12. DIUIII F WB C (DRF WB-C)	Drum individual information in EEPROM storage.
13 Drum PWR V (DRPWR_V)	. Relays wirings from electrical components on the drum unit Y.
13. DIGITI WE I (DIG WE-1)	Drum individual information in EEPROM storage.
14 Developing PWR K (DEVPWR-K)	. Relays wirings from electrical components on the developing unit
14. Developing I WD IX (DEVI WD-IX)	K.
15 Developing PWB M (DEVPWB-M)	. Relays wirings from electrical components on the developing unit
	M.
16. Developing PWB C (DEVPWB-C)	. Relays wirings from electrical components on the developing unit
,	C.
17. Developing PWB Y (DEVPWB-Y)	. Relays wirings from electrical components on the developing unit
. •	Y.
18. APC PWB K (APCPWB-K)	. Generates and controls the laser beam (black).
19. APC PWB M (APCPWB-M)	. Generates and controls the laser beam (magenta).
20. APC PWB C (APCPWB-C)	. Generates and controls the laser beam (cyan).
21. APC PWB Y (APCPWB-Y)	. Generates and controls the laser beam (yellow).
22. PD PWB K (PDPWB-K)	. Controls horizontal synchronizing timing of laser beam (black).
,	. Controls horizontal synchronizing timing of laser beam (magenta).
,	. Controls horizontal synchronizing timing of laser beam (cyan).
` ,	. Controls horizontal synchronizing timing of laser beam (yellow).
26. CCD PWB (CCDPWB)	<u> </u>
27. Inverter PWB (INPWB)	·
28. Fax control PWB (FCPWB)*	. Modulates, demodulates, compresses, decompresses and
	smoothes out image data, and converts resolution of image data.

^{*: 4} in 1 model (with FAX) only.

List of correspondences of PWB names

No.	Name used in service manual	Name used in parts list		
1	Main PWB (MPWB)	PARTS PWB MAIN ASSY SP		
2	Engine PWB (EPWB)	PARTS PWB ENGINE ASSY SP		
3	Power source PWB (PSPWB)	PARTS SWITCHING REGULATOR SP		
4	High voltage PWB (HVPWB)	PARTS HIGH VOLTAGE UNIT SP		
5	Operation panel PWB (OPPWB)	-		
6	Relay PWB (RPWB)	-		
7	Drum relay PWB (DRRPWB)	-		
8	Eject PWB (EJPWB)	PARTS PWB ASSY EXIT SP		
9	Cassette PWB (CPWB)	PARTS PWB ASSY CASSETTE SP		
10	Drum PWB K (DRPWB-K)	-		
11	Drum PWB M (DRPWB-M)	-		
12	Drum PWB C (DRPWB-C)	-		
13	Drum PWB Y (DRPWB-Y)	-		
14	Developing PWB K (DEVPWB-K)	-		
15	Developing PWB M (DEVPWB-M)	-		
16	Developing PWB C (DEVPWB-C)	-		
17	Developing PWB Y (DEVPWB-Y)	-		
18	APC PWB K (APCPWB-K)	-		
19	APC PWB M (APCPWB-M)	-		
20	APC PWB C (APCPWB-C)	-		
21	APC PWB Y (APCPWB-Y)	-		
22	PD PWB K (PDPWB-K)	-		
23	PD PWB M (PDPWB-M)	-		
24	PD PWB C (PDPWB-C)	-		
25	PD PWB Y (PDPWB-Y)	-		
26	CCD PWB (CCDPWB)	-		
27	Inverter PWB (INPWB)	-		
28	Fax control PWB (FCPWB)	PARTS FAX UNIT J SP		

(2) Switches and sensors

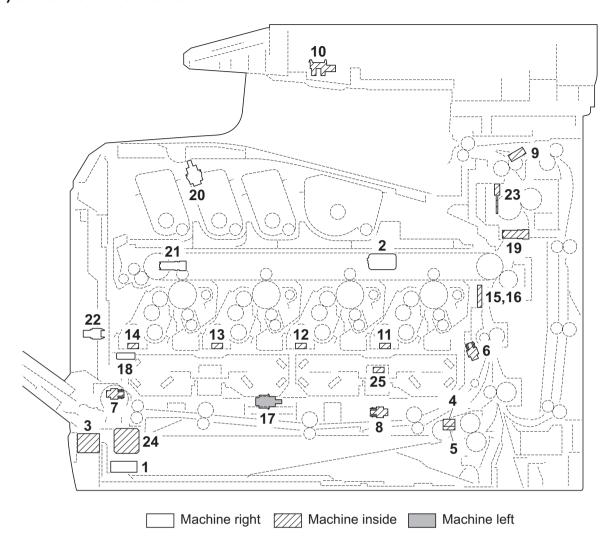


Figure 2-2-2 Switches and sensors

1. Main power switch (MSW)	. Turns ON/OFF the AC power source.
2. Interlock switch (ILSW)	. Shuts off 24 V DC power line when the top tray and rear cover are opened.
3. Cassette size switch (CSSW)	. Detects the paper size dial setting of the paper setting dial.
4. Paper sensor (PS)	. Detects the presence of paper in the cassette.
5. Lift sensor (LS)	. Detects activation of upper limit of the bottom plate.
6. Registration sensor (RS)	. Controls the secondary paper feed start timing.
7. MP paper sensor (MPPS)	. Detects the presence of paper on the MP tray.
8. MP paper conveying sensor (MPFS)	. Detects a paper misfeed in the MP paper conveying section.
9. Eject sensor (ES)	. Detects a paper misfeed in the fuser or eject section.
10. Home position sensor (HPS)	. Detects the ISU in the home position.
11. Toner sensor K (TS-K)	. Detects the toner density in the developing unit K.
12. Toner sensor K (TS-M)	. Detects the toner density in the developing unit M.
13. Toner sensor K (TS-C)	. Detects the toner density in the developing unit C.
14. Toner sensor K (TS-Y)	. Detects the toner density in the developing unit Y.
15. ID sensor 1 (IDS1)	. Measures image density for color calibration.
16. ID sensor 2 (IDS2)	. Measures image density for color calibration.

Developing release switch	
(DEVRSW)	Detects separation of developing units M, C and Y.
18. Waste toner sensor (WTS)	Detects when the waste toner box is full.
19. Envelope switch (EVSW)	Detects the envelope mode setting.
20. Top tray switch (TTSW)	Detects the opening and closing of the top tray.
21. Toner container sensor (TCS)	Detects the presence of the toner container.
22. Waste toner cover sensor (WTCS)	Detects the opening and closing of the waste toner cover.
23. Fuser thermistor (FTH)	Detects the heat roller temperature.
24. Outer temperature sensor (OTEMS)	Detects the outside temperature and humidity.
25. Inner temperature sensor (ITEMS)	Detects the inside temperature.

(3) Motors

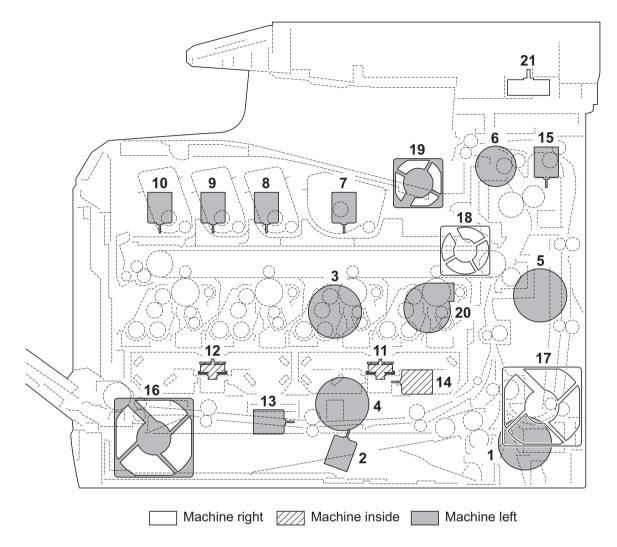


Figure 2-2-3 Motors

1. Paper feed motor (PFM)	Drives the paper feed section.
2. Lift motor (LM)	Operates the bottom plate.
3. Drum motor (DRM)	Drives the drum unit.
4. Developing motor (DEVM)	Drives the developing unit.
5. Fuser motor (FUM)	Drives the transfer section and the fuser section.
6. Duplex motor (DUM)	Drives the duplex section.
7. Toner motor K (TM-K)	Replenishes toner to the developing unit K
,	,
` ,	Replenishes toner to the developing unit C
· · · · · · · · · · · · · · · · · · ·	Replenishes toner to the developing unit Y
11. Polygon motor KM (PM-KM)	Drives the polygon mirror KM.
12. Polygon motor CY (PM-CY)	Drives the polygon mirror CY.
. •	Drives separation of developing units M, C and Y.
14. LSU cleaning motor (LSUCM)	Drives LSU dust shield glass cleaning system.
15. Fuser pressure release motor	
(FPRM)	Drives fuser pressure release.
16. Left fan motor (LFM)	Cools the interior of machine.
17. Right fan motor (RFM)	Cools the interior of machine.

18. Controller fan motor (CONFM)	Cools the controller section.
19. Fuser fan motor (FUFM)	Cools the toner container section.
20. Container fan motor (CFM)	Cools the toner container section.
21. ISU motor (ISUM)	Drives the ISU.

(4) Others

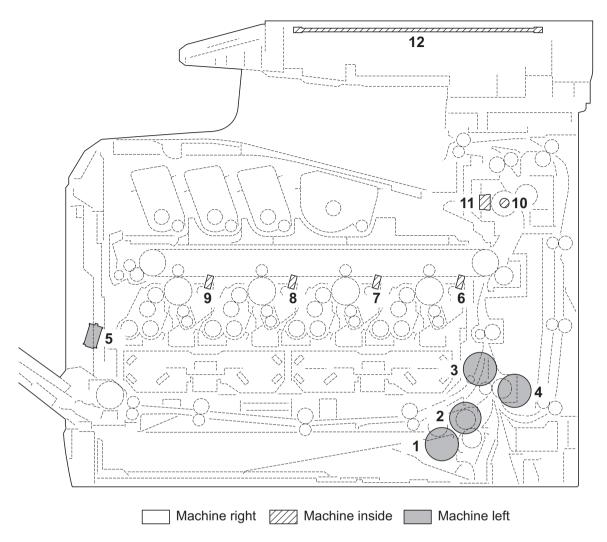


Figure 2-2-4 Others

Paper feed clutch (PFCL)	Primary paper feed from cassette.
2. MP feed clutch (MPFCL)	Controls the drive of MP conveying section.
3. Registration clutch (RCL)	Controls the secondary paper feed.
4. Middle clutch (MCL)	Controls the drive of conveying section.
5. MP solenoid (MPSOL)	Controls the MP bottom plate.
6. Cleaning lamp K (CL-K)	Eliminates the residual electrostatic charge on the drum (black).
7. Cleaning lamp M (CL-M)	Eliminates the residual electrostatic charge on the drum
	(magenta).
8. Cleaning lamp C (CL-C)	Eliminates the residual electrostatic charge on the drum (cyan).
9. Cleaning lamp Y (CL-Y)	Eliminates the residual electrostatic charge on the drum (yellow).
10. Fuser heater (FH)	Heats the heat roller.
11. Fuser thermal cutout	Prevents overheating of the heat roller.
12. Exposure lamp (EL)	Exposes originals.

(5) Document processor

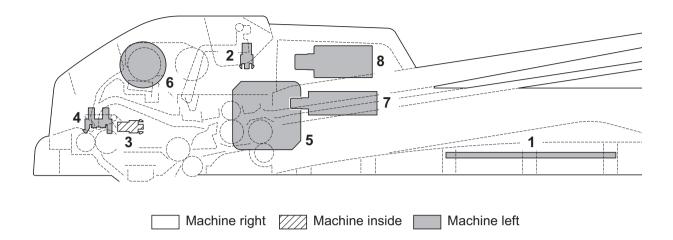


Figure 2-2-5 Document processor

1. DP drive PWB (DPDPWB	. Consists the solenoids and clutch driver circuit and wiring relay circuit.
2. DP original sensor (DPOS)	
` ,	·
3. DP timing sensor (DPTS)	. Detects the original scanning timing.
4. DP open/close sensor (DPOCS)	. Detects the opening/closing of the DP.
5. DP paper feed motor (DPPFM)	. Drives the original feed section.
6. DP paper feed clutch (DPPFCL)	. Controls the drive of the DP forwarding pulley and DP feed pulley.
7. DP switchback solenoid (DPSBSOL)	. Operates the switchback guide.
8. DP pressure solenoid (DPPRSOL)	. Operates the switchback pulley.

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2-3-1 Power source PWB

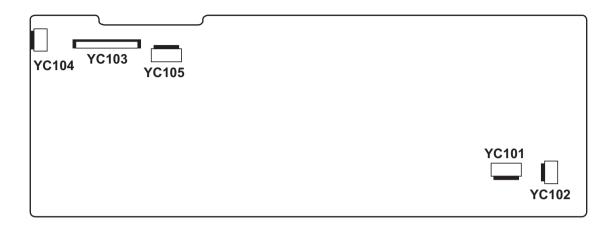


Figure 2-3-1 Power source PWB silk-screen diagram

Pin	Signal	I/O	Voltage	Description
1	LIVE	I	120 V AC 220-240 V AC	AC power input
2	NEUTRAL	I	120 V AC 220-240 V AC	AC power input
1	NEUTRAL	0	120 V AC/0 V 220-240 V AC/0 V	FH: On/Off
2	LIVE	0	120 V AC 220-240 V AC	AC power to FH
1	+24V1	0	24 V DC	24 V DC power to RYPWB
2	GND	-	-	Ground
3	GND	-	-	Ground
4	GND	-	-	Ground
5	GND	-	-	Ground
6	+24V2	0	24 V DC	24 V DC power to RYPWB (via ILSW)
7	+24V2	0	24 V DC	24 V DC power to RYPWB (via ILSW)
8	+24V2	0	24 V DC	24 V DC power to RYPWB (via ILSW)
9	+24V2	0	24 V DC	24 V DC power to RYPWB (via ILSW)
10	PSSLEEPN	I	0/3.3 V DC	Sleep mode signal: On/Off
11	ZCROSS	0	0/3.3 V DC (pulse)	Zero-cross signal
12	RELAY	I	0/3.3 V DC	Power relay signal: On/Off
13	HEATRE1	- 1	0/3.3 V DC	FH: On/Off
1	+24V1	0	24 V DC	24 V DC power to ILSW
2	N.C	-	-	Not used
3	+24V2	I	24 V DC	24 V DC power from ILSW
1	+24V1	0	24 V DC	24 V DC power to MPWB
2	GND	-	-	Ground
3	GND	-	-	Ground
4	+5V1	0	5 V DC	5 V DC power to MPWB
	1 2 1 2 3 4 5 6 7 8 9 10 11 12 13 1 2 3 1 2 3	1 LIVE 2 NEUTRAL 1 NEUTRAL 1 H24V1 2 GND 3 GND 4 GND 5 GND 6 +24V2 7 +24V2 8 +24V2 9 +24V2 10 PSSLEEPN 11 ZCROSS 12 RELAY 13 HEATRE1 1 +24V1 2 N.C 3 +24V2 1 +24V1 2 GND 3 GND	1 LIVE I 2 NEUTRAL I 1 NEUTRAL O 2 LIVE O 1 +24V1 O 2 GND - 3 GND - 4 GND - 5 GND - 6 +24V2 O 7 +24V2 O 8 +24V2 O 9 +24V2 O 10 PSSLEEPN I 11 ZCROSS O 12 RELAY I 13 HEATRE1 I 1 +24V1 O 2 N.C - 3 +24V2 I 1 +24V1 O 2 GND - 6 SOND O 1 CONTROL O 1 CONTROL O 2 GND O 3 GND O 1 CONTROL O 3 GND O 1 CONTROL O 1 CON	1 LIVE

2-3-2 Engine PWB

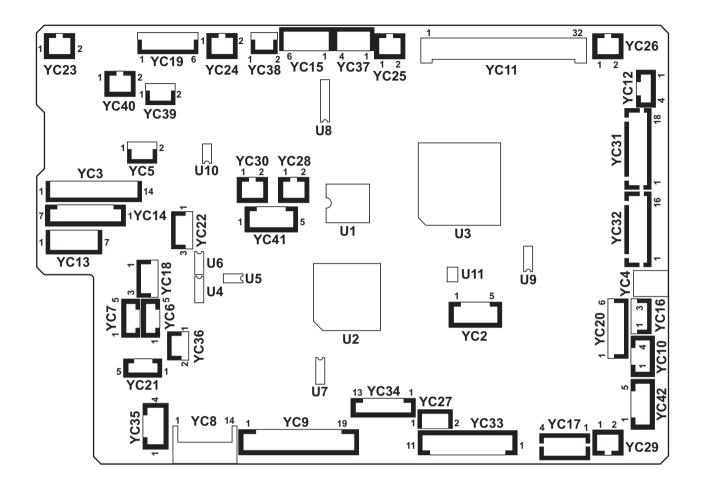


Figure 2-3-2 Engine PWB silk-screen diagram

Connector	Pin	Signal	I/O	Voltage	Description
YC3	1	MPFCLDRN	0	0/24 V DC	MPFCL: On/Off
Connected to	2	+24V3	0	24 V DC	24 V DC power to MPFCL
MP feed	3	FEDCLDRN	0	0/24 V DC	PFCL: On/Off
clutch, paper feed clutch,	4	+24V3	0	24 V DC	24 V DC power to PFCL
paper feed	5	N.C.	-	-	Not used
motor, middle clutch and	6	FEMOTRDYN	I	0/3.3 V DC	PFM ready signal
registration	7	FEMOTCLK	0	0/3.3 V DC (pulse)	PFM clock signal
clutch	8	FEMOTREN	0	0/3.3 V DC	PFM: On/Off
	9	GND	-	-	Ground
	10	+24V3	0	24 V DC	24 V DC power to PFM
	11	MIDCLDRN	0	0/24 V DC	MCL: On/Off
	12	+24V3	0	24 V DC	24 V DC power to MCL
	13	REGCLDRN	0	0/24 V DC	RCL: On/Off
	14	+24V3	0	24 V DC	24 V DC power to RCL
YC4	1	+24V3	0	24 V DC	24 V DC power to MPSOL
Connected to	2	MPSOLDRN	I	0/24 V DC	MPSOL: On/Off
MP solenoid					
YC6	1	VOSL	I	Analog	IDS1 detection signal
Connected to ID sensor 1	2	VOPL	I	Analog	IDS1 detection signal
TD SCHOOL 1	3	GND	-	-	Ground
	4	LEDREFL	0	Analog	IDS1 control signal
	5	+3.3V2	0	3.3 V DC	3.3 V DC power to IDS1
YC7	1	VOSR	I	Analog	IDS2 detection signal
Connected to ID sensor 2	2	VOPR	I	Analog	IDS2 detection signal
ID Selisoi 2	3	GND	-	-	Ground
	4	LEDREFR	0	Analog	IDS2 control signal
	5	+3.3V2	0	3.3 V DC	3.3 V DC power to IDS2

Connector	Pin	Signal	I/O	Voltage	Description
YC8	1	+24V1	I	24 V DC	24 V DC power from RYPWB
Connected to	2	GND	-	-	Ground
relay PWB	3	GND	-	-	Ground
	4	GND	-	-	Ground
	5	GND	-	-	Ground
	6	+24V3	0	24 V DC	24 V DC power from RYPWB
	7	+24V3	0	24 V DC	24 V DC power from RYPWB
	8	+24V3	0	24 V DC	24 V DC power from RYPWB
	9	+24V3	0	24 V DC	24 V DC power from RYPWB
	10	GND	-	-	Ground
	11	SLEEPN	0	0/3.3 V DC	Sleep mode signal: On/Off
	12	HYPINT	0	0/3.3 V DC	Sleep return signal: On/Off
	13	I2CINT	-	-	Not used
	14	+3.3V2	I	3.3 V DC	3.3 V DC power from RYPWB
YC9	1	TCOVOPN	0	0/3.3 V DC	TTSW: On/Off
Connected to	2	EGHOLD	I	0/3.3 V DC	Engine hold signal
relay PWB	3	ZCROSS	I	0/3.3 V DC (pulse)	Zero-cross signal
	4	RELAY	0	0/3.3 V DC	Power relay signal
	5	HEATRE1	0	0/3.3 V DC	FH: On/Off
	6	(HEATRE2)	-	-	Not used
	7	VSYNC	0	0/3.3 V DC	Vertical synchronizing signal
	8	EGIRN	0	0/3.3 V DC	Engine interruption signal
	9	SBSY	0	0/3.3 V DC	Serial busy signal
	10	SDIR	0	0/3.3 V DC	Serial communication direction change signal
	11	SI	I	0/3.3 V DC (pulse)	Serial communication data signal input
	12	so	0	0/3.3 V DC (pulse)	Serial communication data signal output
	13	SCKN	I	0/3.3 V DC (pulse)	Serial communication clock signal
	14	N.C.	-	-	Not used
	15	I2CSCL	I	0/3.3 V DC (pulse)	EEPROM clock signal
	16	GND	-	-	Ground
	17	I2CSDA	I/O	0/3.3 V DC (pulse)	EEPROM data signal
	18	MPFJAM	I	0/3.3 V DC	MPPCS: On/Off
	19	+3.3V1_MFP	0	3.3 V DC	3.3 V DC power to RYPWB

Connector	Pin	Signal	I/O	Voltage	Description
YC10	1	LEDA	0	3.3 V DC	3.3 V DC power to WTS
Connected to waste toner sensor	2	LEDK	0	0/3.3 V DC (pulse)	WTS LED emitter signal
	3	PTRE	I	Analog	WTS detection signal
	4	PTRC	0	3.3 V DC	3.3 V DC power to WTS
YC11	1	+24V3	0	24 V DC	24 V DC power to HVPWB
Connected to high voltage PWB	2	+24V3	0	24 V DC	24 V DC power to HVPWB
	3	T1CCNT	0	PWM	Primary transfer bias control voltage (Cyan)
	4	HVCLKY	0	0/3.3 V DC (pulse)	Developing bias clock signal (Yellow)
	5	T1MCNT	0	PWM	Primary transfer bias control voltage (Magenta)
	6	HVCLKC	0	0/3.3 V DC (pulse)	Developing bias clock signal (Cyan)
	7	T2CNT	0	PWM	Secondary transfer bias control voltage
	8	BCMCNT	0	PWM	Developing magnet roller bias control voltage (Cyan)
	9	CLCNT	0	PWM	Cleaning bias control voltage
	10	BKMCNT	0	PWM	Developing magnet roller bias control voltage (Black)
	11	T1YCNT	0	PWM	Primary transfer bias control voltage (Yellow)
	12	BKSCNT	0	PWM	Developing sleeve roller bias control voltage (Black)
	13	T1KCNT	0	PWM	Primary transfer bias control voltage (Black)
	14	BYSCNT	0	PWM	Developing sleeve roller bias control voltage (Yellow)
	15	MYCNT	0	PWM	Charger roller control voltage (Yellow)
	16	BMMCNT	0	PWM	Developing magnet roller bias control voltage (Magenta)
	17	MKCNT	0	PWM	Charger roller control voltage (Black)
	18	BYMCNT	0	PWM	Developing magnet roller bias control voltage (Yellow)
	19	MCCNT	0	PWM	Charger roller control voltage (Cyan)
	20	T2RREM	0	0/3.3 V DC (pulse)	Secondary transfer bias reverse signal
	21	MMCNT	0	PWM	Charger roller control voltage (Magenta)
	22	BMSCNT	0	PWM	Developing sleeve roller bias control voltage (Magenta)
	23	MISENS	Ι	Analog	Charger roller AC current signal
	24	BKACNT	0	PWM	Developing AC bias control voltage (Black)

Connector	Pin	Signal	I/O	Voltage	Description
YC11	25	BCACNT	0	PWM	Developing AC bias control voltage
					(Cyan)
Connected to high voltage PWB	26	BMACNT	0	PWM	Developing AC bias control voltage (Magenta)
	27	BYACNT	0	PWM	Developing AC bias control voltage (Yellow)
	28	HVCLKK	0	0/3.3 V DC (pulse)	Developing bias clock signal (Black)
	29	BCSCNT	0	PWM	Developing sleeve roller bias control voltage (Cyan)
	30	HVCLKM	0	0/3.3 V DC (pulse)	Developing bias clock signal (Magenta)
	31	GND	-	-	Ground
	32	GND	-	-	Ground
YC13	1	MOTREV (GND)	-	-	Ground
Connected to	2	MOTRDYN	I	0/3.3 V DC	DRM ready signal
drum motor	3	SPEEDSEL	0	0/3.3 V DC	DRM speed selection signal
	4	MOTCLK	0	0/3.3 V DC (pulse)	DRM clock signal
	5	MOTEN	0	0/3.3 V DC	DRM: On/Off
	6	GND	-	-	Ground
	7	+24V3	0	24 V DC	24 V DC power to DRM
YC14	1	+24V3	0	24 V DC	24 V DC power to DEVM
Connected to	2	GND	-	-	Ground
developing motor	3	DLPMOTREN	0	0/3.3 V DC	DEVM: On/Off
IIIOtoi	4	DLPMOTCLK	0	0/3.3 V DC (pulse)	DEVM clock signal
	5	DLPMOT RDYN	I	0/3.3 V DC	DEVM ready signal
	6	MOTREV	0	0/3.3 V DC	DEVM drive switch signal
YC15	1	IMAMOT RDYN	I	0/3.3 V DC	FUM ready signal
Connected to fuser motor	2	IMAMOTCLK	0	0/3.3 V DC (pulse)	FUM clock signal
	3	IMAMOTREN	0	0/3.3 V DC	FUM: On/Off
	4	GND	-	-	Ground
	5	+24V3	0	24 V DC	24 V DC power to FUM
YC16	1	+3.3V2_LED1	0	3.3 V DC	3.3 V DC power to MPPS
Connected to MP paper sensor	2	GND	-	-	Ground
	3	MPFPAP	I	0/3.3 V DC	MPPS: On/Off

Connector	Pin	Signal	I/O	Voltage	Description
YC17	1	CAS2	I	0/3.3 V DC	CSSW (SW2): On/Off
Connected to	2	CAS1	I	0/3.3 V DC	CSSW (SW1): On/Off
cassette size switch	3	СОМ	-	-	Ground
SWILCH	4	CAS0	I	0/3.3 V DC	CSSW (SW0): On/Off
YC18	1	+3.3V2_LED2	0	3.3 V DC	3.3 V DC power to RS
Connected to	2	GND	-	-	Ground
registration sensor	3	REGPAP	I	0/3.3 V DC	RS: On/Off
YC19	1	PDIRN	I	0/3.3 V DC	EVSW: On/Off
Connected to	2	+3.3V2	0	3.3 V DC	3.3 V DC power to EJPWB
eject PWB	3	FTHERM	I	Analog	FTH detection voltage
	4	FUSPAP	I	0/3.3 V DC	ES: On/Off
	5	NC	-	-	Not used
	6	GND	-	-	Ground
YC20	1	+3.3V2_LED3	0	3.3 V DC	3.3 V DC power to TCS
Connected to	2	GND	-	-	Ground
toner con- tainer sensor	3	TCONTN	I	0/3.3 V DC	TCS: On/Off
and waste	4	+3.3V2_LED7	0	3.3 V DC	3.3 V DC power to WTCS
toner cover	5	GND	-	-	Ground
sensor	6	WSTOPN	I	0/3.3 V DC	WTCS: On/Off
YC21	1	GND	-	-	Ground
Connected to	2	PAPVOL2	-	-	Not used
cassette PWB	3	PAPVOL1	I	0/3.3 V DC	PS: On/Off
I WD	4	LIFTSEN	I	0/3.3 V DC	LS: On/Off
	5	+3.3V2	0	3.3 V DC	3.3 V DC power to CPWB
YC23	1	+24V3	0	24 V DC	24 V DC power to TM-K
Connected to toner motor K	2	TNMKDRN	0	0/24 V DC	TM-K: On/Off
YC24	1	+24V3	0	24 V DC	24 V DC power to TM-M
Connected to toner motor M	2	TNMMDRN	0	0/24 V DC	TM-M: On/Off
YC25	1	+24V3	0	24 V DC	24 V DC power to TM-C
Connected to toner motor C	2	TNMCDRN	0	0/24 V DC	TM-C: On/Off
YC26	1	+24V3	0	24 V DC	24 V DC power to TM-Y
Connected to toner motor Y	2	TNMYDRN	0	0/24 V DC	TM-Y: On/Off

Connector	Pin	Signal	I/O	Voltage	Description
YC27	1	LMOTDRN	0	0/24 V DC	LM: On/Off
Connected to lift motor	2	GND	1	-	Ground
YC28	1	+24V1	0	24 V DC	24 V DC power to CFM
Connected to container fan motor	2	TCONTFAN DRN	0	0/12/24 V DC	CFM: Full speed/Half speed/Off
YC29	1	+24V1	0	24 V DC	24 V DC power to LFM
Connected to left fan motor	2	LFANDRN	0	0/12/24 V DC	LFM: Full speed/Half speed/Off
YC30	1	TOPOPN	0	0/3.3 V DC	TTSW: On/Off
Connected to top tray switch	2	GND	1	-	Ground
YC31	1	GND	1	-	Ground
Connected to	2	VREFK	0	Analog	APCPWB-K laser power standard voltage
laserscanner unit KM	3	LONBKN	0	0/3.3 V DC	APCPWB-K sample/hold signal
ariit ravi	4	ENBKN	0	0/3.3 V DC	APCPWB-K laser enable signal
	5	PDKN	I	0/3.3 V DC (pulse)	Horizontal synchronizing signal
	6	GND	-	-	Ground
	7	VREFM	0	Analog	APCPWB-M laser power standard voltage
	8	LONBMN	0	0/3.3 V DC	APCPWB-M sample/hold signal
	9	ENBMN	0	0/3.3 V DC	APCPWB-M laser enable signal
	10	PDMN	I	0/3.3 V DC (pulse)	Horizontal synchronizing signal
	11	LSUTHERMM	I	Analog	ITEMS detection voltage
	12	POLCLK1	0	0/3.3 V DC (pulse)	PM-KM clock signal
	13	POLRDYN1	I	0/3.3 V DC	PM-KM ready signal
	14	POLONN1	0	0/3.3 V DC	PM-KM: On/Off
	15	GND	-	-	Ground
	16	+24V3	0	24 V DC	24 V DC power to PM-KM
	17	N.C.	-	-	Not used
	18	N.C.	-	-	Not used

Connector	Pin	Signal	I/O	Voltage	Description
YC32	1	GND	-	-	Ground
Connected to	2	VREFC	0	Analog	APCPWB-C laser power standard voltage
laser scanner unit CY	3	LONBCN	0	0/3.3 V DC	APCPWB-C sample/hold signal
unit O1	4	ENBCN	0	0/3.3 V DC	APCPWB-C laser enable signal
	5	PDCN	I	0/3.3 V DC (pulse)	Horizontal synchronizing signal
	6	GND	-	-	Ground
	7	VREFY	0	Analog	APCPWB-Y laser power standard voltage
	8	LONBYN	0	0/3.3 V DC	APCPWB-Y sample/hold signal
	9	ENBYN	0	0/3.3 V DC	APCPWB-Y laser enable signal
	10	PDYN	I	0/3.3 V DC (pulse)	Horizontal synchronizing signal
	11	LSUTHERMY	-	-	Not used
	12	POLCLK0	0	0/3.3 V DC (pulse)	PM-CY clock signal
	13	POLRDYN0	I	0/3.3 V DC	PM-CY ready signal
	14	POLONN0	0	0/3.3 V DC	PM-CY: On/Off
	15	GND	-	-	Ground
	16	+24V3	0	24 V DC	24 V DC power to PM-CY
YC33	1	GND	-	-	Ground
Connected to	2	OPSCLK	0	0/3.3 V DC (pulse)	Paper feeder clock signal
paper feeder	3	OPRDYN	I	0/3.3 V DC	Paper feeder ready signal
	4	OPSDI	I	0/3.3 V DC (pulse)	Paper feeder serial communication data signal input
	5	OPSDO	0	0/3.3 V DC (pulse)	Paper feeder serial communication data signal output
	6	+3.3V1	0	3.3 V DC	3.3 V DC power to paper feeder
	7	GND	-	-	Ground
	8	OPSEL0	0	0/3.3 V DC	Paper feeder selection signal
	9	OPSEL1	0	0/3.3 V DC	Paper feeder selection signal
	10	OPSEL2	0	0/3.3 V DC	Paper feeder selection signal
	11	+24V3	0	24 V DC	24 V DC power to paper feeder

Connector	Pin	Signal	I/O	Voltage	Description
YC34	1	TNSENM	ı	Analog	TS-M detection voltage
Connected to	2	ERASECDR	Ο	0/24 V DC	CL-C: On/Off
drum relay PWB	3	TNSENK	1	Analog	TS-K detection voltage
FVVD	4	ERASEMDR	Ο	0/24 V DC	CL-M: On/Off
	5	DLPTHERM	1	Analog	DEVTH detection voltage
	6	ERASEKDR	0	0/24 V DC	CL-K: On/Off
	7	+3.3V2	0	3.3 V DC	3.3 V DC power to DRRPWB
	8	EECLK	0	0/3.3 V DC (pulse)	EEPROM clock signal
	9	GND	-	-	Ground
	10	EEDATA	I/O	0/3.3 V DC (pulse)	EEPROM data signal
	11	TNSENY	I	Analog	TS-Y detection voltage
	12	ERASEYDR	0	0/24 V DC	CL-Y: On/Off
	13	TNSENC	I	Analog	TS-C detection voltage
YC35	1	DLPDIRN	I	0/3.3 V DC	DEVRSW: On/Off
Connected to	2	GND	-	-	Ground
developing release	3	DLPCMOTA	0	24/0 V DC	DEVRM: Forward/Stop (Reverse)
switch and	4	DLPCMOTB	Ο	24/0 V DC	DEVRM: Reverse/Stop (Forward)
developing					
release motor					
YC36	1	LSUMOTA	0	24/0 V DC	LSUCM: Forward/Stop (Reverse)
Connected to	2	LSUMOTB	0	24/0 V DC	LSUCM: Reverse/Stop (Forward)
LSU clean-					
ing motor		0.751.151.1		2/2/1/20/	
YC37	1	STDUBN	0	0/24 V DC (pulse)	DUM drive control signal
Connected to duplex motor	2	STDUAN	0	0/24 V DC (pulse)	DUM drive control signal
aupiox motor	3	STDUB	0	0/24 V DC (pulse)	DUM drive control signal
\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	4	STDUA	0	0/24 V DC (pulse)	DUM drive control signal
YC38	1	PREMOTDRN	0	0/24 V DC	FPRM: On/Off
Connected to fuser pres-	2	GND	-	-	Ground
sure release					
motor					
YC40	1	+24V1	0	24 V DC	24 V DC power to FUFM
Connected to fuser fan	2	FUFANDRN	0	0/12/24 V DC	FUFM: Full speed/Half speed/Off
motor					

Connector	Pin	Signal	I/O	Voltage	Description
YC42	1	GND	-	-	Ground
Connected to	2	AIRTEMP	I	Analog	OTEMS detection voltage (temperature)
outer temper- ature sensor	3	WETCLK0	0	0/3.3 V DC (pulse)	OTEMS clock signal
ature serisor	4	WETCLK1	0	0/3.3 V DC (pulse)	OTEMS clock signal
	5	AIRWETOUT	I	Analog	OTEMS detection voltage (humidity)

2-3-3 Main PWB

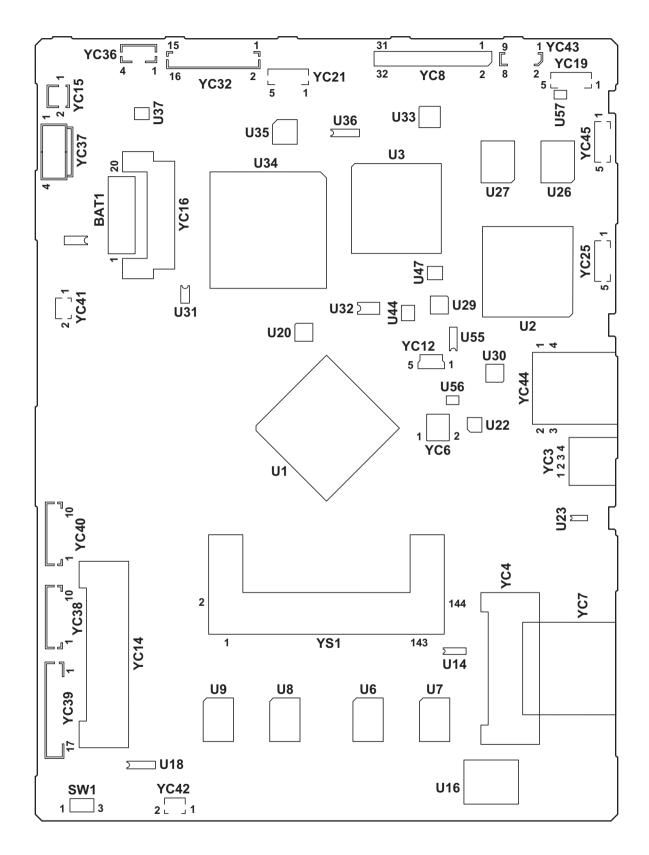


Figure 2-3-3 Main PWB silk-screen diagram

Connector	Pin	Signal	I/O	Voltage	Description
YC3	1	VBUS	0	5 V DC	5 V DC power output
Connected to	2	DATA-	I/O	-	USB data signal
USB	3	DATA+	I/O	-	USB data signal
	4	GND	-	-	Ground
YC8	1	CCDSW	0	0/3.3 V DC	CCD color/BW change signal
Connected to	2	CCDSH	0	0/3.3 V DC	CCD shift gate signal
CCD PWB	3	CCDCLPN	0	LVDS	CCD clamp signal
	4	CCDCLPP	0	LVDS	CCD clamp signal
	5	NC	-	-	Not used
	6	CCDRSP	0	LVDS	CCD reset signal
	7	CCDRSN	0	LVDS	CCD reset signal
	8	NC	-	-	Not used
	9	CCDPH1N	0	LVDS	CCD shift register clock signal
	10	CCDPH1P	0	LVDS	CCD shift register clock signal
	11	NC	-	-	Not used
	12	CCDPH2P	0	LVDS	CCD shift register clock signal
	13	CCDPH2N	0	LVDS	CCD shift register clock signal
	14	NC	-	-	Not used
	15	+3.3VS	0	3.3 V DC	3.3 V DC power to CCDPWB
	16	HPSWN	I	0/3.3 V DC	HPS: On/Off
	17	NC	-	-	Not used
	18	+24V_LAMP	0	24 V DC	24 V DC power to CCDPWB
	19	LAMPTH	0	0/3.3 V DC	EL drive signal
	20	GND_LAMP	-	-	Ground
	21	NC	-	-	Not used
	22	GND	-	-	Ground
	23	CCDDATAB	I	Analog	CCD image output signal (B)
	24	GND	-	-	Ground
	25	CCDDATAG	I	Analog	CCD image output signal (G)
	26	GND	-	-	Ground
	27	CCDDATAR	I	Analog	CCD image output signal (R)
	28	GND	-	-	Ground
	29	NC	-	-	Not used
	30	+5V1	0	5 V DC	5 V DC power to CCDPWB
	31	NC	-	-	Not used
	32	+12VS	0	DC12V	12 V DC power to CCDPWB

Connector	Pin	Signal	I/O	Voltage	Description
YC12	1	VBUS	0	5 V DC	5 V DC power output
Connected to	2	DATA-	I/O	-	USB data signal
USB	3	DATA+	I/O	-	USB data signal
	4	GND	-	-	Ground
	5	GND	-	-	Ground
YC14	A1	NC	-	-	Not used
Connected to	B1	NC	-	-	Not used
KUIO slot	A2	NC	-	-	Not used
	B2	NC	-	-	Not used
	А3	GND	-	-	Ground
	В3	3.3V	0	3.3 V DC	3.3 V DC power output
	A4	3.3V	0	3.3 V DC	3.3 V DC power output
	B4	A15	0	0/3.3 V DC (pulse)	Address bus signal
	A5	GND	-	-	Ground
	B5	A14	0	0/3.3 V DC (pulse)	Address bus signal
	A6	A13	0	0/3.3 V DC (pulse)	Address bus signal
	В6	A12	0	0/3.3 V DC (pulse)	Address bus signal
	A7	A11	0	0/3.3 V DC (pulse)	Address bus signal
	В7	A10	0	0/3.3 V DC (pulse)	Address bus signal
	A8	A9	0	0/3.3 V DC (pulse)	Address bus signal
	B8	A8	0	0/3.3 V DC (pulse)	Address bus signal
	A9	GND	-	-	Ground
	В9	A7	0	0/3.3 V DC (pulse)	Address bus signal
	A10	A6	0	0/3.3 V DC (pulse)	Address bus signal
	B10	A5	0	0/3.3 V DC (pulse)	Address bus signal
	A11	A4	0	0/3.3 V DC (pulse)	Address bus signal
	B11	A3	0	0/3.3 V DC (pulse)	Address bus signal
	A12	A2	0	0/3.3 V DC (pulse)	Address bus signal
	B12	A1	0	0/3.3 V DC (pulse)	Address bus signal
	A13	GND	-	-	Ground
	B13	3.3V	0	3.3 V DC	3.3 V DC power output
	A14	OP2IFN	0	0/3.3 V DC	Select signal
	B14	OP2ACKN	I	0/3.3 V DC (pulse)	OP2ACKN signal
	A15	OP2IRN	I	0/3.3 V DC	Interruption signal
	B15	5V	0	5 V DC	5 V DC power output
	A16	RDY	0	0/3.3 V DC	Ready signal

Connector	Pin	Signal	I/O	Voltage	Description
YC14	B16	RXDREQ	I	0/3.3 V DC	Reception DMA request signal
Connected to	A17	GND	-	-	Ground
KUIO slot	B17	RXDMACKN	0	0/3.3 V DC (pulse)	Reception DMACK signal
	A18	IORN	0	0/3.3 V DC	Read enable signal
	B18	IOWN	0	0/3.3 V DC	Write enable signal
	A19	RESETN	0	0/3.3 V DC	Reset signal
	B19	VOLTDETECT	-	-	Ground
	A20	D15	I/O	0/3.3 V DC (pulse)	Data bus signal
	B20	D14	I/O	0/3.3 V DC (pulse)	Data bus signal
	A21	GND	-	-	Ground
	B21	D13	I/O	0/3.3 V DC (pulse)	Data bus signal
	A22	D12	I/O	0/3.3 V DC (pulse)	Data bus signal
	B22	D11	I/O	0/3.3 V DC (pulse)	Data bus signal
	A23	D10	I/O	0/3.3 V DC (pulse)	Data bus signal
	B23	D9	I/O	0/3.3 V DC (pulse)	Data bus signal
	A24	D8	I/O	0/3.3 V DC (pulse)	Data bus signal
	B24	D7	I/O	0/3.3 V DC (pulse)	Data bus signal
	A25	GND	-	-	Ground
	B25	D6	I/O	0/3.3 V DC (pulse)	Data bus signal
	A26	D5	I/O	0/3.3 V DC (pulse)	Data bus signal
	B26	D4	I/O	0/3.3 V DC (pulse)	Data bus signal
	A27	D3	I/O	0/3.3 V DC (pulse)	Data bus signal
	B27	D2	I/O	0/3.3 V DC (pulse)	Data bus signal
	A28	D1	I/O	0/3.3 V DC (pulse)	Data bus signal
	B28	D0	I/O	0/3.3 V DC (pulse)	Data bus signal
	A29	GND	-	-	Ground
	B29	NC	-	-	Not used
	A30	NC	-	-	Not used
	B30	NC	ı	-	Not used
YC15	1	OUT-	0	Analog	Speaker sound signal (-)
Connected to	2	OUT+	0	Analog	Speaker sound signal (+)
speaker					

Connector	Pin	Signal	I/O	Voltage	Description
YC32	1	FEEDCL	0	0/24 V DC	DPPFCL: On/Off
Connected to	2	REVSOL	0	0/24 V DC	DPSBSOL: On/Off
DP drive PWB	3	PRESOLN	0	0/24 V DC	DPPRSOL: On (Press)/Off
PVVB	4	RELSOLN	0	0/24 V DC	DPPRSOL: On (Release)/Off
	5	DPDETN	I	0/3.3 V DC	DP set signal
	6	OPSWN	I	0/3.3 V DC	DPOCS: On/Off
	7	ORGSWN	- 1	0/3.3 V DC	DPOS: On/Off
	8	TIMSWN	1	0/3.3 V DC	DPTS: On/Off
	9	GND	-	-	Ground
	10	+3.3V2	0	3.3 V DC	3.3 V DC power to DPDPWB
	11	GND	-	-	Ground
	12	+24V2	0	24 V DC	24 V DC power to PDPWB
	13	MOTB2	0	0/24 V DC (pulse)	DPPFM drive control signal
	14	MOTA2	0	0/24 V DC (pulse)	DPPFM drive control signal
	15	MOTB1	0	0/24 V DC (pulse)	DPPFM drive control signal
	16	MOTA1	0	0/24 V DC (pulse)	DPPFM drive control signal
YC36	1	SCMOTB2	0	0/24 V DC (pulse)	ISUM drive control signal
Connected to	2	SCMOTA1	0	0/24 V DC (pulse)	ISUM drive control signal
ISU motor	3	SCMOTB1	0	0/24 V DC (pulse)	ISUM drive control signal
	4	SCMOTA2	0	0/24 V DC (pulse)	ISUM drive control signal
YC37	1	+24V1	I	24 V DC	24 V DC power from PSPWB
Connected to	2	GND	-	-	Ground
power source PWB	3	GND	-	-	Ground
LAAD	4	+5V1	- 1	5 V DC	5 V DC power from PSPWB
YC38	1	GND	-	-	Ground
Connected to	2	+3.3V3	0	3.3 V DC	3.3 V DC power to APCPWB-M
laser scanner unit KM	3	PDMN	1	0/3.3 V DC (pulse)	Horizontal synchronizing signal
unit Rivi	4	VDOMP	0	LVDS	APCPWB-M video data signal (+)
	5	VDOMN	0	LVDS	APCPWB-M video data signal (-)
	6	GND	-	-	Ground
	7	+3.3V3	0	3.3 V DC	3.3 V DC power to APCPWB-K
	8	PDKN	1	0/3.3 V DC (pulse)	Horizontal synchronizing signal
	9	VDOKP	0	LVDS	APCPWB-K video data signal (+)
	10	VDOKN	0	LVDS	APCPWB-K video data signal (-)

Connector	Pin	Signal	I/O	Voltage	Description
YC39	1	+3.3V1_MFP	0	3.3 V DC	3.3 V DC power to RYPWB
Connected to	2	I2CSDA	I/O	0/3.3 V DC (pulse)	EEPROM data signal
relay PWB	3	GND	-	-	Ground
	4	I2CSCL	0	0/3.3 V DC (pulse)	EEPROM clock signal
	5	SCKN	Ο	0/3.3 V DC (pulse)	Serial communication clock signal
	6	so	1	0/3.3 V DC (pulse)	Serial communication data signal input
	7	SI	0	0/3.3 V DC (pulse)	Serial communication data signal output
	8	SDIR	I	0/3.3 V DC	Serial communication direction change signal
	9	SBSY	I	0/3.3 V DC	Serial busy signal
	10	EGIRN	I	0/3.3 V DC	Engine interruption signal
	11	VSYNC	I	0/3.3 V DC (pulse)	Vertical synchronizing signal
	12	+3.3V2	0	3.3 V DC	3.3 V DC power to RYPWB
	13	GND	-	-	Ground
	14	EGHOLD	0	0/3.3 V DC	Engine hold signal
	15	I2CINT	-	-	Not used
	16	HYPINT	I	0/3.3 V DC	Sleep return signal: On/Off
	17	PSSLEEPN	0	0/3.3 V DC	Sleep mode signal: On/Off
YC40	1	GND	-	-	Ground
Connected to	2	+3.3V3	0	3.3 V DC	3.3 V DC power to APCPWB-Y
laser scanner unit CY	3	PDYN	I	0/3.3 V DC (pulse)	Horizontal synchronizing signal
	4	VDOYP	0	LVDS	APCPWB-Y video data signal (+)
	5	VDOYN	0	LVDS	APCPWB-Y video data signal (-)
	6	GND	-	-	Ground
	7	+3.3V3	0	3.3 V DC	3.3 V DC power to APCPWB-C
	8	PDCN	I	0/3.3 V DC (pulse)	Horizontal synchronizing signal
	9	VDOCP	0	LVDS	APCPWB-C video data signal (+)
	10	VDOCN	0	LVDS	APCPWB-C video data signal (-)
YC41	1	+24V1	0	24 V DC	24 V DC power to CONFM
Connected to controller fan motor	2	CONTFAN DRN	0	0/12/24 V DC	CONFM: Full speed/Half speed/Off
YC42	1	+24V1	0	24 V DC	24 V DC power to RFM
Connected to right fan motor	2	RFANDRN	0	0/12/24 V DC	RFM: Full speed/Half speed/Off

Connector	Pin	Signal	I/O	Voltage	Description
YC43	1	+5V1	-	5 V DC	5 V DC power to OPPWB
Connected to	2	POWERKEY	I	0/3.3 V DC	Power key input signal
operation	3	FPRSTN	0	0/3.3 V DC	OPPWB reset signal
panel PWB	4	PANTXD	0	0/3.3 V DC (pulse)	OPPWB transmission data
	5	PANRXD	I	0/3.3 V DC (pulse)	OPPWB received data
	6	+3.3V	0	3.3 V DC	3.3 V DC power to OPPWB
	7	PANEL_ MODE1	0	0/3.3 V DC	OPPWB mode signal
	8	GND	-	-	Ground
	9	PANEL_ MODE0	0	0/3.3 V DC	OPPWB mode signal
YC44	1	TCT	0	3.3 V DC	3.3 V DC power output
Connected to	2	TD+	0	0/3.3 V DC (pulse)	Transmission data
ethernet	3	TD-	0	0/3.3 V DC (pulse)	Transmission data
	4	RD+	I	0/3.3 V DC (pulse)	Received data
	5	RD-	I	0/3.3 V DC (pulse)	Received data
	6	RCT	0	3.3 V DC	3.3 V DC power output
	7	CAT PHY	0	0/3.3 V DC	Control signal
	8	ANO PHY	0	3.3 V DC	3.3 V DC power output
	9	CAT MAC	-	-	Ground
	10	ANO MAC	0	0/3.3 V DC	Control signal

2-3-4 Drum relay PWB

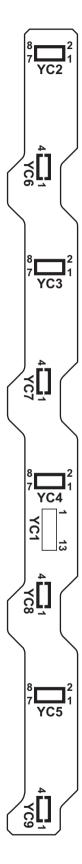


Figure 2-3-4 Drum relay PWB silk-screen diagram

Connector	Pin	Signal	I/O	Voltage	Description
YC1	1	TNSENM	0	Analog	TS-M detection voltage
Connected to	2	ERASECDR	1	0/24 V DC	CL-C: On/Off
engine PWB	3	TNSENK	0	Analog	TS-K detection voltage
	4	ERASEMDR	1	0/24 V DC	CL-M: On/Off
	5	DLPTHERM	0	Analog	DEVTH detection voltage
	6	ERASEKDR	1	0/24 V DC	CL-K: On/Off
	7	+3.3V2	1	3.3 V DC	3.3 V DC power from EPWB
	8	EECLK	I	0/3.3 V DC (pulse)	EEPROM clock signal
	9	GND	-	-	Ground
	10	EEDATA	I/O	0/3.3 V DC (pulse)	EEPROM data signal
	11	TNSENY	0	Analog	TS-Y detection voltage
	12	ERASEYDR	1	0/24 V DC	CL-Y: On/Off
	13	TNSENC	0	Analog	TS-C detection voltage
YC2	1	GND	-	-	Ground
Connected to	2	EECLK	0	0/3.3 V DC (pulse)	EEPROM clock signal
drum PWB K	3	ERASEKDR	0	0/24 V DC	CL-K: On/Off
	4	EEDATA	I/O	0/3.3 V DC (pulse)	EEPROM data signal
	5	N.C.	-	-	Not used
	6	+3.3V2	0	3.3 V DC	3.3 V DC power to DRPWB-K
	7	DA0	-	-	Not used
	8	DA1	-	-	Not used
YC3	1	GND	-	-	Ground
Connected to	2	EECLK	0	0/3.3 V DC (pulse)	EEPROM clock signal
drum PWB M	3	ERASEMDR	0	0/24 V DC	CL-M: On/Off
	4	EEDATA	I/O	0/3.3 V DC (pulse)	EEPROM data signal
	5	N.C.	-	-	Not used
	6	+3.3V2	0	3.3 V DC	3.3 V DC power to DRPWB-M
	7	DA0	-	-	Ground
	8	DA1	-	-	Not used
YC4	1	GND	-	-	Ground
Connected to	2	EECLK	0	0/3.3 V DC (pulse)	EEPROM clock signal
drum PWB C	3	ERASECDR	0	0/24 V DC	CL-C: On/Off
	4	EEDATA	I/O	0/3.3 V DC (pulse)	EEPROM data signal
	5	N.C.	-	-	Not used
	6	+3.3V2	0	3.3 V DC	3.3 V DC power to DRPWB-C
	7	DA0	-	_	Not used
	8	DA1	-	-	Ground

Connector	Pin	Signal	I/O	Voltage	Description
YC5	1	GND	-	-	Ground
Connected to	2	EECLK	0	0/3.3 V DC (pulse)	EEPROM clock signal
drum PWB Y	3	ERASEYDR	0	0/24 V DC	CL-Y: On/Off
	4	EEDATA	I/O	0/3.3 V DC (pulse)	EEPROM data signal
	5	N.C.	-	_	Not used
	6	+3.3V2	0	3.3 V DC	3.3 V DC power to DRPWB-Y
	7	DA0	-	_	Ground
	8	DA1	-	-	Ground
YC6	1	GND	-	-	Ground
Connected to	2	TNSENK	I	Analog	TS-K detection voltage
developing PWB K	3	+3.3V2	0	3.3 V DC	3.3 V DC power to DEVPWB-K
PWBK	4	DLPTHERM	I	Analog	DEVTH detection voltage
YC7	1	GND	-	-	Ground
Connected to	2	TNSENM	I	Analog	TS-M detection voltage
developing	3	+3.3V2	0	3.3 V DC	3.3 V DC power to DEVPWB-M
PWB M	4	N.C.	-	-	Not used
YC10	1	GND	-	-	Ground
Connected to	2	TNSENC	ı	Analog	TS-C detection voltage
developing	3	+3.3V2	0	3.3 V DC	3.3 V DC power to DEVPWB-C
PWB C	4	N.C.	-	-	Not used
YC13	1	GND	-	-	Ground
Connected to	2	TNSENY	I	Analog	TS-Y detection voltage
developing	3	+3.3V2	0	3.3 V DC	3.3 V DC power to DEVPWB-Y
PWB Y	4	N.C.	-	-	Not used

2-3-5 DP drive PWB

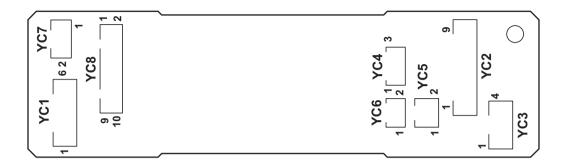


Figure 2-3-5 DP drive PWB silk-screen diagram

Connector	Pin	Signal	I/O	Voltage	Description
YC1	1	MOTA1	I	0/24 V DC (pulse)	DPPFM drive control signal
Connected to	2	MOTB1	I	0/24 V DC (pulse)	DPPFM drive control signal
main PWB	3	MOTA2	ı	0/24 V DC (pulse)	DPPFM drive control signal
	4	MOTB2	ı	0/24 V DC (pulse)	DPPFM drive control signal
	5	+24V2	ı	24 V DC	24 V DC power from MPWB
	6	GND	-	-	Ground
YC2	1	+3.3V2	0	3.3 V DC	3.3 V DC power to DPOCS
Connected to	2	GND	-	-	Ground
DP open/	3	OPSWN	I	0/3.3 V DC	DPOCS: On/Off
close sen- sor, DP origi-	4	+3.3V2	0	3.3 V DC	3.3 V DC power to DPOS
nal sensor	5	GND	-	-	Ground
and DP tim- ing sensor	6	ORGSWN	ı	0/3.3 V DC	DPOS: On/Off
ing sensor	7	+3.3V2	0	3.3 V DC	3.3 V DC power to DPTS
	8	GND	-	-	Ground
	9	TIMSWN	ı	0/3.3 V DC	DPTS: On/Off
YC3	1	DPMOT1A	0	0/24 V DC (pulse)	DPPFM drive control signal
Connected to	2	DPMOT2A	0	0/24 V DC (pulse)	DPPFM drive control signal
DP paper	3	DPMOT1B	0	0/24 V DC (pulse)	DPPFM drive control signal
feed motor	4	DPMOT2B	0	0/24 V DC (pulse)	DPPFM drive control signal
YC4	1	+24V2	0	24 V DC	24 V DC power to DPPRSOL
Connected to	2	PRESOLN	0	0/24 V DC	DPPRSOL: On (Press)/Off
DP pressure solenoid	3	RELSOLN	0	0/24 V DC	DPPRSOL: On (Release)/Off
YC5	1	+24V2	0	24 V DC	24 V DC power to DPSBSOL
Connected to DP switch-back sole-noid	2	REVSOL	0	0/24 V DC	DPSBSOL: On/Off
YC6	1	+24V2	0	24 V DC	24 V DC power to DPPFCL
Connected to DP paper feed clutch	2	FEEDCL	0	0/24 V DC	DPPFCL: On/Off

Connector	Pin	Signal	I/O	Voltage	Description
YC8	1	+3.3V2	I	3.3 V DC	3.3 V DC power from MPWB
Connected to	2	GND	-	-	Ground
main PWB	3	TIMSWN	0	0/3.3 V DC	DPTS: On/Off
	4	ORGSWN	0	0/3.3 V DC	DPOS: On/Off
	5	OPSWN	0	0/3.3 V DC	DPOCS: On/Off
	6	DPDETN	0	0/3.3 V DC	DP set signal
	7	RELSOLN	- 1	0/24 V DC	DPPRSOL: On (Release)/Off
	8	PRESOLN	I	0/24 V DC	DPPRSOL: On (Press)/Off
	9	REVSOL	I	0/24 V DC	DPSBSOL: On/Off
	10	FEEDCL	1	0/24 V DC	DPPFCL: On/Off

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2-4-1 Appendixes

(1) Maintenance kits

Mainte	Parts No.	Alternative	
Name used in service	Name used in parts list	Parts No.	part No.
MK-592/Maintenance kit	MK-592/MAINTENANCE KIT	1702KV7US0	072KV7US
Developing unit K	DV-560 US (K)	-	-
Developing unit M	DV-560 US (M)	-	-
Developing unit C	DV-560 US (C)	-	-
Developing unit Y	DV-560 US (Y)	-	-
Drum unit	DK-590	-	-
Intermediate transfer unit	TR-590	-	-
Fuser unit	FK-590(U)	-	-
Retard roller unit	PARTS HOLDER RETARD ASSY SP	-	-
Paper feed roller unit	PARTS HOLDER FEED ASSY SP	-	-
MP paper feed roller	ROLLER M/P ASSY	-	-
MK-590/Maintenance kit	MK-590/MAINTENANCE KIT	1702KV8NL0	072KV8NL
Developing unit K	DV-560(K)	-	-
Developing unit M	DV-560(M)	-	-
Developing unit C	DV-560(C)	-	-
Developing unit Y	DV-560(Y)	-	-
Drum unit	DK-590	-	-
Intermediate transfer unit	TR-590	-	-
Fuser unit	FK-590(E)	-	-
Retard roller unit	PARTS HOLDER RETARD ASSY SP	-	-
Paper feed roller unit	PARTS HOLDER FEED ASSY SP	-	-
MP paper feed roller	ROLLER M/P ASSY	-	-

(2) Repetitive defects gauge

-	First occurrence of defect	
 -	31 mm/1 1/4"	Rear registration roller
-	38 mm/1 1/2"	Charger roller
-	50 mm/1 15/16" 50 mm/1 15/16"	Front registration roller Sleeve roller
-	59 mm/2 5/16"	Transfer roller
-	79/3 1/8" mm 82/3 1/4" mm	Press roller Heat roller
 -	94/3 11/16" mm	Drum

(3) Firmware environment commands

The printer maintains a number of printing parameters in its memory. There parameters may be changed permanently with the FRPO (Firmware RePrOgram) commands.

This section provides information on how to use the FRPO command and its parameters using examples.

Using FRPO commands for reprogramming firmware

The current settings of the FRPO parameters are listed as optional values on the service status page.

Note: Before changing any FRPO parameter, print out a service status page, so you will know the parameter values before the changes are made. To return FRPO parameters to their factory default values, send the FRPO INIT (FRPO-INITialize) command.(!R! FRPO INIT; EXIT;)

The FRPO command is sent to the printer in the following sequence:

!R! FRPO parameter, value; EXIT;

Example: Changing emulation mode to PCL6

!R! FRPO P1, 6; EXIT;

FRPO parameters

Item	FRPO	Setting values	Factory setting
Default pattern resolution	B8	0: 300 dpi	0
		1: 600 dpi	
Page orientation	C1	0: Portrait	0
		1: Landscape	
Default font No. *	C2	Middle two digits of power-up font	0
	C3	Last two digits of power-up font	0
	C5	First two digits of power-up font	0
PCL font switch	C8	0: HP compatibility mode	0
		32: Conventional compatibility mode	
Total host buffer size	H8	0 to 99 in units of the size defined by FRPO S5	5
Form feed time-out value	H9	Value in units of 5 seconds (1 to 99)	6
Duplex mode	N4	0: Off	0
•		1: Long edge binding	
		2: Short edge binding	
Sleep timer time-out time	N5	Value in units of 1 minute (1 to 240)	1
Ecoprint level	N6	0: Off	0
		2: On	

Item	FRPO	Setting values	Factory setting
Default emulation mode	P1	6: PCL 6 9: KPDL	120V: 9 220-240V: 6
Carriage-return action	P2	0: Ignores 1: Carriage-return 2: Carriage-return + linefeed	1
Linefeed action	P3	0: Ignores 1: Linefeed 2: Linefeed + carriage-return	1
Automatic emulation switching	P4	0: AES disabled 1: AES enabled	120V: 1 220-240V: 0
Automatic emulation switching trigger	P7	0: Page eject commands 1: None 2: Page eject and prescribe EXIT commands 3: Prescribe EXIT commands 4: Formfeed (^L) commands 6: Pescribe EXIT and formfeed commands 10: Page eject commands; if AES fails, resolves to KPDL	120V: 11 220-240V: 10
Command recognition character	P9	ASCII code of 33 to 126	82 (R)
Default paper size	R2	0: Size of the default paper cassette (See R4.) 1: Envelope Monarch 2: Envelope #10 3: Envelope DL 4: Envelope C5 5: Executive 6: Letter 7: Legal 8: ISO A4 9: JIS B5 13: ISO A5 14: ISO A6 15: JIS B6 16: Envelope #9 17: Envelope #6-3/4 18: ISO B5 19: Custom 31: Postcard 32: Reply-paid postcard 33: Oficio II 40: 16K 50: Statement 51: Folio 52: Youkei 2 53: Youkei 4	0
Default cassette	R4	0: MP tray 1: Cassette 1 2: Cassette 2 3: Cassette 3	1

Item	FRPO	Setting values	Factory setting
MP tray paper size	R7	0: Maximum paper size Same as the R2 values except: 0	120V: 6 220-240V: 8
A4/letter equation	S4	0: Off 1: On	1
Host buffer size	S5	0: 10 KB 1: 100 KB 2: 1024 KB	1
RAM disk capacity	S6	0 to 1024 MB	400
RAM disk	S7	0: Disabled 1: Enabled	0
Wide A4	T6	0: Off 1: On	0
Line spacing *	U0 U1	Lines per inch (integer value) Lines per inch (decimal value)	6 0
Character spacing *	U2 U3	Characters per inch (integer value) Characters per inch (decimal value)	10 0
Country code	U6	0: US-ASCII 1: France 2: Germany 3: UK 4: Denmark 5: Sweden 6: Italy 7: Spain 8: Japan 9: US Legal 10: IBM PC-850 (Multilingual) 11: IBM PC-860 (Portuguese) 12: IBM PC-863 (Canadian French) 13: IBM PC-865 (Norwegian) 14: Norway 15: Denmark 2 16: Spain 2 17: Latin America 50 - 99: HP PCL symbol set coding	41
Code set at power up in daisywheel emulation	U7	0: Same as the default emulation mode (P1) 1: IBM 6: IBM PC-8 7 - 99: HP PCL symbol set coding	53
Font pitch for fixedpitch scalable	U8	Default font pitch (integer value)	10
font *	U9 V0	Default font pitch (decimal value)	0
Font height for the default scalable font *	V0 V1	Integer value in 100 points: 0 to 9 Integer value in points: 0 to 99	12
	V I	integer value in points. U to 33	14

Item	FRPO	Setting values	Factory setting
Default scalable font *	V3	Name of typeface of up to 32 characters, enclosed with single or double quotation marks	Courier
Default weight (courier and letter Gothic)	V9	O: Courier = darkness Letter Gothic = darkness 1: Courier = regular Letter Gothic = darkness 4: Courier = darkness Letter Gothic = regular 5: Courier = regular Letter Gothic = regular	5
Color mode	W1	0: Black & white 1: Color	1
Gloss mode	W6	0: Low (normal) 1: High	0
Paper type for the MP tray	X0	1: Plain 2: Transparency 3: Preprinted 4: Label 5: Bond 6: Recycle 7: Vellum 9: Letterhead 10: Color 11: Prepunched 12: Envelope 13: Cardstock 14: Coated 16: Thick 17: High quality 21 to 28: Custom1 to 8	1
Paper type for cassettes 1	X1	1: Plain 3: Preprinted 5: Bond 6: Recycled 7: Vellum 9: Letterhead 10: Color 11: Prepunched 16: Thick 17: High quality 21 to 28: Custom1 to 8	1

ltem	FRPO	Setting values	Factory setting
Paper type for cassettes 2 and 3	X2 X3	Paper feeder (Normal) 1: Plain 3: Preprinted 5: Bond 6: Recycled 9: Letterhead 10: Color 11: Prepunched 17: High quality 21 to 28: Custom1 to 8 Multi purpose feeder 1: Plain 3: Preprinted 4: Label 5: Bond 6: Recycle 7: Vellum 9: Letterhead 10: Color 11: Prepunched 12: Envelope 13: Cardstock 14: Coated 16: Thick 17: High quality 21 to 28: Custom1 to 8	1
PCL paper source	X9	0: Paper selection depending on an escape sequence compatible with HP-LJ5Si.2: Paper selection depending on an escape sequence compatible with HP-LJ8000.	0
Automatic continue for 'Press GO'	Y0	0: Off 1: On	0
Automatic continue timer	Y1	Value in units of 5 seconds (1 to 99)	6 (30 s)
Error message for device error	Y3	0: Not detect 33: Detect	33
Duplex operation for specified paper type (Prepunched, Preprintedand Letterhead)	Y4	0: Off 1: On	0

Item	FRPO	Setting values	Factory setting
Default operation for PDF direct printing	Y5	 Enlarges or reduces the image to fit in the current paper size. Loads paper from the current paper cassette. Through the image. Loads paper which is the same size as the image. Enlarges or reduces the image to fit in the current paper size. Loads Letter, A4 size paper depending on the image size. Through the image. Loads Letter, A4 size paper depending on the image size. Through the image. Loads paper from the current paper cassette. Through the image. Loads Letter, A4 size paper depending on the image size. Enlarges or reduces the image to fit in the current paper size. Loads Letter, A4 size paper depending on the imagesize. 	0
e-MPS error	Y6	0: Does not print the error report and display the error message.1: Prints the error report.2: Displays the error message.3: Prints the error report and displays the error message.	3

^{*:} Ignored in some emulation modes.

(4) Maintenance Commands

This section provides information on how to use the maintenance command and its parameters using examples.

Adjusting the print start timing (alternative command for the maintenance mode U034)

Description

Adjusts the leading edge registration or left edge.

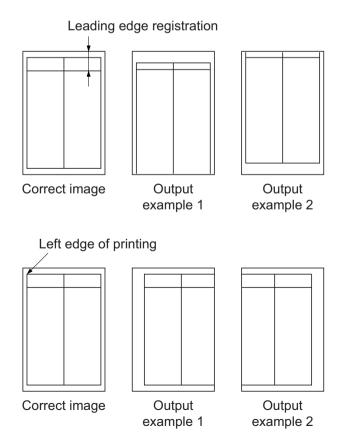
Purpose

Make the adjustment if there is a regular error between the leading edges of the copy image and original. Make the adjustment if there is a regular error between the left edges of the copy image and original.

Format	!R! K0	!R! KCFG"PFRC",#1 ,#2 ,#3;			
Parameter	#1	Paper source number 0: MP tray 2-6: Cassette2-6 100: Duplex (e.g. landscape images short-edge bind) 200: Rotated duplex (e.g. portrait images long-edge bind)			
	#2	Edge to adjust 1: Leading edge 2: Left edge			
	#3	Adjustable range (-128 to +127) number of dot in 600dpi			

Example: Set the leading edge of MP tray to +30 dots

!R! KCFG "PFRC",0,1,30;EXIT;



Adjusting the scanner magnification (alternative command for the maintenance mode U065)

Description

Adjusts the magnification of the original scanning.

Purpose

Make the adjustment if the magnification in the main scanning direction is incorrect. Make the adjustment if the magnification in the auxiliary scanning direction is incorrect.

Format	!R! KCFG "SCAN",8, #1,#2;EXIT;	
Parameter	#1	Y SCAN ZOOM Scanner magnification in the main scanning direction X SCAN ZOOM Scanner magnification in the auxiliary scanning direction
	#2	#1=1: Adjustable range: -32 to 127 (in 0.1% increment) (0: default) #2=2: Adjustable range: -25 to 25 (in 0.1% increment) (0: default)

Example: Y SCAN ZOOM set to 55, X SCAN ZOOM set to 10

!R! KCFG "SCAN",8,1,55; KCFG "SCAN",8,2,10; EXIT;



Original



Copy example 1



Copy example 2

Magnified in the main scanning direction



Original



Copy example 1



Magnified in the auxiliary scanning direction

Adjusting the scanner leading edge registration (alternative command for the maintenance U066)

Description

Adjusts the scanner leading edge registration of the original scanning.

Purpose

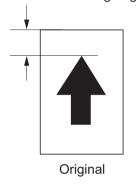
Make the adjustment if there is a regular error between the leading edges of the copy image and original.

Format	!R! KCFG "SCAN",5,#1,#2;;EXIT;	
Parameter	#1	Scanner leading edge registration Scanner leading edge registration of rotated scan
	#2	Adjustable range: -45 to 45 (in 0.086mm increment) (0: default)

Example: Scanner leading edge registration set to 10 to increase 0.86mm $\,$

!R! KCFG "SCAN",5,1,"10";EXIT;

Scanner leading edge registration (within ± 2.5 mm)







Copy example 1

Copy example 2

Adjusting the scanner center line (alternative command for the maintenance mode U067)

Description

Adjusts the scanner center line of the original scanning.

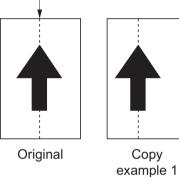
Purpose

Make the adjustment if there is a regular error between the center lines of the copy image and original.

Format	!R! KCFG "SCAN",6, #1;#2;EXIT;	
Parameter	#1	Scanner center line Scanner center line of rotated scan
	#2	#1=1: Adjustable range: -70 to 70 (in 0.086mm increment) (0: default) #1=2: Adjustable range: -40 to 40 (in 0.086mm increment) (0: default)

Example: Scanner leading edge registration set to 20 to increase 1.72mm !R! KCFG "SCAN",6,1,20;EXIT;

Scanner center line (within ± 2.0 mm)







example 2

Adjusting the scanning position for originals from the DP (alternative command for the maintenance mode U068)

Description

Adjusts the position for scanning originals from the DP. Performs the test copy at the four scanning positions after adjusting.

Purpose

Used when the image fogging occurs because the scanning position is not proper when the DP is used. Execute KCFG "EESS",4, 107, 1, "#1"; command to adjust the timing of DP leading edge when the scanning position is changed.

Format	!R! KCFG "SCAN",9, #1,#2;EXIT;	
Parameter	#1	DP READ Starting position adjustment for scanning originals BLACK LINE Scanning position for the test copy originals
	#2	#1=1: Adjustable range: -33 to 33 (in 0.086mm increment) (0: default) #1=2: Adjustable range: 0 to 3 (in 0.22mm increment) (0: default)

Example: DP READ set to 15, BLACK LINE set to 3 !R! KCFG "SCAN",9,1,15; KCFG "SCAN",9,2,3;EXIT;

Adjusting the DP magnification (alternative command for the maintenance mode U070)

Description

Adjusts the DP original scanning speed.

Purpose

Make the adjustment if the magnification is incorrect in the auxiliary scanning direction when the DP is used.

Format	!R! K0	!R! KCFG "SCAN",4, #1;#2;EXIT;	
Parameter	#1	2: CONVEYING SPEED Magnification in the auxiliary scanning direction	
	#2	Adjustable range:25 to 25 (in 0.1% increment) (0: default)	

Example: DP scanning magnification set to 20 to increase 2%

!R! KCFG "SCAN",4,2,20;EXIT;

Leading edge registration



Original



Copy example 1



Copy example 2

Adjusting the DP scanning timing (alternative command for the maintenance mode U071)

Description

Adjusts the DP original scanning timing.

Purpose

Make the adjustment if there is a regular error between the leading or trailing edges of the original and the copy image when the DP is used.

Format	!R! KCFG "SCAN",2,#1,#2;EXIT;	
Parameter	#1	1: FRONT HEAD Leading edge registration (first page) 2: FRONT TAIL Trailing edge registration (first page) 3: BACK HEAD Leading edge registration (second page) 4: BACK TAIL Trailing edge registration (second page) 5: ROTATE Leading edge registration (rotate scan)
	#2	#1=1: Adjustable range: -32 to 32 (in 0.196mm increment) (0: default) #1=2: Adjustable range: -32 to 32 (in 0.196mm increment) (0: default) #1=3: Adjustable range: -45 to 45 (in 0.196mm increment) (0: default) #1=4: Adjustable range: -45 to 45 (in 0.196mm increment) (0: default) #1=5: Adjustable range: -128 to 128 (in 0.196mm increment) (0: default)

Example: FRONT HEAD set to 10, FRONT TAIL set to 15, BACK HEAD set to 10, BACK TAIL 15 !R! KCFG "SCAN",2,1,10; KCFG "SCAN",2,2,15; KCFG "SCAN",2,3,10; KCFG "SCAN",2,4,15; EXIT;

Leading edge registration



Original



Copy example 1



Copy example 2

Trailing edge registration



Original



Copy example 1



Copy example 2

Adjusting the DP center line (alternative command for the maintenance mode U072)

Description

Adjusts the scanning center line for the DP original.

Purpose

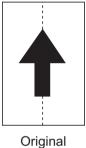
Make the adjustment if there is a regular error between the centers of the original and the copy image when the DP is used.

Format	!R! KCFG "SCAN",3, #1,#2;EXIT;	
Parameter	#1	1: FRONT Center line (first page) 2: BACK Center line (second page) 3: ROTATE Center line (rotated scan)
	#2	Setting range: -39 to 39 (in 0.086mm increment) (initial: 0)

Example: FRONT set to 15, BACK set to 3

!R! KCFG "SCAN",3,1,15; KCFG "SCAN",3,2,3;EXIT;

DP center line



Сору

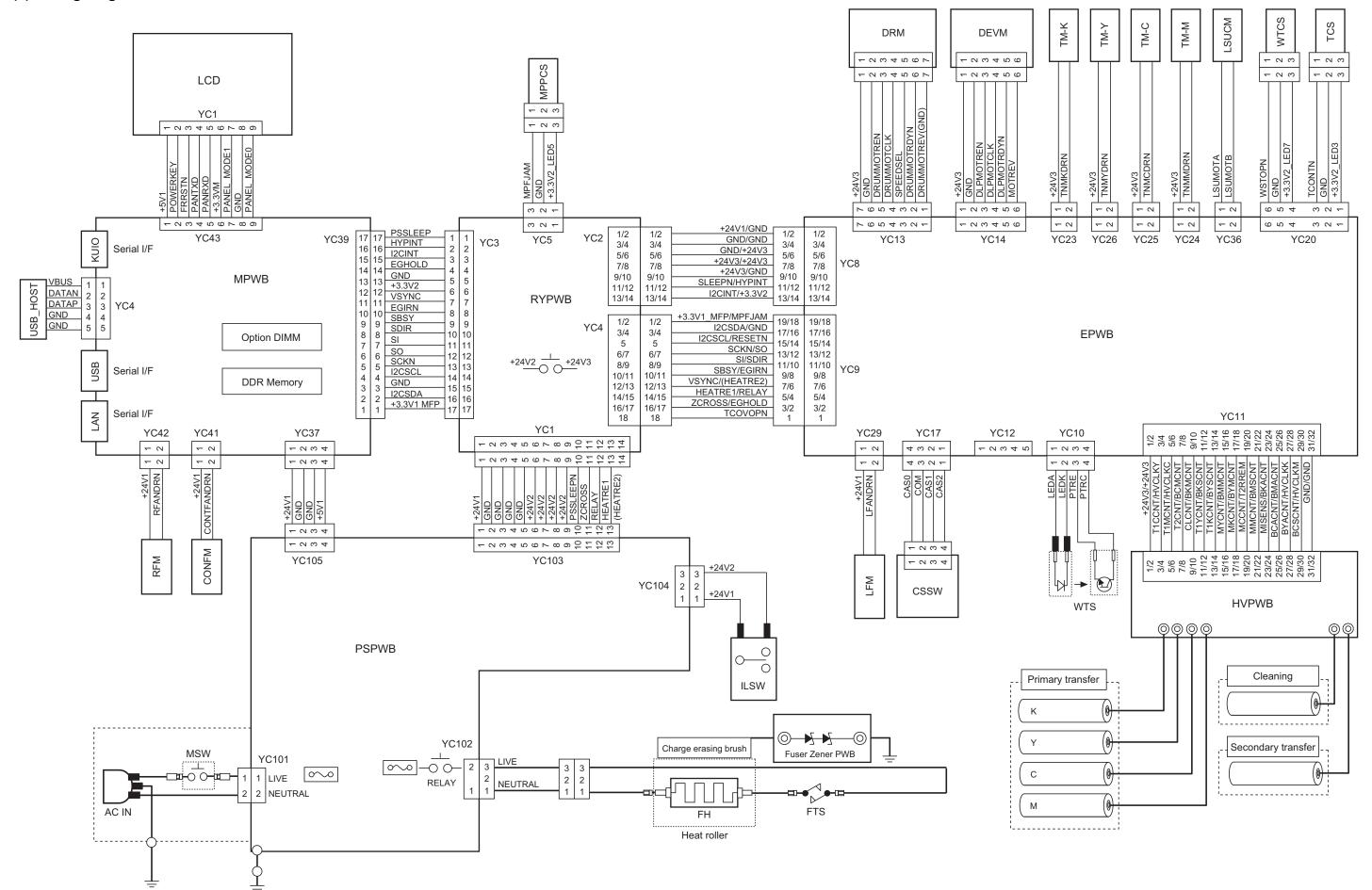


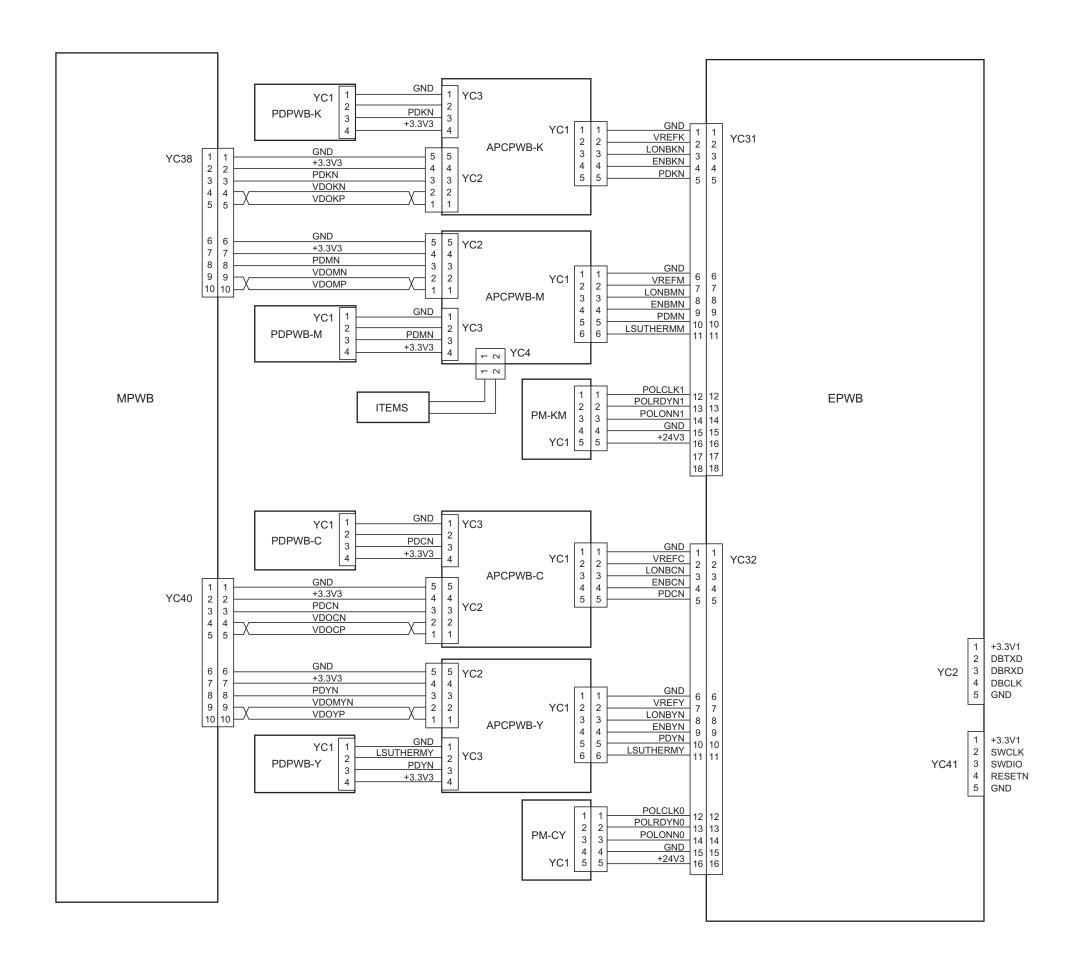
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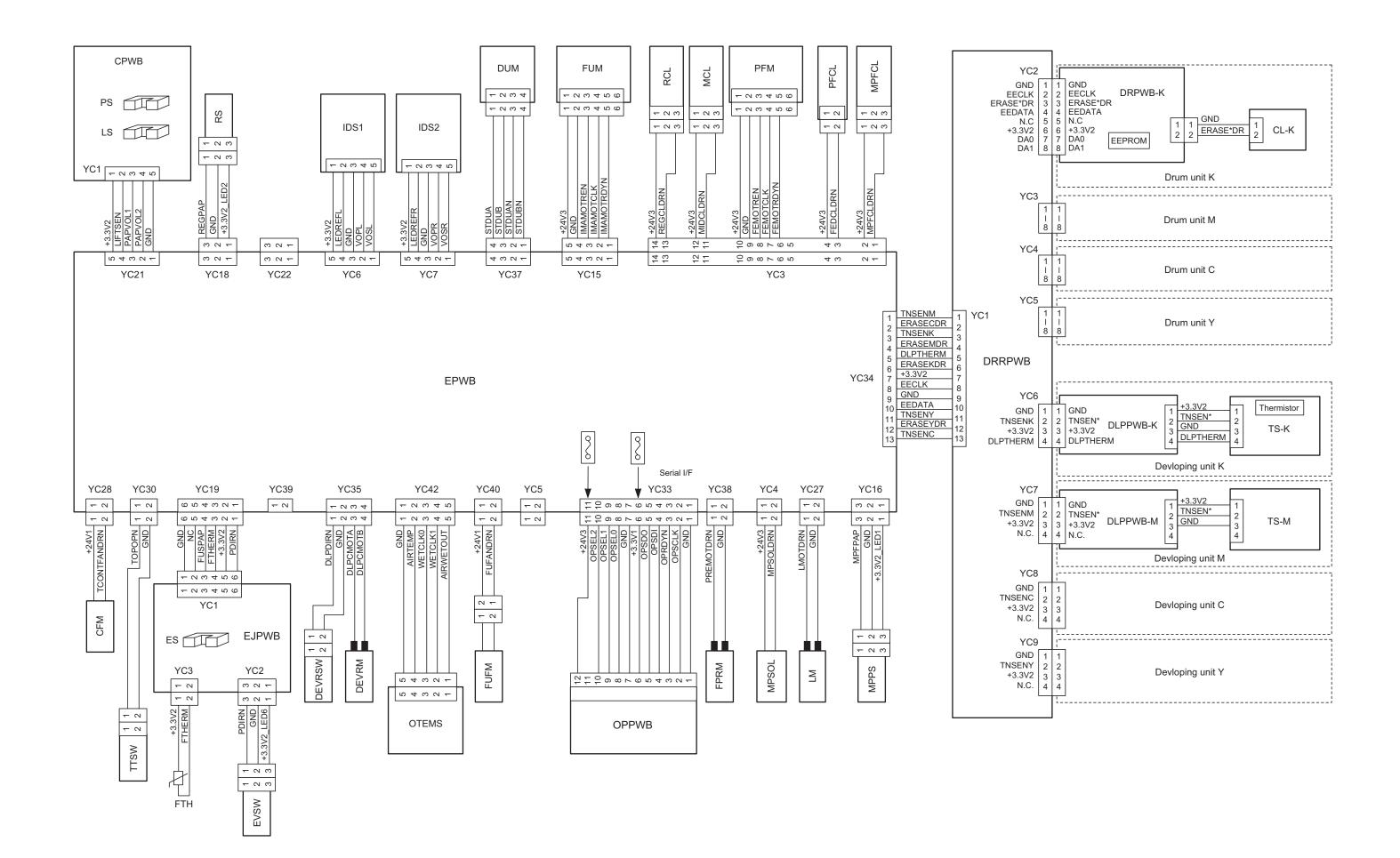
example 1

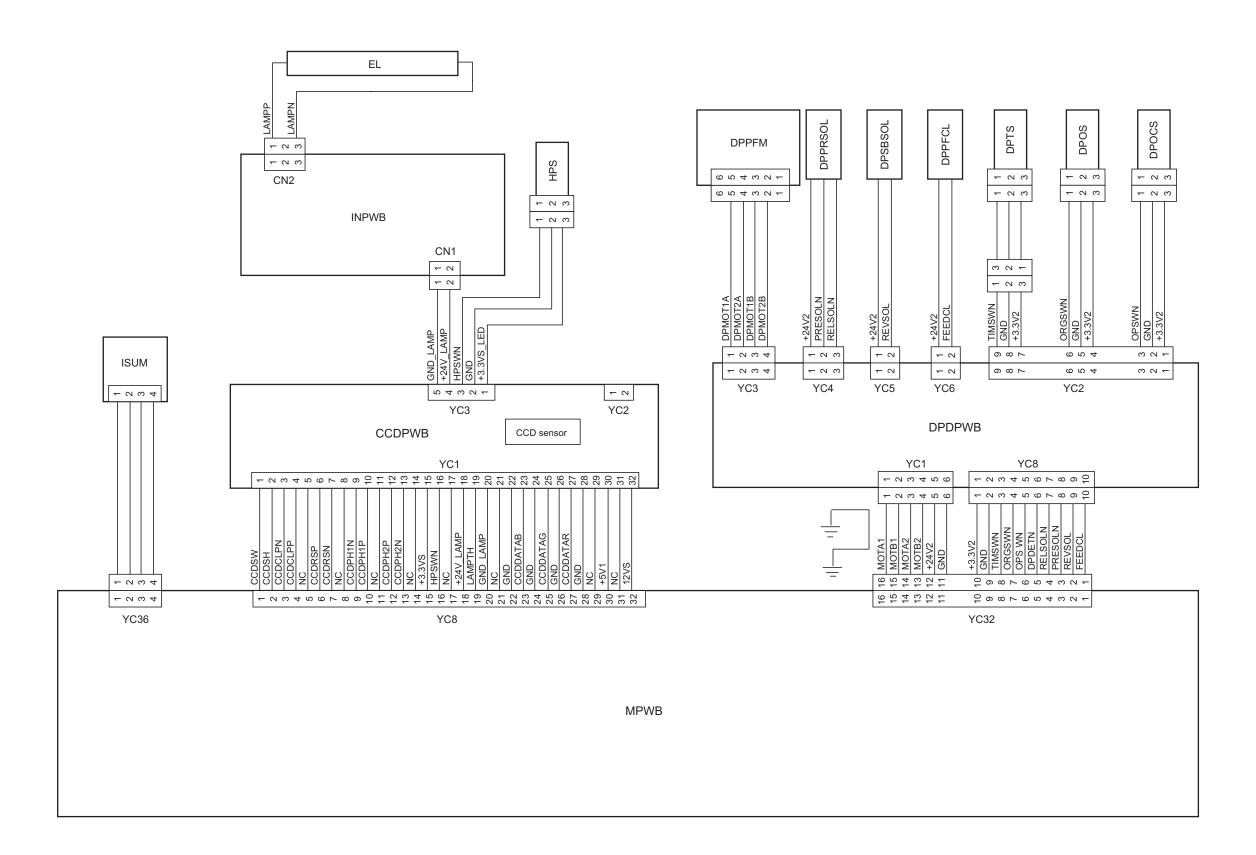
example 2

(5) Wiring diagram









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