KYOCERA

FS-C8026N

SERVICE MANUAL

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Revision history

Revision	Data	Replaced	Remarks
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1.1	18 December 2003		Overall revised
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KYOCERA

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.

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

Symbols

The 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

⚠WARNING

- 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. .....

⚠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

⚠WARNING

- Always remove the power plug from the wall outlet before starting machine disassembly. .....

- Always follow the procedures for maintenance described in the service manual and other related brochures. .....

- Under no circumstances attempt to bypass or disable safety features including safety mechanisms and protective circuits. .....

- Always use parts having the correct specifications. .....
- Always use the thermostat or thermal fuse specified in the service manual or other related brochure when replacing them. Using a piece of wire, for example, could lead to fire or other serious accident. .....

- When the service manual or other serious brochure specifies a distance or gap for installation of a part, always use the correct scale and measure carefully. .....

- Always check that the copier is correctly connected to an outlet with a ground connection. .....
- Check that the power cable covering is free of damage. Check that the power plug is dust-free. If it is dirty, clean it to remove the risk of fire or electric shock. .....

- Never attempt to disassemble the optical unit in machines using lasers. Leaking laser light may damage eyesight. .....

- Handle the charger sections with care. They are charged to high potentials and may cause electric shock if handled improperly. .....

⚠CAUTION

- 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. .....

- Do not pull on the AC power cord or connector wires on high-voltage components when removing them; always hold the plug itself. .....

- 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. .....

- Treat the ends of the wire carefully when installing a new charger wire to avoid electric leaks. .....

- Remove toner completely from electronic components. .....

- Run wire harnesses carefully so that wires will not be trapped or damaged. .....

- 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. .....

- 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. .....

- 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.

- Never dispose of toner or toner bottles in fire. Toner may cause sparks when exposed directly to fire in a furnace, etc. .....

- Should smoke be seen coming from the copier, remove the power plug from the wall outlet immediately. .....

3.Miscellaneous

⚠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. .....

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CONTENTS

1-1-1 Specifications

Type	Floor
Printing system	Electrophotographic printing (tandem)
Printing paper	Weight Cassette: 60 to 105 g/m^2 MP tray: 60 to 220 g/m^2 (135 to 200 g/m^2 paper should be A4 or Letter size and fed lateralley.) Type Cassette: Plain paper, recycled paper, thick paper, thin paper MP tray: Plain paper, recycled paper, thick paper, thin paper, special paper (transparencies, labels, envelopes, postcards, tracing paper)
Paper sizes	A4 (210 × 297 mm) A3 (297 × 420 mm) B4 (257 × 364 mm) B5 (182 × 257 mm) A5 (148 × 210 mm) Letter ($8_{1/2}$" × 11") Legal ($8_{1/2}$" × 14") Ledger (11" × 17") Non-standard size (148 to 297 mm × 210 to 420 mm: cassette), (70 to 305 mm × 148 to 457 mm: MP tray)
Print speeds	Cassette (Values within [ ] are for duplex printing using the optional duplex unit DU-640*.) A4: 26 pages/minutes [24.5 pages/minutes] B4: 13 pages/minutes [13 pages/minutes] A3: 13 pages/minutes [13 pages/minutes] Letter: 26 pages/minutes [24.5 pages/minutes] Legal: 13 pages/minutes [13 pages/minutes] Ledger: 11 pages/minutes [11 pages/minutes] MP tray (in cassette mode) A4: 24 pages/minutes B4: 13 pages/minutes A3: 13 pages/minutes Letter: 24 pages/minutes Legal: 13 pages/minutes Ledger: 11 pages/minutes
First print time	Standby mode: 9.0 seconds or less (A4)
Warm-up time	Sleep mode: 179 seconds or less (room temperature 23 °C, 60% RH)
Paper feed system	One universal cassette and one MP tray
Paper loading capacity	Cassette: 500 sheets (80 g/m^2, 0.11 mm) MP tray: 150 sheets (80 g/m^2, 0.11 mm)
Paper eject system	Face down: 500 sheets (80 g/m^2, 0.11 mm), equipped with a face-down paper full sensor Face up: 150 sheets, Optional face-up tray PT-640 must be installed
Photoconductor	a-Si drum (diameter 30 mm)
Charging system	Scorotron (positive charging)
Light source	LED (Advanced Beam Array)
Developing system	Dual component dry developing method Toner replenishing: Automatic from the toner container
Transfer system	Primary transfer: Transfer belt Secondary transfer: Transfer roller
Separation system	Small diameter separation
Fuser system	Heat roller system (Oil-less) Heat roller (diameter 45mm, 600 W halogen heater lamp) Pressure roller (diameter 45mm, 400 W halogen heater lamp)
Charge erasing system	Exposure by eraser lamp (LED)
Cleaning system	Drum: Counter blade Primary transfer belt: Collecting to the drum by applying the reverse transfer bias

Controller hardware	CPU: Power PC750CXe (600 MHz) System ROM: 4 MB Font ROM: 4 MB (32 Mbit × 1) Main RAM: 128 MB standard (on-board); expanding up to 512 MB (256 MB × 2) at the maximum by adding optional expansion memory Optional expansion RAM (DIMM): 1 slot 168-pin DIMM (64, 128 or 256 MB)
Interface	Parallel: High-speed (bi-directional), IEEE 1284 Compatible/Nibble/ECP mode Optional interface (KUIO-LV) × 1: Network interface card IB-20 (10 Base-TX/100 Base-TX/10 Base-2), IB-21E (10 Base-TX/100 Base-TX), wireless LAN card IB-22 must be installed.
Controller software	a) Emulation PCL6 (PCL5, PCL5e and PCL-XL) KPDL3 (PostScript 3 compatible) KCGL b) Fonts: Bitmap font: 1 Line Printer bitmap font Outline fonts: 80 PCL fonts 136 KPDL3 fonts: c) Graphic: (1) Raster graphic: 75, 100, 150, 200*, 300, 600* dpi (*200 dpi is supported when the resolution is 600 dpi.) (2) Vector graphic: Line, Box, Circle, Arc, Fill pattern etc. (3) Bar code: One-dimensional bar code: 45 types Two o-dimensional bar code: 1 type (PDF-417) (4) Text: (5) Others: d) Connectivity plug & play, Windows 95/98/ME/NT4.0/2000/XP SNMP (KM-NET viewer)
Resolution	600 × 600 dpi (multi 4-bit)
Dimensions	Main unit: 699 × 715 × 463 mm/27.52" × 28.15" × 18.23" (W × D × H)
Weight	Main unit: 84.3 kg/186.3 lbs (not including toner containers)
Power source	220 - 240 V AC, 50/60 Hz (European countries), 120 V AC, 60 Hz (U.S.A./Canada)
Power consumption	Maximum: 1450 W (220 - 240 V model), 1350 W (120 V model) Normal operating: 700 W (220 - 240 V model), 700 W (120 V model) Ready: 165 W (220 - 240 V model), 165 W (120 V model) EcoPower: 30 W (220 - 240 V model), 30 W (120 V model)
Current	6.5 A (220 - 240 V model), 12.5 A (120 V model)
Noise	Printing: 53 dB(A), Ready: 39 dB(A)
Options	Expansion memory (64/128/256 MB 168-pin DIMM), memory card (Compact Flash), hard disk unit HD-10* (20 GB), network interface card IB-20 (10 BASE-T/100BASE-TX/10BASE-2),network interface card IB-21E (10BASE-T/100BASE-TX), wireless LAN card IB-22 (compatible to IEEE802.11b), serial interface board IB-11, (Maximum: 115 kbps), paper feeder PF-640 (500 sheets [60 to 105 g/m^2] × 1 cassette, A3, B4, A4, A5, B5, ledger, legal, letter, custom), paper feeder PF-645 (500 sheets [60 to 105 g/m^2] × 3 cassettes, A3, B4, A4, A5, B5, ledger, legal, letter, custom), paper feeder PF-647 (500 sheets [60 to 105 g/m^2] × 1 cassette, 1000 sheets [60 to 105 g/m2] × 1 deck, 1500 sheets [60 to 105 g/m^2] × 1 deck, A3, B4, A4, A5, B5, ledger, legal, letter, custom), duplex unit DU-640*, face-up output tray PT-640 (150 sheets), caster kit CA-33, dehumidifier heater *Standard equipment for 120 V (U.S.A.) specifications

1-1-2 Parts names

(1) Printer

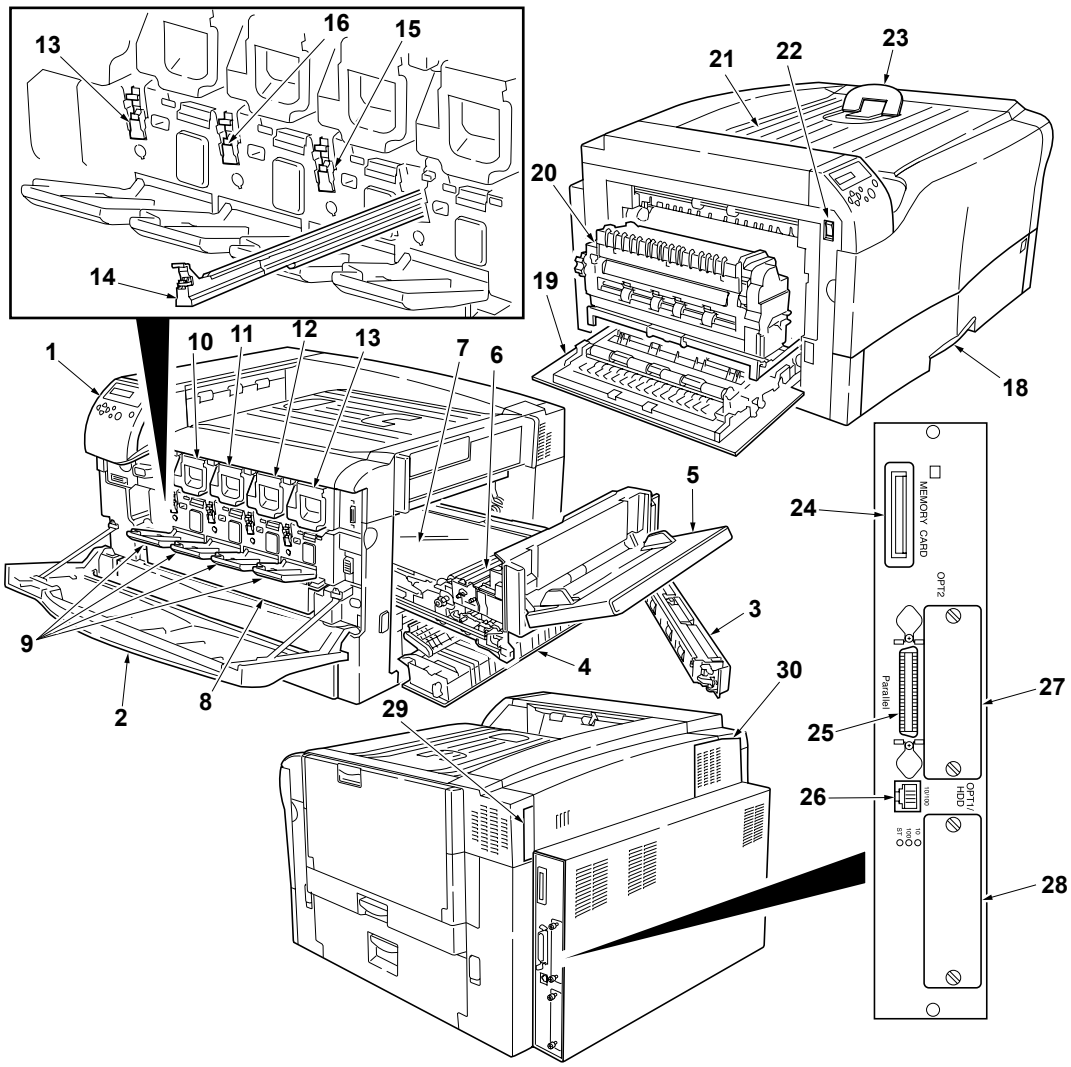


Figure 1-1-1

1. Operation panel
2. Front cover
3. Right cover 1
4. Right cover 2
5. MP tray
6. Paper feed unit
7. Transfer unit
8. Waste toner box
9. Toner container cover
10. Black toner container
11. Yellow toner container
12. Cyan toner container
13. Magenta toner container
14. Black main charger unit
15. Yellow main charger unit
16. Cyan main charger unit
17. Magenta main charger unit
18. Paper cassette
    Duplex unit*
19. Left cover
20. Fuser unit
21. Face-down exit tray
22. Power switch
23. Paper stopper
24. Memory card slot
25. Parallel interface connector
26. Network interface connector
27. Optional interface slot (OPT1/HDD)
28. Optional interface slot (OPT2)
29. Filter
30. Ozone filter cover

*120 V (U.S.A.) specifications only.

(2) Operation panel

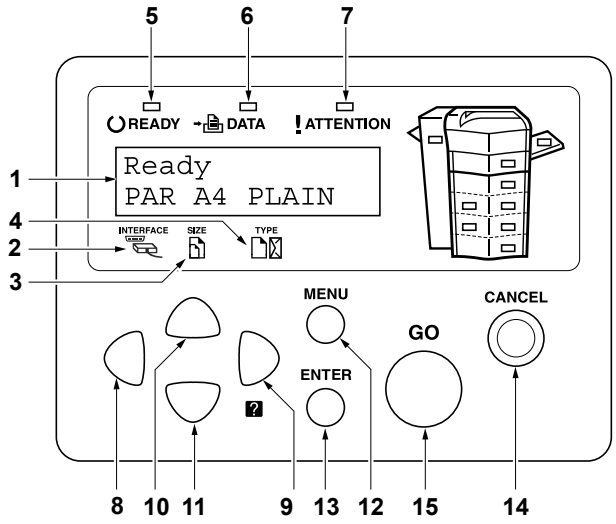


Figure 1-1-2

1. Message display
2. Interface indicator (INTERFACE)
3. Paper size indicator (SIZE)
4. Paper type indicator (TYPE)
5. Ready indicator (READY)
6. Data indicator (DATA)
7. Attention indicator (ATTENTION)
8. Left key(◁)
9. Right key(▷?)
10. Up key(△)
11. Down key(▽)
12. Menu key (MENU)
13. Enter key (ENTER)
14. Cancel key (CANCEL)
15. Go key (GO)

1-1-3 Cross section view

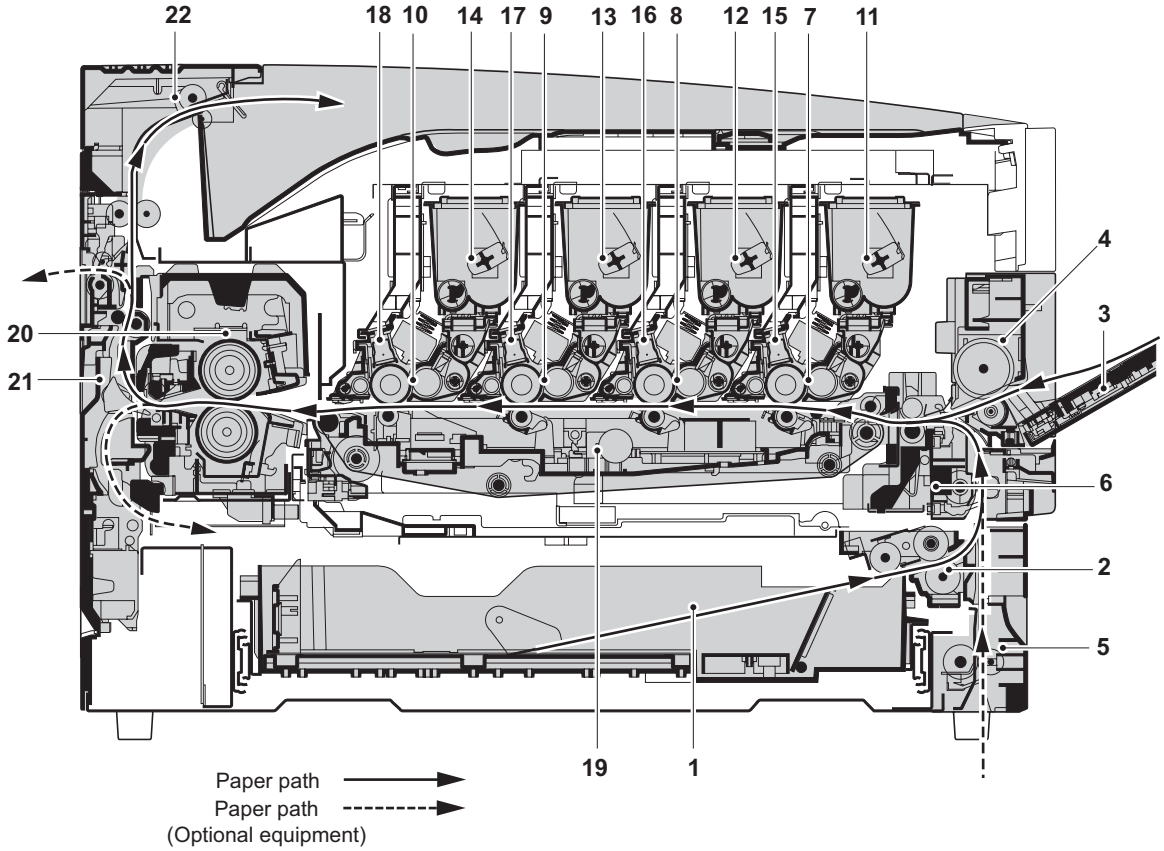


Figure 1-1-3

1. Paper cassette
2. Primary paper feed unit
3. MP tray
4. MP tray feed unit
5. Paper feeder feed section
6. Paper feed unit
7. Magenta process unit
8. Cyan process unit
9. Yellow process unit
10. Black process unit
11. Magenta toner container
12. Cyan toner container
13. Yellow toner container
14. Black toner container
15. Magenta main charger unit
16. Cyan main charger unit
17. Yellow main charger unit
18. Black main charger unit
19. Transfer unit
20. Fuser unit
21. Eject unit
22. Face-down exit section

***120 V (U.S.A.) specifications only**

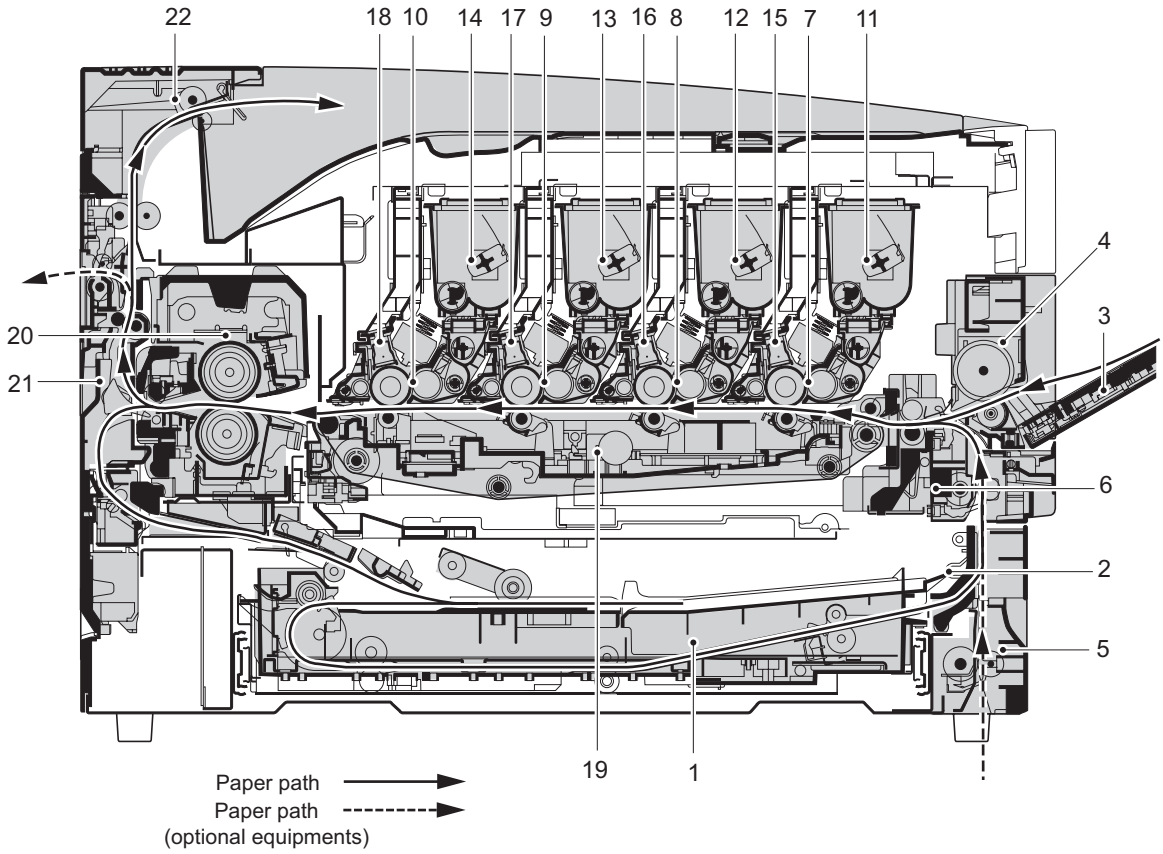


Figure 1-1-4

1. Duplex unit
2. Primary paper feed unit
3. MP tray
4. MP tray feed unit
5. Paper feeder feed section
6. Paper feed unit
7. Magenta process unit
8. Cyan process unit
9. Yellow process unit
10. Black process unit
11. Magenta toner container
12. Cyan toner container
13. Yellow toner container
14. Black toner container
15. Magenta main charger unit
16. Cyan main charger unit
17. Yellow main charger unit
18. Black main charger unit
19. Transfer unit
20. Fuser unit
21. Eject unit
22. Face-down exit section

1-2-1 Drum (process unit)

Note the following when handling or storing the drum (process unit).
- When removing the drum (process unit), never expose the drum surface to strong direct light.
- 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.

Developer (process unit) and toner container
- Store the developer (process unit) and toner container in a cool, dark place.
- Store the individual packaging case and the outer case of the toner container according to the indication.
- Avoid direct light and high humidity.
- When the machine is not used for the long term, pack the process units and loosen the fuser press screws.

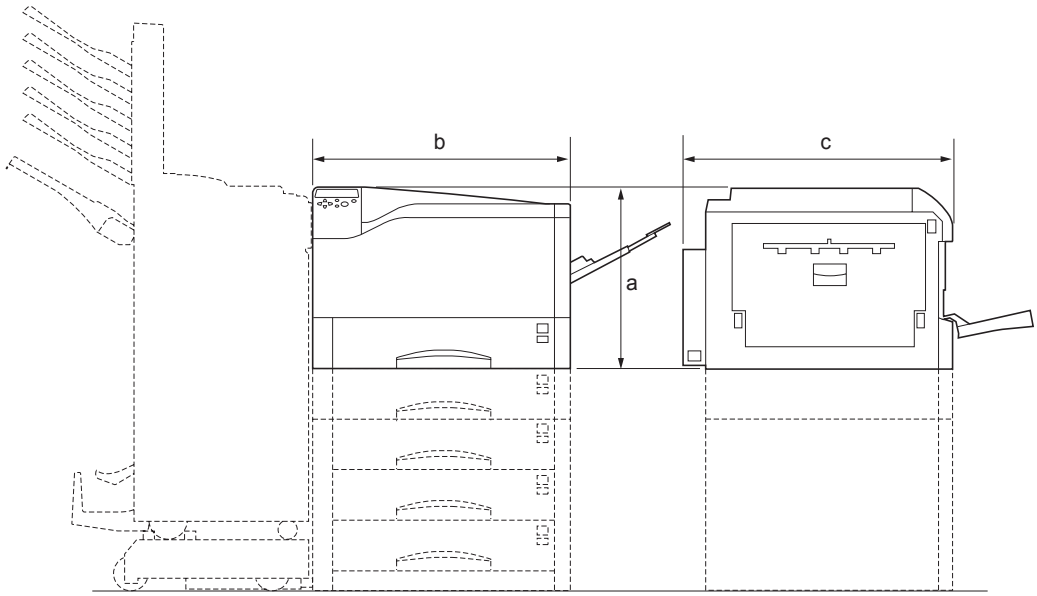
1-2-2 Installation environment

1. Temperature: 10 - 32.5 °C/50 - 90.5 °F
2. Humidity: 20 - 80%RH
3. Power supply: 120 V AC (U.S.A./Canada), 220 - 240 V AC (European countries)
4. Power source frequency: 50 Hz ±2%/60 Hz ±2%
5. Installation location

- Avoid direct sunlight or bright lighting. Ensure that the photo-conductor will not be exposed to direct sunlight or other strong light when removing paper jams.
- Avoid extremes of temperature and humidity, abrupt ambient temperature changes, and hot or cold air directed onto the machine.
- Avoid dust and vibration.
- 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 photo-conductor, such as mercury, acidic of alkaline vapors, inorganic gasses, NOx, SOx gases and chlorine-based organic solvents.
- Select a room with good ventilation.

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

Machine front: 1000 mm/39 3/8" Machine rear: 300 mm/11 13/16"
Machine right: 300 mm/11 13/16" Machine left: 300 mm/11 13/16"



a: 463 mm/18.23"
b: 699 mm/27.52"
c: 715 mm/28.15"

Figure 1-2-1 Installation dimensions

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1-3-1 Unpacking and installation

(1) Installation procedure

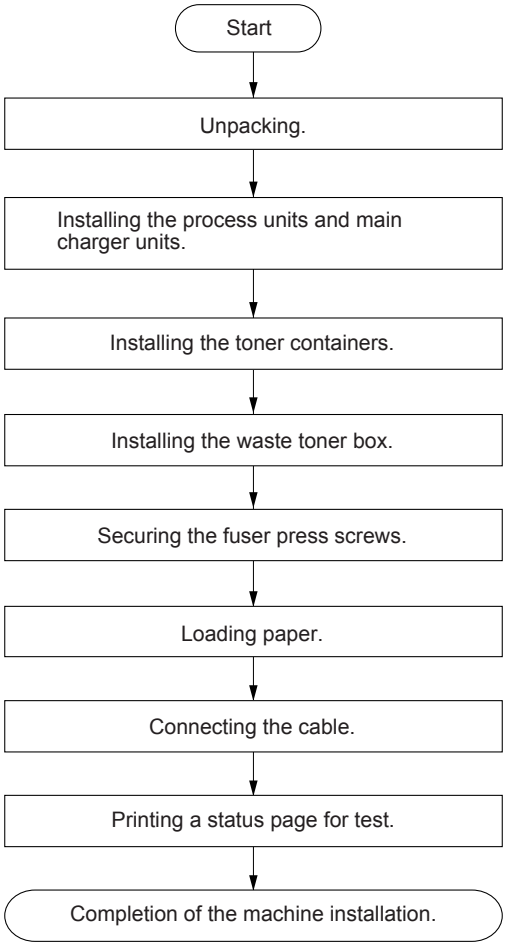


Figure 1-3-1

Unpacking.

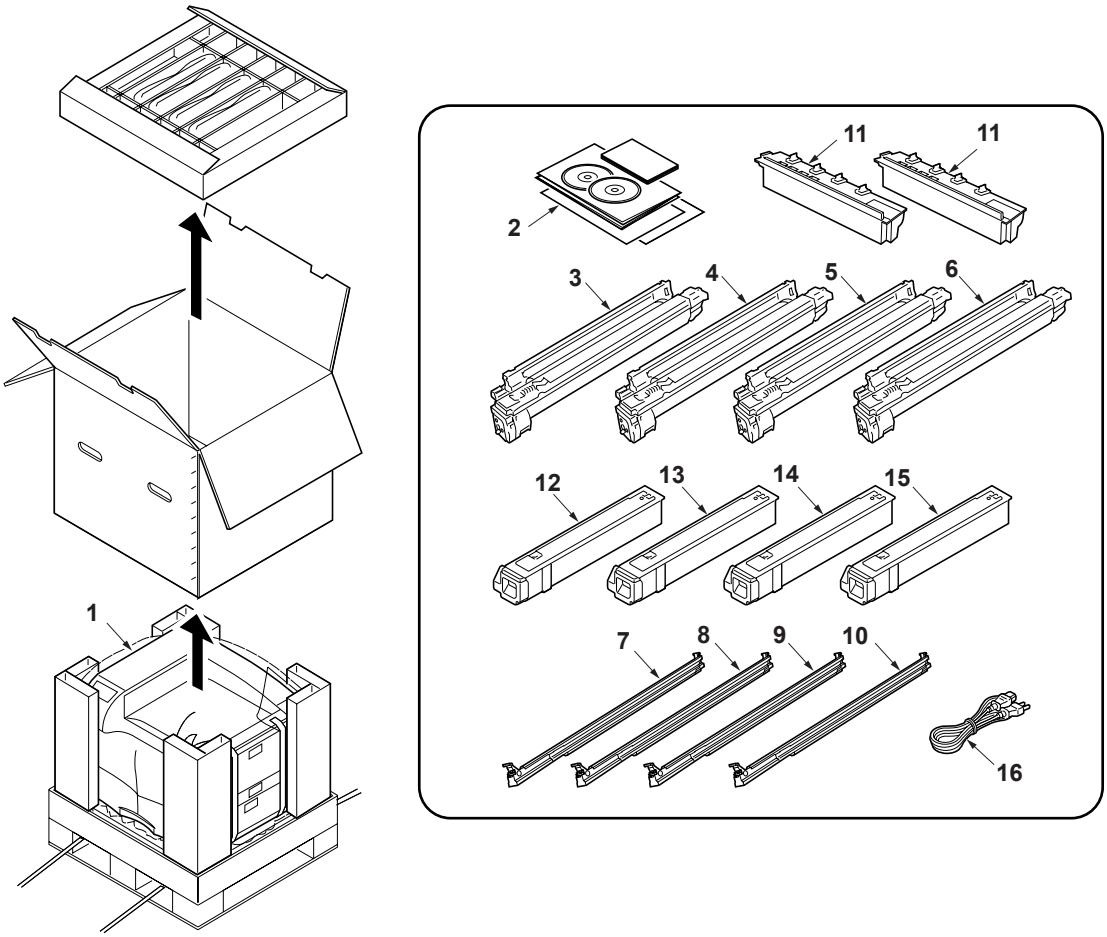


Figure 1-3-2 Unpacking

1. Printer
2. Installation Guide, Quick Guide, Quick Configuration Guide and two CD-ROM
3. Cyan process unit
4. Magenta process unit
5. Yellow process unit
6. Black process unit
7. Cyan main charger unit
8. Magenta main charger unit
9. Yellow main charger unit
10. Black main charger unit
11. Waste toner box (two)
12. Cyan toner container
13. Magenta toner container
14. Yellow toner container
15. Black toner container
16. Power cord

Installing the process units and main charger units.

1. Open the front cover.
   Remove all shipping tapes.
2. Pull out the paper feed unit (transfer unit).
3. Push up the four LED print heads (levers) while pushing down each lock levers.
4. Remove the two screws, and pull the two release levers and remove the drum holder.

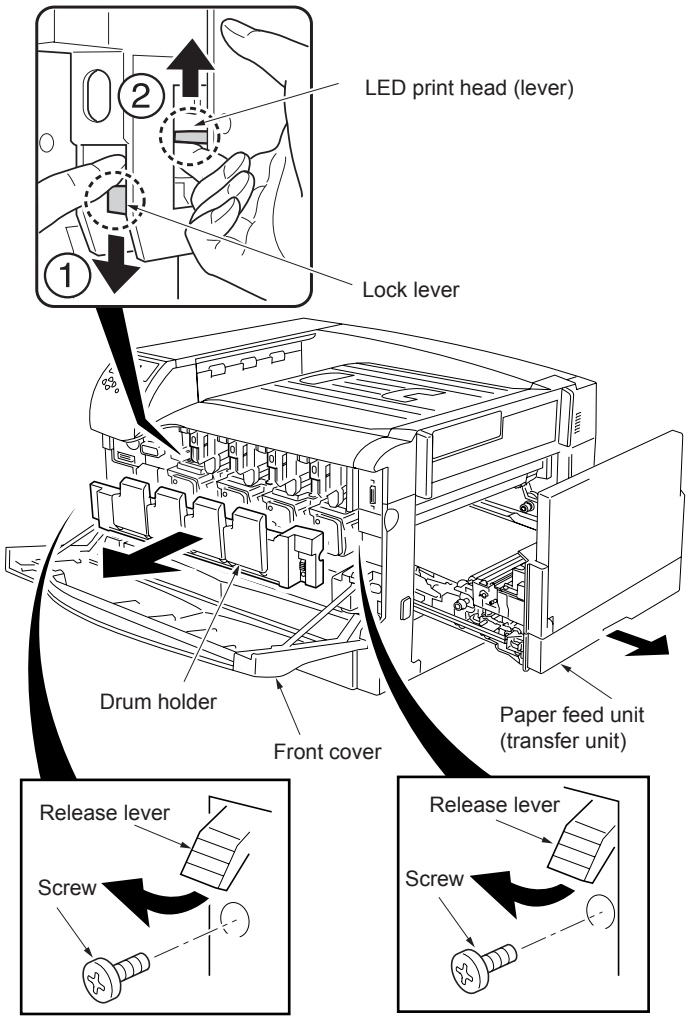


Figure 1-3-3

5. Remove the packing paper from the process unit.
   Hold the developing section and the cleaning section by putting them in and remove the protective paper from inside the process unit by pulling it a little from the lower part.
   * Take care not to hold the guide of the main charger.
   Remove the three protective foams.
6. Shake the process unit in a parallel direction fourth or fifth times.

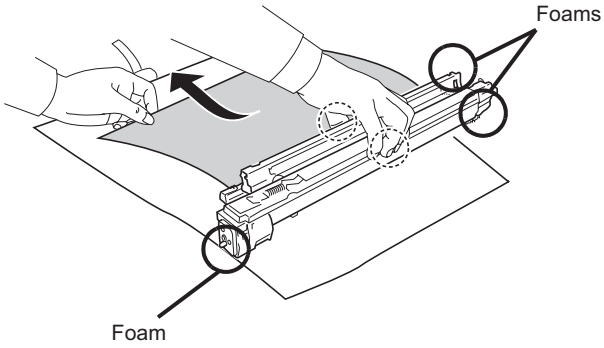


Figure 1-3-4

7. Turn the lock lever to the left (to release).
8. Install the four process units in order of magenta, cyan, yellow and black.
9. Turn the lock lever to the right (to lock).
10. Refit the drum holder,

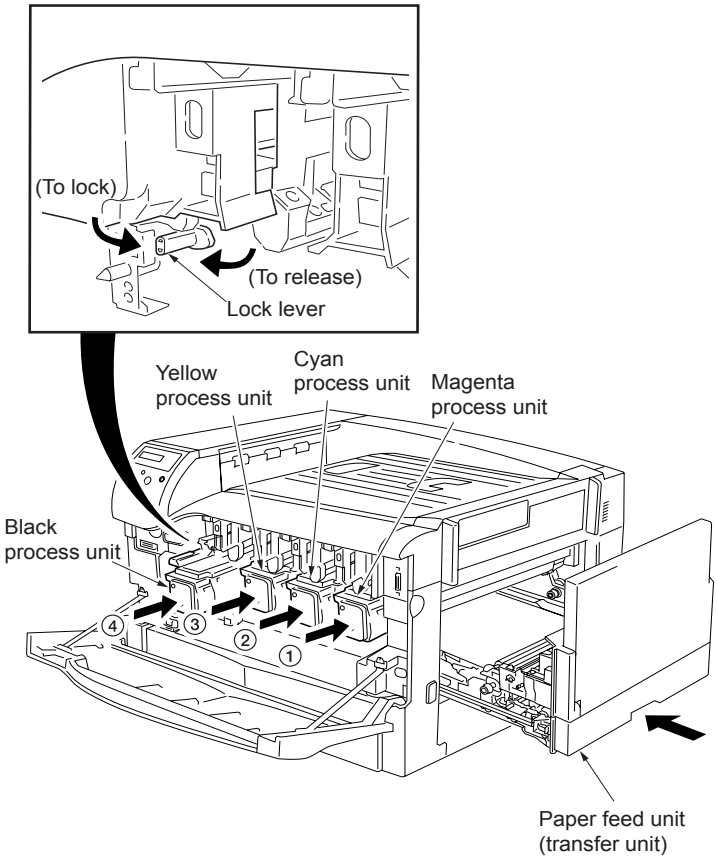


Figure 1-3-5

11. Open the four toner container covers.
12. Referring to the color of the attached seal, install the main charger units to the process units for the same color.
13. Push down the four LED print head (levers).
14. Close the paper feed unit (transfer unit).

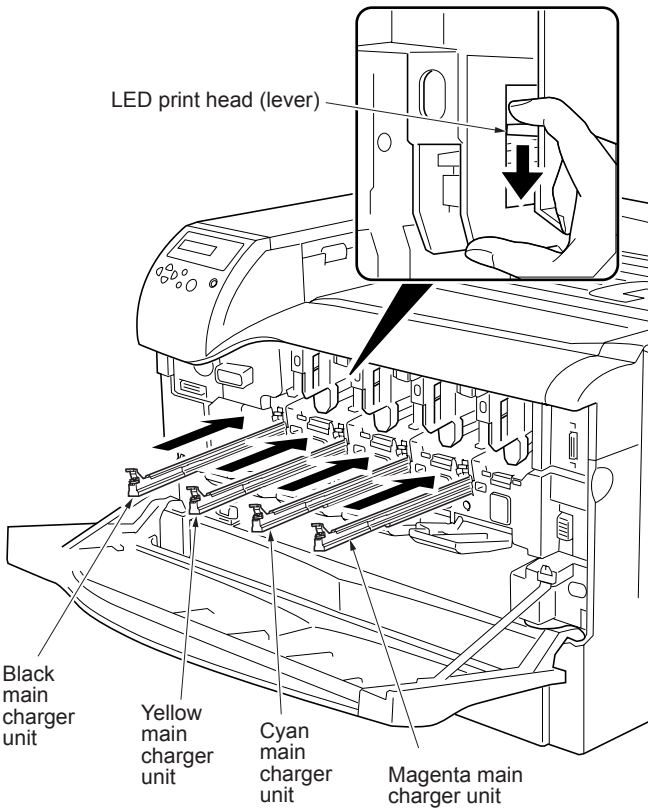


Figure 1-3-6

Installing the toner containers.

1. Shake the four toner containers in a parallel direction fourth to fifth times.

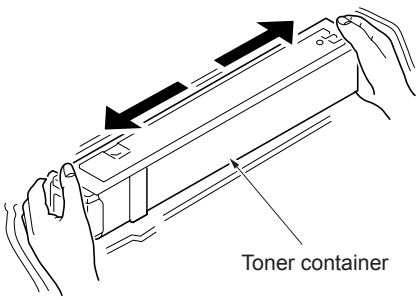


Figure 1-3-7

2. Install the toner containers.
3. Close the toner container covers.

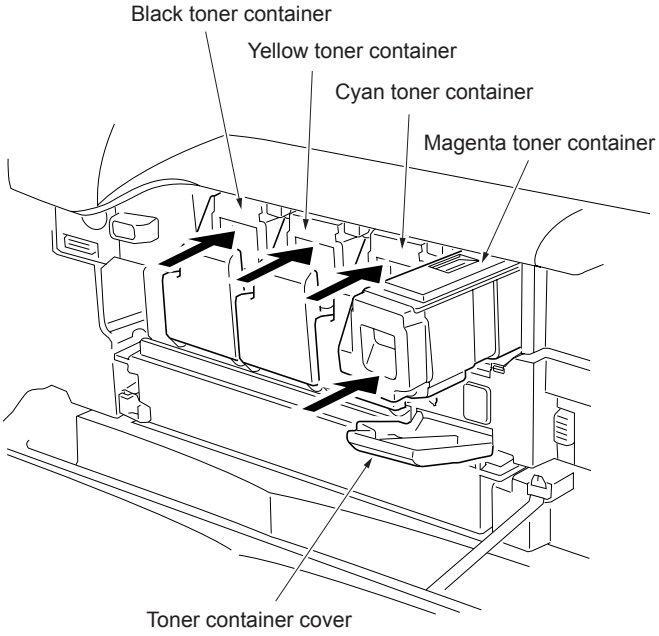


Figure 1-3-8

Installing the waste toner box.

1. Remove the four caps and attach the cap holder section.

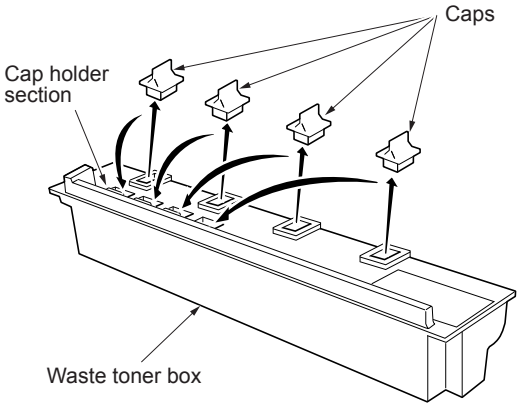


Figure 1-3-9

2. Install the waste toner box to the printer.

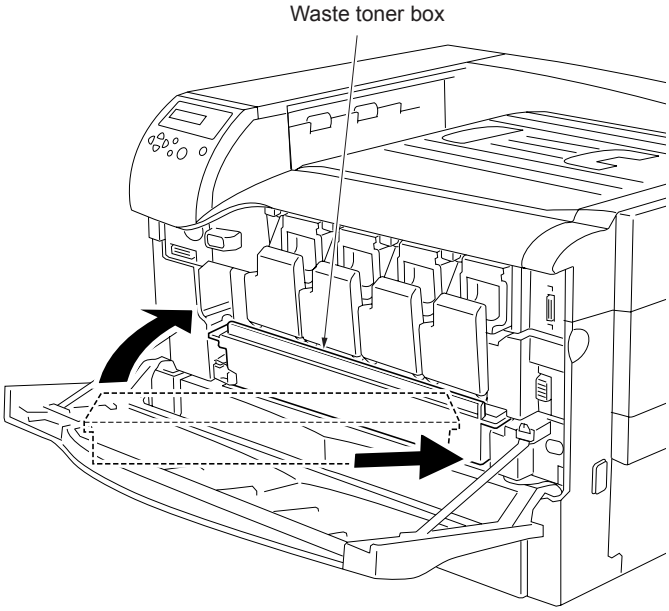


Figure 1-3-10

Securing the fuser press screws.

1. Open the left cover.
2. Pull out the fuser unit.
3. Tighten the two fuser press screws until they stop.
4. Close the fuser unit and left cover.

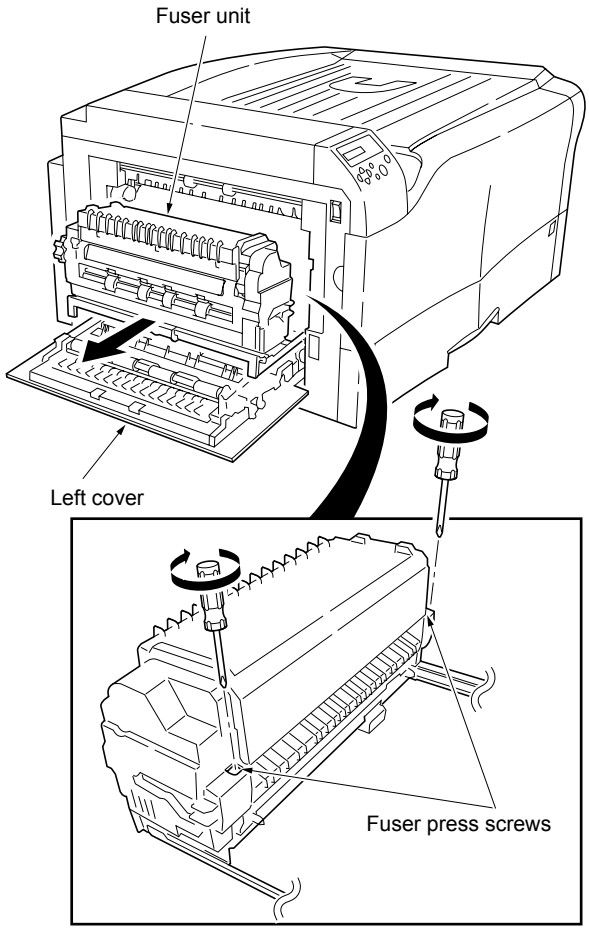


Figure 1-3-11

Loading paper.

1. Pull out the paper cassette.
2. Remove the guide holder.
3. Load the paper to the cassette and adjust the paper guides according to the paper size.
4. Open MP tray and remove the protect sheet.
5. Load the paper to MP tray and adjust the paper guides according to the paper size.

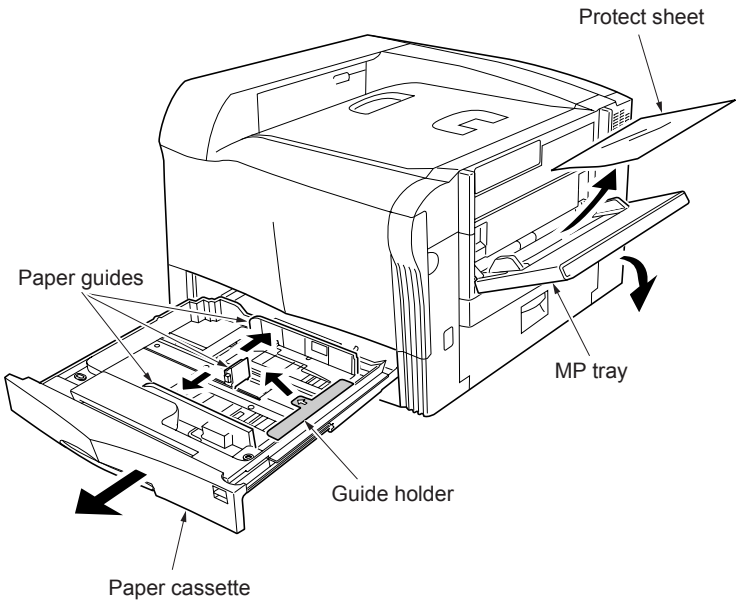


Figure 1-3-12

Connecting the cable.

1. Connect the interface connector of the printer (parallel, USB or the ethernet) to PC or network.
2. Connect the power cord to the printer AC inlet.
3. Connect the power cord to the wall outlet.

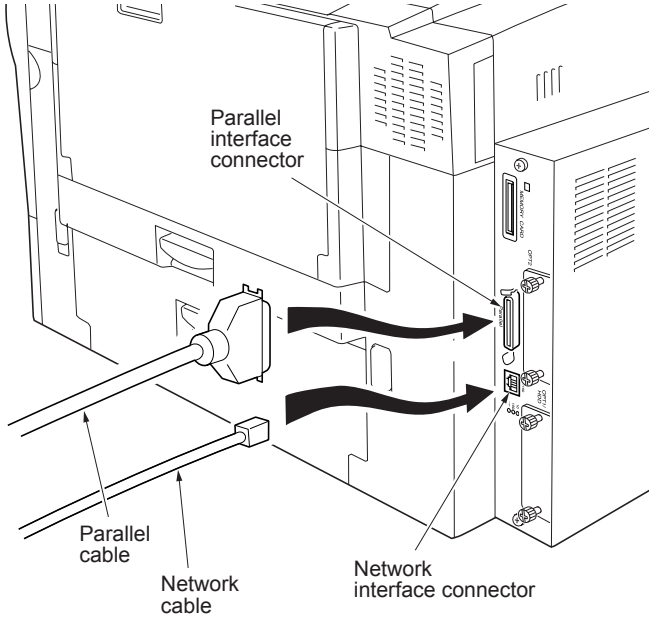


Figure 1-3-13

Printing a status page for test.

1. Turn on the printer power switch. The message will change from [Self test] to [Ready] when initialization is complete.
   * If the selecting message language will be displayed, press the △or ▽ key repeatedly until the message display shows the desired language and press the ENTER key.

- Use the following key operation to print a status page for test.
- Press the MENU key when [Ready] is displayed.
- Press the key to display [Print Status Page].
- Press the ENTER key to display [Print Status Page?].
- Press the ENTER key. Processing] will be displayed and the status page will be printed. When printing is complete, [Ready] will appear again.

2. Check to see if the status page is properly printed.

Completion of the machine installation.

1-3-2 Installing expansion memory (optional)

<Procedure>

1. Turn off printer power.
   * Caution: Do not insert or remove expansion memory while printer power is on. Doing so may cause damage to the printer and the expansion memory.
2. Remove two screws and then remove the main controller PWB.

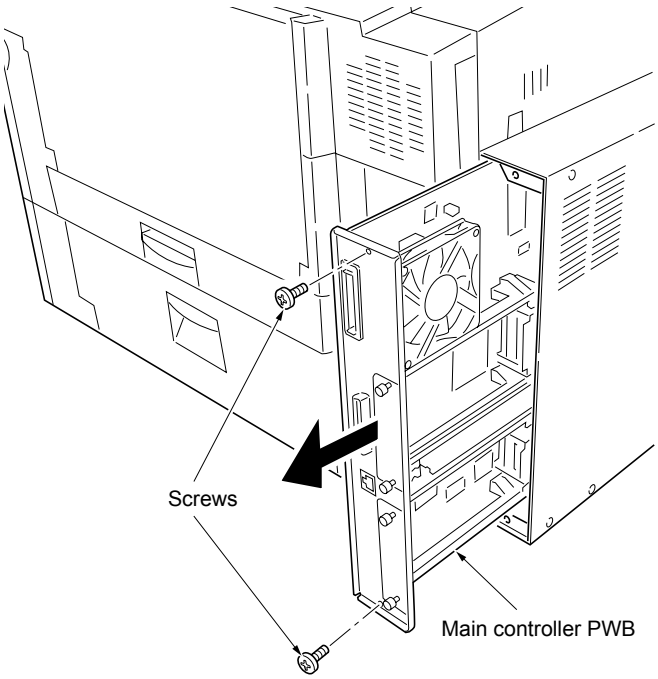


Figure 1-3-14

3. Open the stoppers of the memory socket.
4. Insert the memory so that the two notches of the memory are engaged with the projections of the memory socket.
5. Close the stoppers of the memory socket.
6. Reattach the main controller PWB in the printer.
7. Print a status page to check the memory expansion.
   * 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 128 MB.)

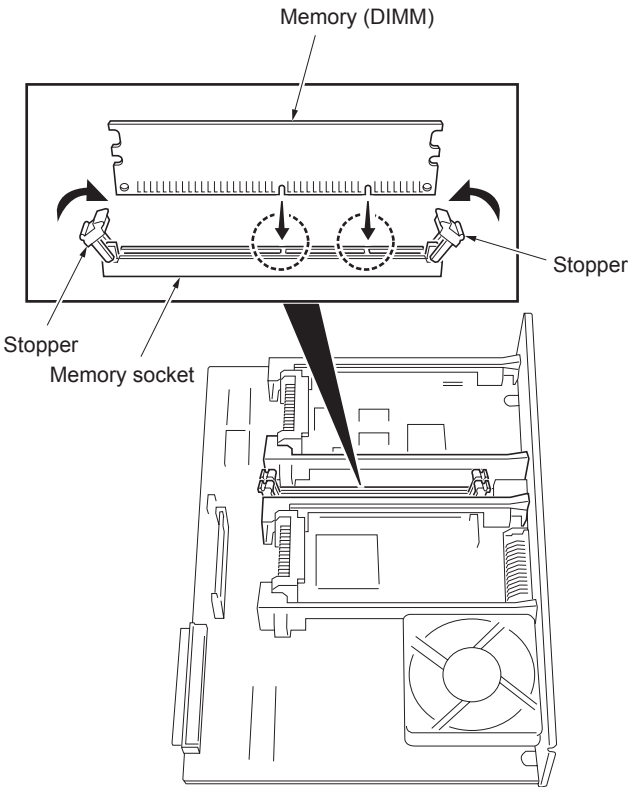


Figure 1-3-15

1-3-3 Installing a memory card (optional)

<Procedure>

1. Turn off printer power.
   * Caution: Do not insert or remove memory card while printer power is on. Doing so may cause damage to the printer and the memory card.
2. Insert the memory card into the memory card slot.
3. Format the memory card before use. (Refer to the operation guide.)

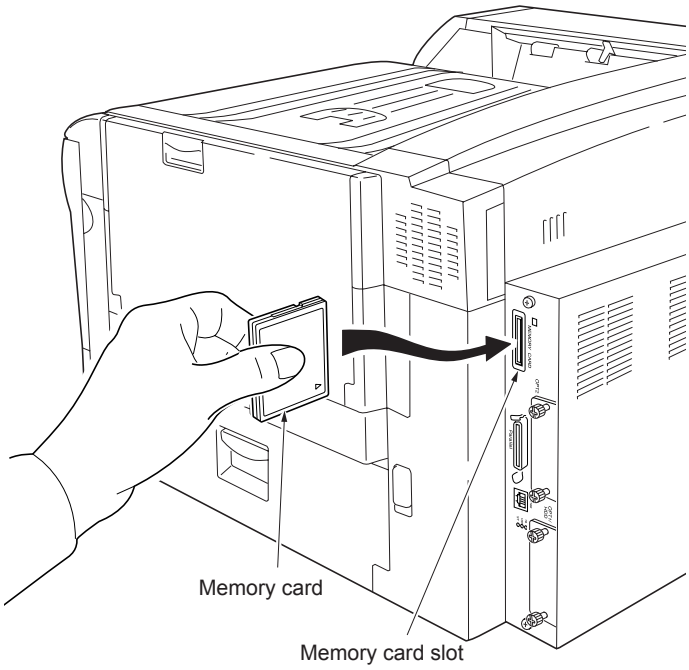


Figure 1-3-16

1-3-4 Installing the network interface card (optional)

<Procedure>

1. Turn off printer power.
2. Remove the two screws and then remove the optional interface slot cover.
3. Insert the network interface card into the optional interface slot.
4. Use the two screws to secure the network interface card.

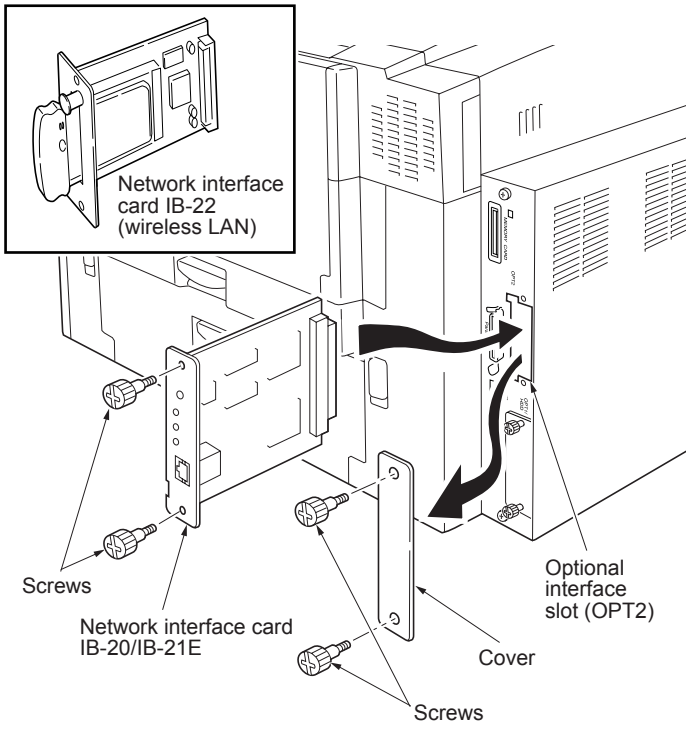
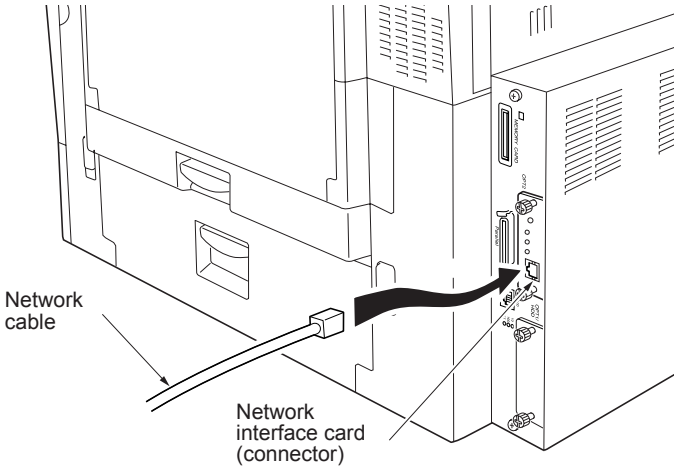


Figure 1-3-17

5. Connect the network cable (IB-20 and IB-21E).
6. Configure the network interface card. (See the IB-2x quick configuration guide.)



Network configuration (ex. IB-22)

Item	Setting
Wireless LAN Mode	Ad hoc/802.11 Ad hoc/ Infrastruccture/Automatic
SSID	Any string (up to 32 characters)
Channel	Depends on the environment
Encryption (WEP)	DISABLE/64bit/128bit
WEP key	Hexadecimal setting (00-FF) 64 bits = 10 digits 128 bits = 26 digits

Figure 1-3-18

1-3-5 Installing the hard disk unit (optional)

*Hard disk unit is standard equipment for 120 V (U.S.A.) specifications.

<Procedure>

1. Turn off printer power.
2. Remove the two screws and remove the optional interface slot cover.
3. Insert the hard disk unit into the optional interface slot.
4. Use the two screws to secure the hard disk unit.
5. Format the hard disk unit.
   (Refer to the operation guide.)

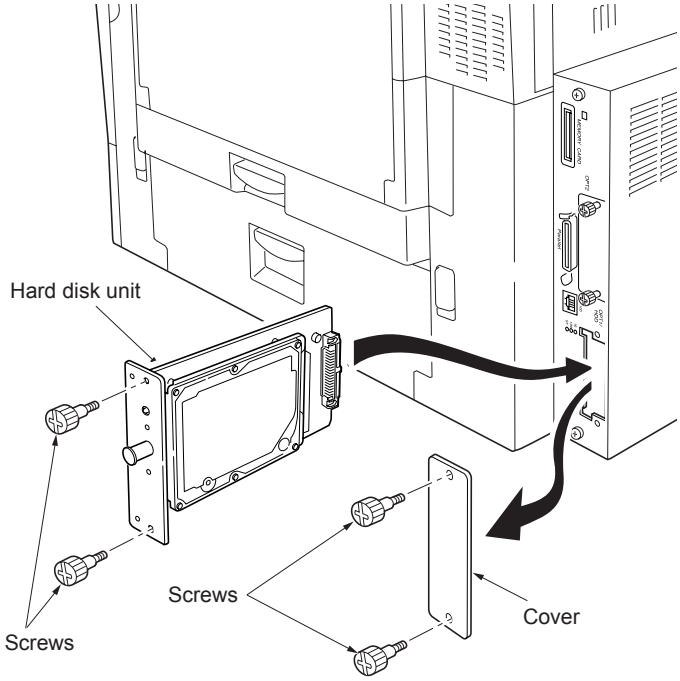


Figure 1-3-19

1-3-6 Installing the dehumidifier heater (optional)

Dehumidifier heater installation requires the following parts:
- Dehumidifier heater (P/N 2BG28740): for 120 V specifications
- Dehumidifier heater (P/N 2BG28750): for 220 - 240 V specifications
- Two binding screws [bind tap tight-S M3 × 6 trivalent chromate] (P/N B1A53060A)

<Procedure>

1. Remove the cassette or optional duplex unit*.
   *Duplex unit is standard equipment for 120 V (U.S.A.) specifications.
2. Remove the paper feed unit [transfer unit] (See page 1-6-12).
3. Remove the rear cover (See page 1-6-5).
4. Attach the dehumidifier heater by using the two screws.
5. Insert the connector of the dehumidifier heater to square hole.
6. Connect the connector and connector for power supply.

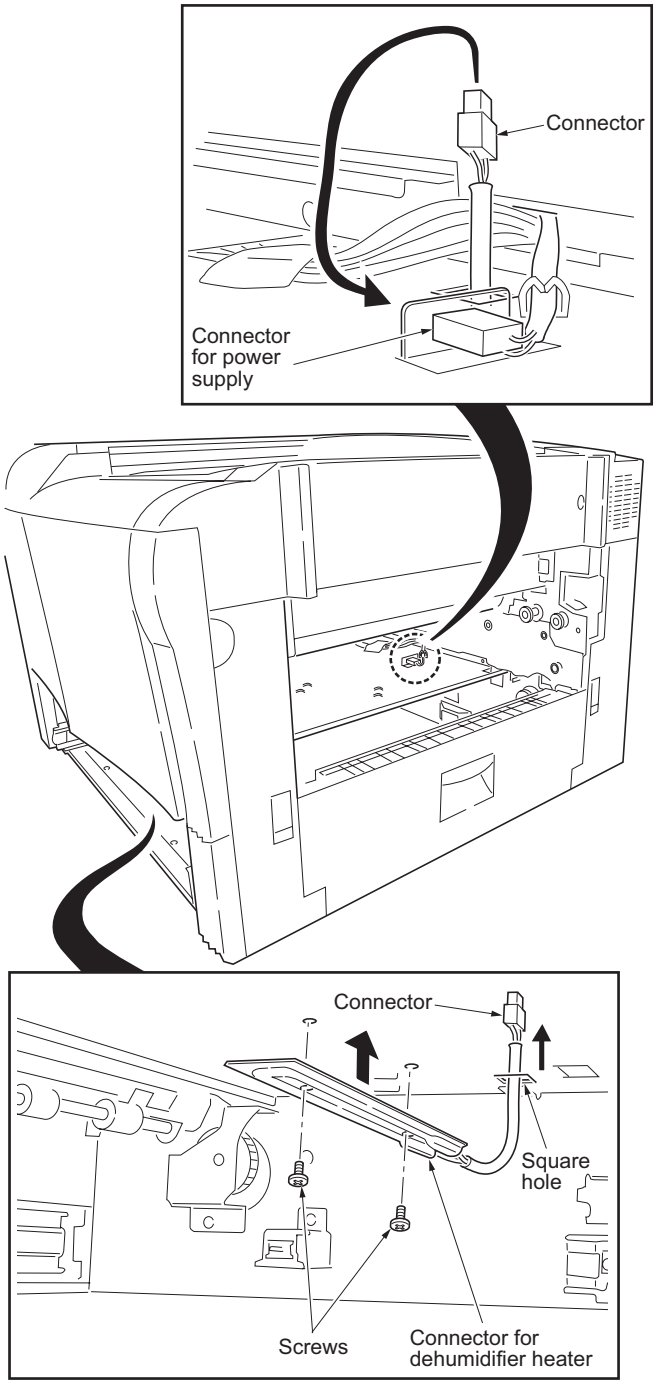


Figure 1-3-20

7. Remove the connectors for protection from the connectors for power supply and dehumidifier heater.
8. Connect the connector for power supply and connector for dehumidifier heater.
9. Refit all the removed parts.

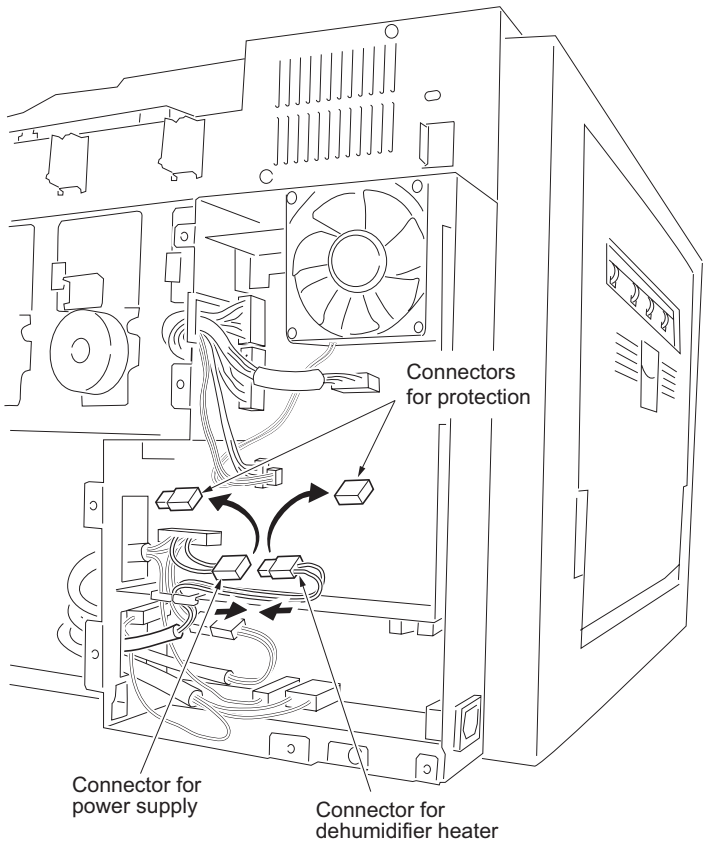


Figure 1-3-21

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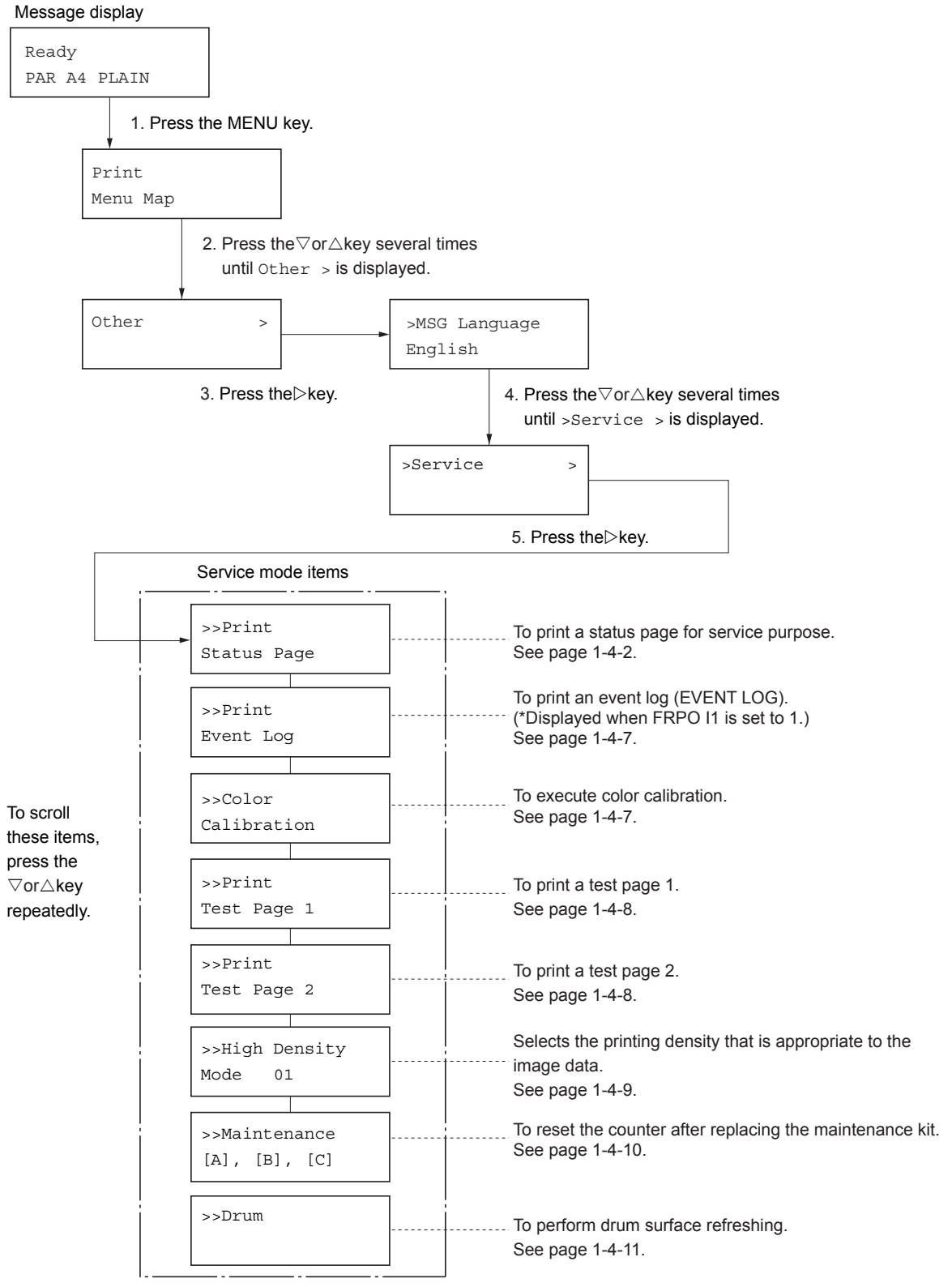
1-4-1 Service mode

The printer is equipped with various service mode that can be accessed with the MENU key operation on the operation panel.

(1) Executing service mode



Service items	Description
>>Print Status Page	**Printing a status page for service purpose** **Description** Prints a status page for service purpose. The status page includes various printing settings and service cumulatives. **Purpose** To acquire the current printing environmental parameters and cumulative information. **Procedure** 1.Enter the service mode [>>Print Status Page]. 2.Press the ENTER key. "Print Status Page?" will be displayed. 3.Press the ENTER key. Two pages will be printed. (The second page includes service information.)

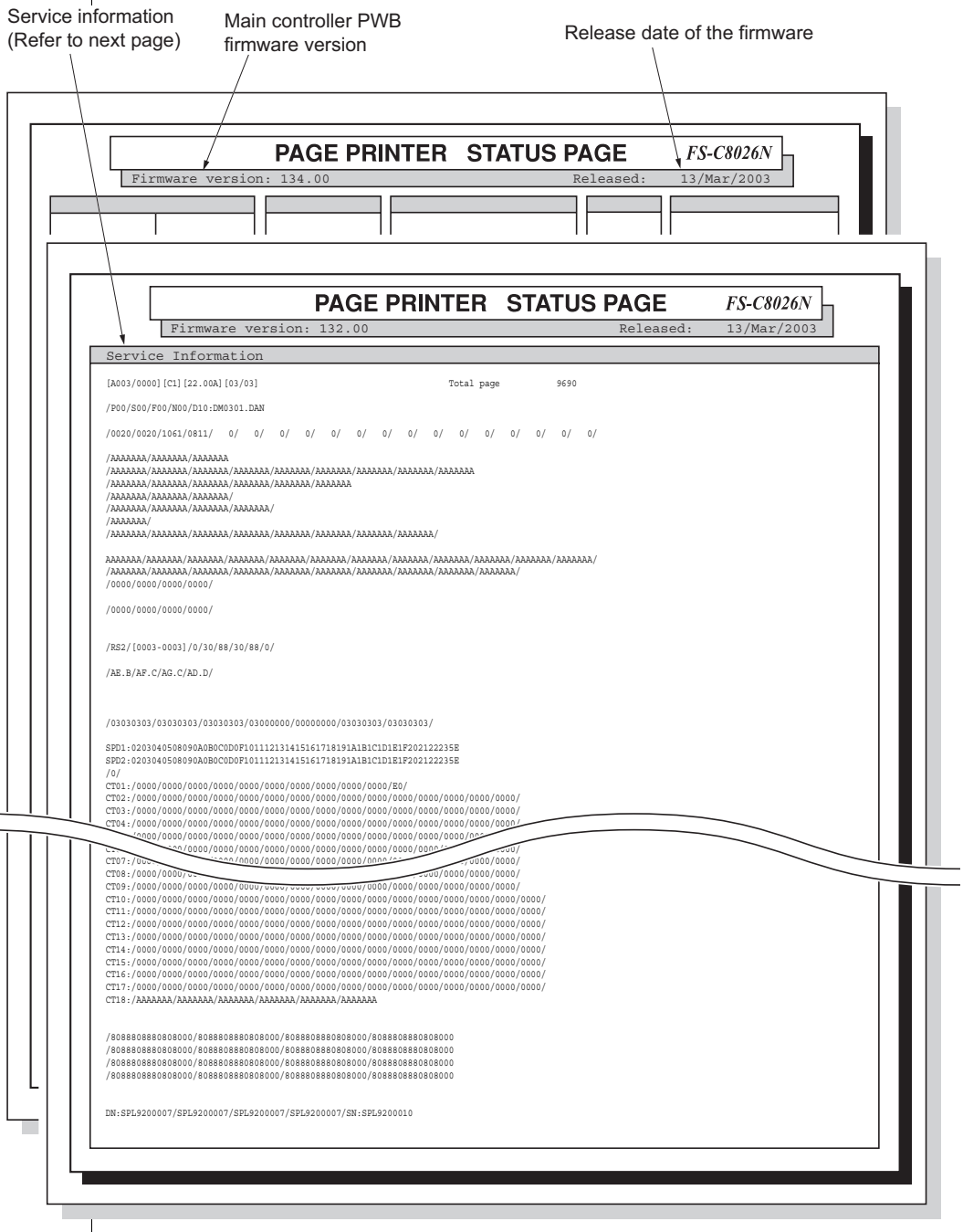


Figure 1-4-1

Service items	Description

Service information

```
[A003/0000] [C1] [22.00A] [03/03]                                    Total page        9690
    (1)      (2)    (3)     (4)                                          (5)
/P00/S00/F00/N00/D10:DM0301.DAN
 (6) (7) (8) (9)       (10)
/0020/0020/1061/0811/  0/   0/   0/   0/   0/   0/   0/   0/   0/   0/   0/   0/   0/   0/
         (11)                    (12)                          (13)                (14)
(15) /AAAAAAA/AAAAAAA/AAAAAAA
(16) /AAAAAAA/AAAAAAA/AAAAAAA/AAAAAAA/AAAAAAA/AAAAAAA/AAAAAAA/AAAAAAA/AAAAAAA
(17) /AAAAAAA/AAAAAAA/AAAAAAA/AAAAAAA/AAAAAAA/AAAAAAA
(18) /AAAAAAA/AAAAAAA/AAAAAAA/
(19) /AAAAAAA/AAAAAAA/AAAAAAA/AAAAAAA/
(20) /AAAAAAA/
     /AAAAAAA/AAAAAAA/AAAAAAA/AAAAAAA/AAAAAAA/AAAAAAA/AAAAAAA/
              (21)                          (22)
(23) /AAAAAAA/AAAAAAA/AAAAAAA/AAAAAAA/AAAAAAA/AAAAAAA/AAAAAAA/AAAAAAA/AAAAAAA/AAAAAAA/AAAAAAA/
(24) /AAAAAAA/AAAAAAA/AAAAAAA/AAAAAAA/AAAAAAA/AAAAAAA/AAAAAAA/AAAAAAA/AAAAAAA/
     /0000/0000/0000/0000/0000/
           (25)      (26)
(27) /0000/0000/0000/0000/

     /RS2/ [0003-0003] /0/30/88/30/88/0/
      (28)    (29)    (30)(31)(32)(33)(34)(35)
(36) /AE.B/AF.C/AG.C/AD.D/


(37) /03030303/03030303/03030303/03000000/00000000/03030303/03030303/

(38) SPD1:0203040508090A0B0C0D0F101112131415161718191A1B1C1D1E1F202122235E
(39) SPD2:0203040508090A0B0C0D0F101112131415161718191A1B1C1D1E1F202122235E
(40) /0/
(41) CT01:/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/E0/
(42) CT02:/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/
     CT03:/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/
     CT04:/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/
     CT05:/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/
     CT06:/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/
     CT07:/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/
     CT08:/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/
     CT09:/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/
(43) CT10:/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/
     CT11:/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/
     CT12:/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/
     CT13:/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/
     CT14:/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/
     CT15:/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/
     CT16:/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/
     CT17:/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/0000/
(44) CT18:/AAAAAAA/AAAAAAA/AAAAAAA/AAAAAAA/AAAAAAA/AAAAAAA

(45) /8088808880808000/8088808880808000/8088808880808000/8088808880808000
     /8088808880808000/8088808880808000/8088808880808000/8088808880808000
     /8088808880808000/8088808880808000/8088808880808000/8088808880808000
     /8088808880808000/8088808880808000/8088808880808000/8088808880808000

     DN:SPL9200007/SPL9200007/SPL9200007/SPL9200007/SN:SPL9200010
                          (46)                        (47)
```

Service items	Description

	Items	Description
(1)	Engine ROM information	[Flash ROM version]
(2)	Operation panel PWB information	[Operation panel PWB mask ROM version]
(3)	Boot ROM information	[Boot ROM version]
(4)	Software jumper switch information (hexadecimal) [First byte/second byte (displayed in OEM mode only)]	First byte bit 0 = 1: (Fixed) bit 1 = 0: Overseas, 1: Domestic (Japan) bit 2, 3 (Not used) bit 4 = 0: Kyocera, 1: OEM bit 5 = 0: For Europe, 1: For US bit 6 = 0: Non MICR mode, 1: MICR mode bit 7 (Not used) Second byte: Displayed in OEM mode only
(5)	Total page	
(6)	Parallel I/O information	
(7)	Serial I/O error code	00: Normal bit 0: Framing error bit 1: Overrun error bit 2: Parity error
(8)	Operation panel lock status (displayed only when locked)	01: Partial lock 02: Full lock
(9)	NVRAM error (displayed only when any error has occurred)	01: ID error 02: Version error 03: Checksum error 04: NVRAM crash error
(10)	NVRAM downloading status	00: Normal (not downloaded) bit 0: Font data bit 1: Host data bit 2: Macro data bit 3: Program data bit 4: Operation panel message data (file name displayed) bit 5: OEM data (file name displayed) bit 6: Reserved bit 7: Error occurred
(11)	Printable area setting	/Top offset/Left offset/Page length/Page width
(12)	Left offset for each paper source	/MP tray/Cassette 1/Cassette 2/Cassette 3/Cassette 4/ Cassette 5/Duplex unit (1/600 inches unit)
(13)	Top offset for each paper source	/MP tray/Cassette 2/Cassette 3/Cassette 4/Cassette 5/ Duplex unit (1/600 inches unit)
(14)	Top offset for page rotation	/Top offset/Left offset/ (1/600 inches unit)
(15)	MP tray life counter	/Total/Small/Large
(16)	Optional paper feeder life counter	/Paper feeder 1 Total/Small/Large /Paper feeder 2 Total/Small/Large /Paper feeder 3 Total/Small/Large
(17)	Optional paper feeder life counter	/Paper feeder 4 Total/Small/Large /Paper feeder 5 Total/Small/Large
(18)	Duplex unit counter	/Duplex unit Total/Small/Large

Service items	Description

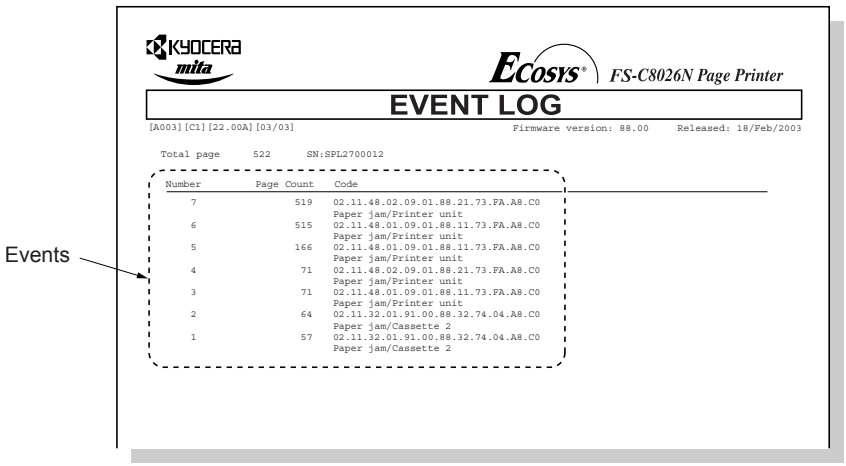
	Items	Description
(19)	Drum life counter	/Cyan drum unit/Magenta drum unit/Yellow drum unit/ Black drum unit
(20)	Color print counter	/Cyan/Magenta/Yellow/Black
(21)	Maintenance kit counter	MK counter A/B/C/
(22)	Optional finisher counter (1)	Optional finisher multi tray counter 1/2/3/4/5/
(23)	Optional finisher counter (2)	Finisher total/Main tray/Sub tray/Main tray (face down)/ Main tray (face up)/Booklet tray (booklet)/Saddle stitch count/Punch count/Staple total counts/Upper left staple/ Lower left staple/Central 2 places staple/
(24)	Optional finisher counter (3)	Multi tray 1 (face down)/1 (face up)/ Multi tray 2 (face down)/2 (face up)/ Multi tray 3 (face down)/3 (face up)/ Multi tray 4 (face down)/4 (face up)/ Multi tray 5 (face down)/5 (face up)/
(25)	Optional unit software version	/Paper feeder 1/Paper feeder 2/Finisher/
(26)	LPH drive PWB software version	/LPH drive PWB software version
(27)	Drum ID	/Cyan drum/Magenta drum/Yellow drum/Black drum
(28)	Serial interface information	RS2: RS-232C RS4: RS-422 Displays when optional serial interface board is installed.
(29)	Optional unit information	Upper 2 bytes Bit 0: MPF Bits 1 to 5: Feeders 1 to 5 Bit 6: Reserved Bit 7: Duplex unit Lower 2 bytes Bit 0: Face-up Bits 2 to 3: Reserved Bit 4: Staple sorter Bit 5: Finisher Bit 6: Reserved Bit 7: Stocker finisher Bits 8 to 15: Reserved
(30)	Operation panel message language	PMSG command setting (decimal)
(31)	Current temperature	0 to 60 °C (in 1 °C increment, "-"= Humidity/temperature sensor is abnormal.)
(32)	Current humidity	10 to 90% RH (in 2% increment)
(33)	Current temperature inside the printer	
(34)	Current humidity inside the printer	
(35)	Toner mode (W8)	
(36)	Average printing ratio (2 digits for integer part, 1 digit for decimal part) Printing ratio for the total period from shipping (displayed in%)	/Cyan/Magenta/Yellow/Black

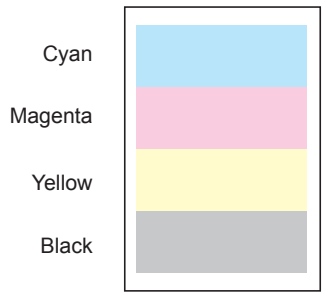
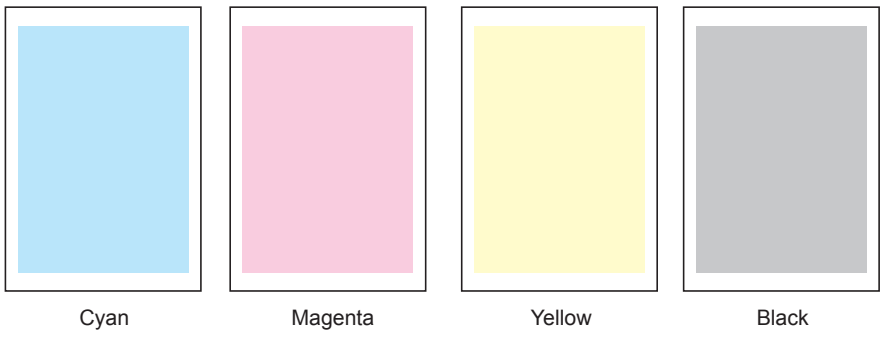
Service items	Description

	Items	Description
(37)	Media type attributes	Media type setting value from 1 to 28 (fuser temperature, paper thickness, duplex printing) (14 to 20 are unused and always 0x00.)
(38)	Memory SPD information (slot 1)	Bus error if all digits are "E".
(39)	Memory SPD information (slot 2)	Bus error if all digits are "E".
(40)	Calibration prohibition setting	0: Permit 1: Prohibit
(41)	Calibration information	/Background value (S-wave) /Background value (P-wave)/Dark current (S-wave) /Dark current (P-wave)/Bias data magenta/cyan/yellow/black/Overabundance value (S-wave) /Overabundance value (P-wave) /Performance/ E00: Normal E10: Sensor value is not a monotonous increase E11: Few amounts of increases of a sensor value E12: Sensor value is not a monotonous increase and few amounts of increases E20: Calibration discontinuance request from engine controller PWB
(42)	Measure bias data	Max 0%/ 85%/ 40%/ High 0%/ 85%/ 40%/ Middle 0%/ 85%/ 40%/ Max 0%/ 85%/ 40%/ Lower 0%/ 85%/ 40%/ Min 0%/ 85%/ 40%/ CT02 to CT09: First time CT20 to CT27: Second time CT02/CT20: Magenta, S-wave CT03/CT21: Cyan, S-wave CT04/CT22: Yellow, S-wave CT05/CT23: Black, S-wave CT06/CT24: Magenta, P-wave CT07/CT25: Cyan, P-wave CT08/CT26: Yellow, P-wave CT09/CT27: Black, P-wave
(43)	I/O measurement data	100%/ 0%/ 95%/ 0%/ 85%/ 0%/ 70%/ 0%/ 50%/ 0%/ 30%/ 0%/ 15%/ 0%/ 5%/ 0%/ CT10 to CT17: First time CT28 to CT35: Second time CT10/CT28: Magenta, S-wave CT11/CT29: Cyan, S-wave CT12/CT30: Yellow, S-wave CT13/CT31: Black, S-wave CT14/CT32: Magenta, P-wave CT15/CT33: Cyan, P-wave CT16/CT34: Yellow, P-wave CT17/CT35: Black, P-wave
(44)	Counter for calibration (CT18/CT36)	CT18: First time CT36: Second time Total/Cancellation/Retry/e10 error/ e11 error/ e12 error
(45)	Various correction values for maintenance mode	All parameters are displayed. 512 bytes at the maximum.
(46)	Drum serial number	/Cyan/Magenta/Yellow/Black
(47)	Machine serial number	-

NOTE: **Code conversion**

A	B	C	D	E	F	G	H	I	J
0	1	2	3	4	5	6	7	8	9

Service items	Description
>>Print Event Log	**Printing an event log (EVENT LOG)** **Description** Prints the history of paper misfeeds and self-diagnostic errors including up to 16 items from the latest occurrence of such an error. (If the number of errors exceeds 16, errors will be deleted sequentially from the oldest one.) **Purpose** To allow machine malfunction analysis based on the frequency of paper misfeeds and self diagnostic errors. **Procedure** 1.Enter the service mode [>>Print Event log]. 2.Press the ENTER key. ">Print Event Log?" will be displayed. 3.Press the ENTER key. A sheet of event log will be printed.  KYOCERA mita ECOSYS FS-C8026N Page Printer EVENT LOG [A003] [C1] [22.00A] [03/03] Firmware version: 88.00 Released: 18/Feb/2003 Total page 522 SN:SPL2700012 Events Number / Page Count / Code 7 519 02.11.48.02.09.01.88.21.73.FA.A8.C0 Paper jam/Printer unit 6 515 02.11.48.01.09.01.88.11.73.FA.A8.C0 Paper jam/Printer unit 5 166 02.11.48.01.09.01.88.11.73.FA.A8.C0 Paper jam/Printer unit 4 71 02.11.48.02.09.01.88.21.73.FA.A8.C0 Paper jam/Printer unit 3 71 02.11.48.01.09.01.88.11.73.FA.A8.C0 Paper jam/Printer unit 2 64 02.11.32.01.91.00.88.32.74.04.A8.C0 Paper jam/Cassette 2 1 57 02.11.32.01.91.00.88.32.74.04.A8.C0 Paper jam/Cassette 2 **Figure 1-4-2 Event log (EVENT LOG)**
>>Color Calibration	**Execution of color calibration** **Description** Executing the density of color using. **Purpose** To carry out color calibration manually besides it can be carried out automatically each time the printer is turned on. **Start** Enter the service mode [>>Color Calibration]. Press the ENTER key twice. The color calibration starts and automatically finishes. **Completion**

Service items	Description
>>Print Test Page 1	**Test Page 1** **Description** Printing a test page that has four colors printed on a sheet. **Purpose** To check the activation of the process units. **Start** Enter the service mode (>>Printing Test Page 1). Press the ENTER key twice. The test page is printed. **Completion**  **Figure 1-4-3 Test Page 1**
>>Print Test Page 2	**Test Page 2** **Description** Prints four sheets in individual colors. **Purpose** To check the activation of the process units. **Start** Enter the service mode (>>Printing Test Page 2). Press the ENTER key twice. Four test pages are printed. **Completion**  **Figure 1-4-4 Test Page 2**

Service items	Description

```
>>High Density
Mode   01
```

Adjusting the high density mode

Description
During continuous printing of data with a high print ratio, such as pages that have great deal of heavy or solid images, etc., the printing density may eventually decline. It is possible to prevent such a drop in the printing density by changing the setting for the high density mode. However, if continuous printing is performed while a higher setting is designated for the high density mode, the printing speed will be lowered.

Purpose
Performed so that printing can be accomplished in accordance with the image data in order to limit the reduction in the image density.

Start
Enter the service mode (>>High Density Mode).
Press the [ENTER] key. "?" will blink.
Press the [△/▽] key and select the desired mode (from 01 to 03).

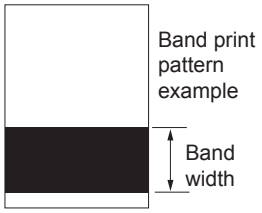
01	This is the standard (default) setting. At a print ratio of less than 30%, the printing speed for A4 size paper will be 26 sheets/minute.
02	Priority is given to the printing speed. A balance is struck between the printing speed and the image density of the most concentrated printing area, and there is minimal printing speed lost due to the print ratio.
03	Priority is given to the printing density. Depending upon the print ratio, the printing speed may be slower than with the mode [02] setting.

Press the [ENTER] key. The new value is set.

Completion

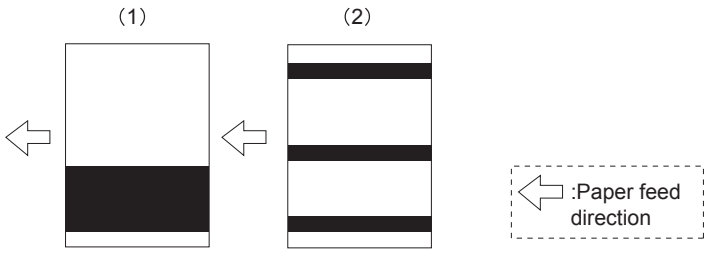
Note

The print ratio refers to the percentage of the total area that each toner color uses on an A4 size piece of paper.

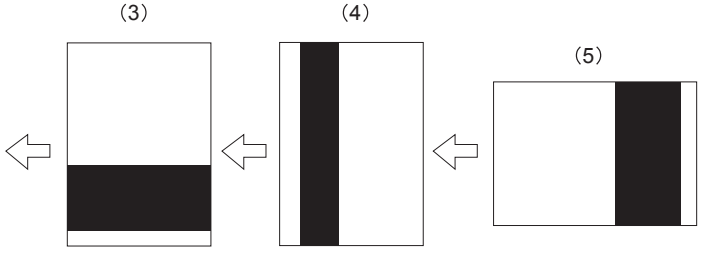


Band width (mm)	Print ratio (%)
60	20
89	30
148	50
(reference) A3 size paper, full-page solid color	200

Even though illustrations (1) and (2) indicate the same printing ratio, it is more difficult to experience a reduction in the image density with example (2), where the image pattern is divided. This is because the area to be printed (developed) is not concentrated in one area and involves a greater portion of the full surface along the length of the developing roller.



Even though illustrations (3) and (4), it is more difficult to experience a reduction in the image density with example (4), where the image pattern is wider in the direction of the paper feed.
Thus, though the image pattern is the same as in (3), it is also more difficult to experience a reduction in the image density in the case of illustration (5), where the image pattern is wider in the direction of the paper feed.



Service items	Description
>>Maintenance [A]	**Counter reset for the maintenance kit A** **Description** The "Install MK [A]" message means that maintenance kit A should be replaced at every 300,000 images of printing. The interval counter must be reset using this service item. MK-810A Maintenance kit A includes the following units: • TR-810 transfer unit • FK-810 fuser unit • Ozone filter **Purpose** To reset the life counter for the transfer unit and fuser unit in maintenance kit A. **Procedure** 1.Replace the transfer unit (See page 1-6-12). 2.Replace the fuser unit (See page 1-6-17). 3.Replace the ozone filter (See page 1-6-40). **Start** Enter the service mode (>>Maintenance [A]). Press the ENTER key twice. The counter for each component is reset immediately. **Completion** Note: Occurrences of resetting the maintenance kits are recorded on the service status page in number of pages or images at which the maintenance kit was replaced (See page 1-4-2).
>>Maintenance [B]	**Counter reset for the maintenance kit B** **Description** The "Install MK [B]" message means that maintenance kit B should be replaced at every 300,000 images of printing. The interval counter must be reset using this service item. MK-810B Maintenance kit B includes the following units: • DV-810K black drum unit • DK-810 black developer **Purpose** To reset the life counter for the black drum unit and developer in maintenance kit B. **Procedure** 1.Replace the black drum unit (See page 1-6-15). 2.Replace the black developer (See page 1-6-15). **Start** Enter the service mode (>>Maintenance [B]). Press the ENTER key twice. The counter for each component is reset immediately. **Completion** Note: Occurrences of resetting the maintenance kits are recorded on the service status page in number of pages or images at which the maintenance kit was replaced (See page 1-4-2).

Service items	Description
>>Maintenance [C]	**Counter reset for the maintenance kit C** **Description** The "Install MK [C]" message means that maintenance kit C should be replaced at every 300,000 images of printing. The interval counter must be reset using this service item. MK-810C Maintenance kit C includes the following units: • DK-810 yellow drum unit • DK-810 magenta drum unit • DK-810 cyan drum unit • DV-810Y yellow developer • DV-810M magenta developer • DV-810C cyan developer **Purpose** To reset the life counter for the yellow/magenta/cyan drum units and developers in maintenance kit C. **Procedure** 1.Replace the yellow/magenta/cyan drum units and developers (See page 1-6-15). **Start** Enter the service mode (>>Maintenance [C]). Press the ENTER key twice. The counter for each component is reset immediately. **Completion** Note: Occurrences of resetting the maintenance kits are recorded on the service status page in number of pages or images at which the maintenance kit was replaced (See page 1-4-2).
>>Drum	**Drum surface refreshing** **Description** Rotates the drum approximately 5 minutes with toner lightly applied onto the drum using the high-voltage output control of the engine controller PWB. 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 contamination. This mode is useful when dew condensation on the drum occurs. **Procedure** 1. Enter the service mode [>>Drum]. 2. Press the ENTER key. Message ">Drum?" will be displayed. 3. Press the ENTER key. Drum surface refreshing will start and finish after approximately 3 minutes.

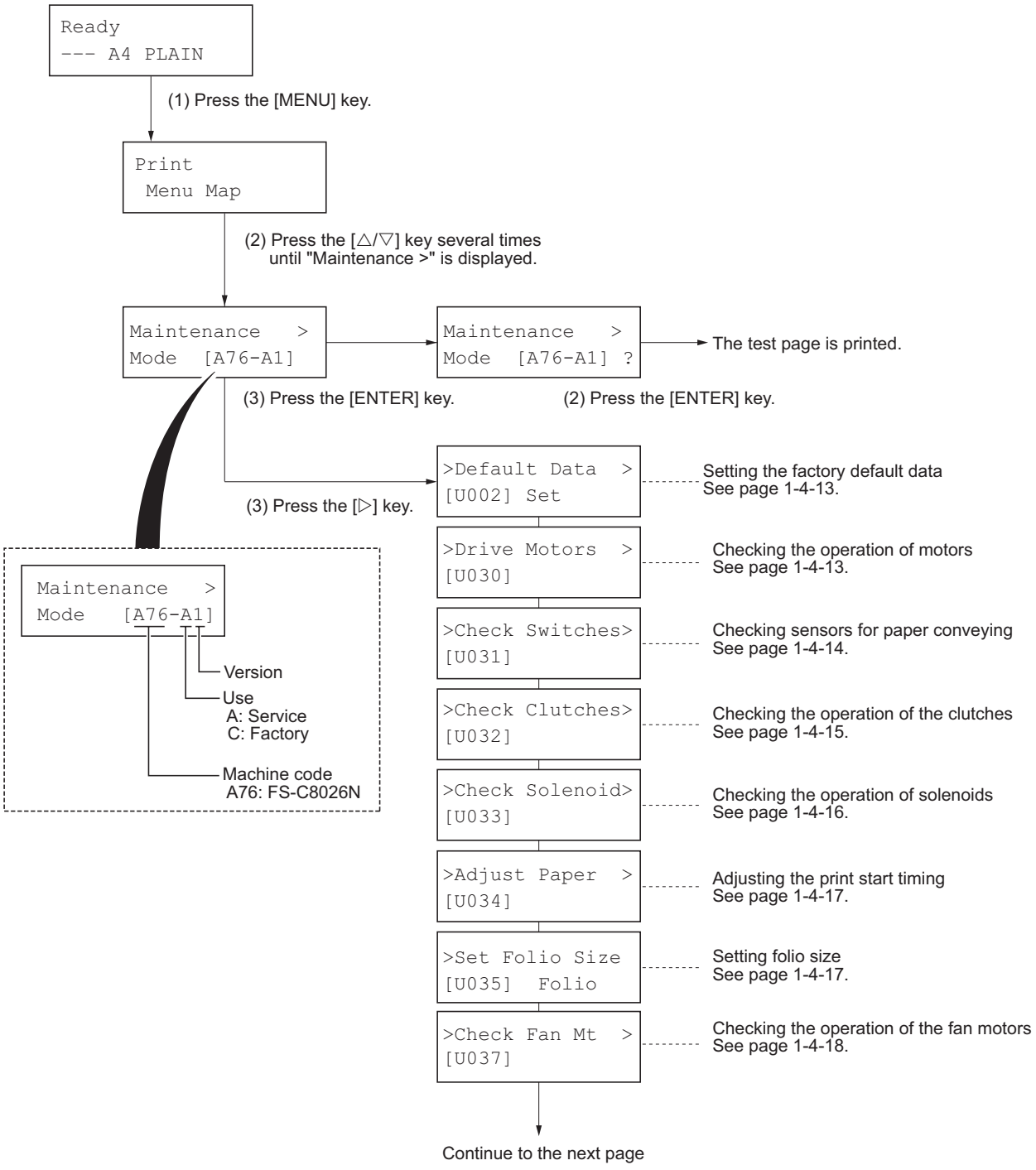
1-4-2 Maintenance mode

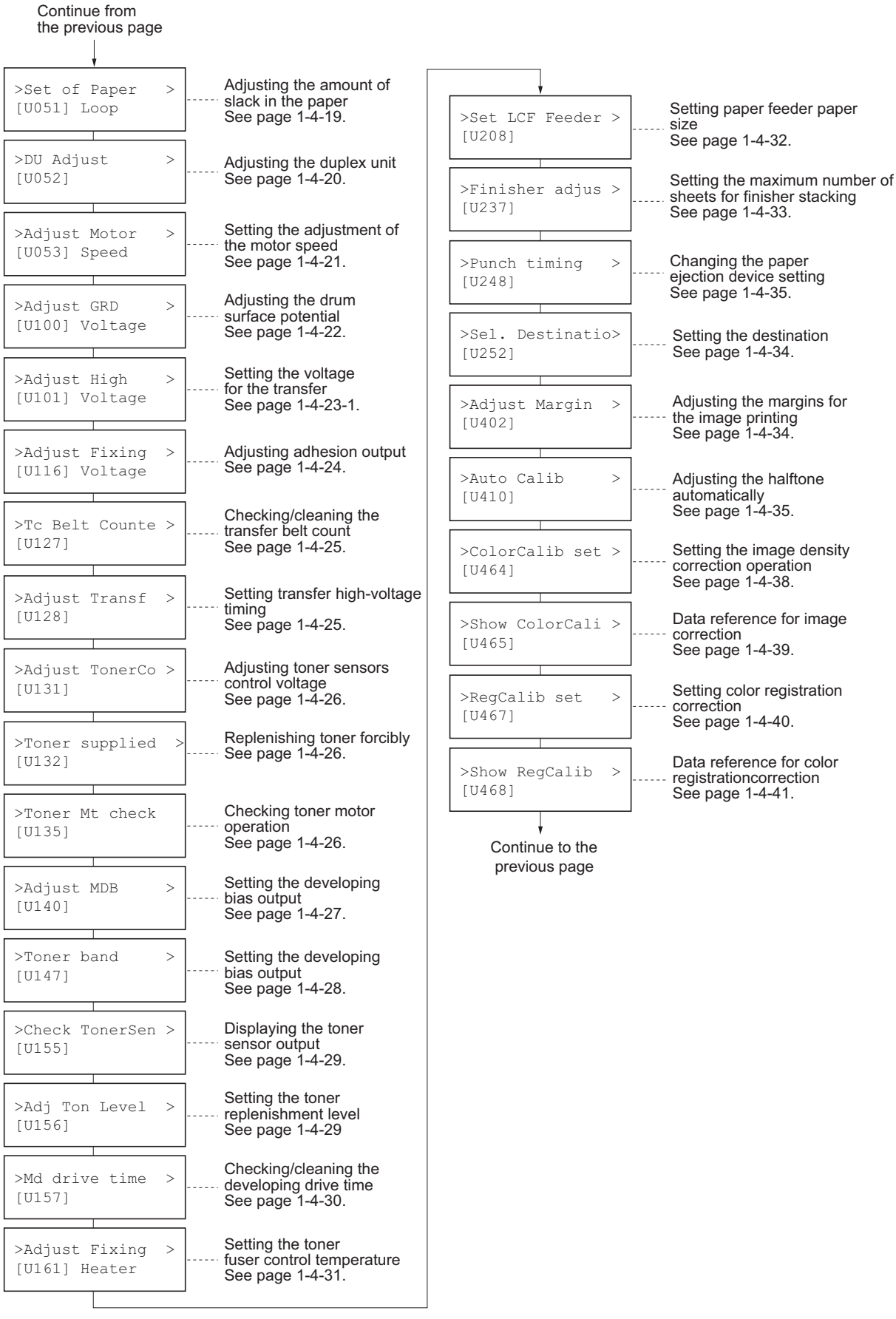
(1) Maintenance mode

The printer is equipped with a maintenance function which can be used to maintain and service the machine.
To run the maintenance mode, Insert a compact flash card to which the maintenance program has been written into the printer and load the maintenance mode program to the printer using either method.

* Turn off and on the printer. The maintenance program will be automatically loaded into the printer.
* Load the maintenance mode program with read program.
* Enter the MENU mode and display the “>>Maintenance” in the “Memory Card>”, then press the [ENTER] key.

The maintenance mode can be executed from the MENU mode.
If the compact flash card is removed from the printer and then the printer is turned off and on, the maintenance mode program will be deleted from the printer and the maintenance mode will be deleted from the MENU mode.




Continue from the previous page
>Set of Paper > [U051] Loop
Adjusting the amount of slack in the paper See page 1-4-19.
>DU Adjust > [U052]
Adjusting the duplex unit See page 1-4-20.
>Adjust Motor > [U053] Speed
Setting the adjustment of the motor speed See page 1-4-21.
>Adjust GRD > [U100] Voltage
Adjusting the drum surface potential See page 1-4-22.
>Adjust High > [U101] Voltage
Setting the voltage for the transfer See page 1-4-23-1.
>Adjust Fixing > [U116] Voltage
Adjusting adhesion output See page 1-4-24.
>Tc Belt Counte > [U127]
Checking/cleaning the transfer belt count See page 1-4-25.
>Adjust Transf > [U128]
Setting transfer high-voltage timing See page 1-4-25.
>Adjust TonerCo > [U131]
Adjusting toner sensors control voltage See page 1-4-26.
>Toner supplied > [U132]
Replenishing toner forcibly See page 1-4-26.
>Toner Mt check [U135]
Checking toner motor operation See page 1-4-26.
>Adjust MDB > [U140]
Setting the developing bias output See page 1-4-27.
>Toner band > [U147]
Setting the developing bias output See page 1-4-28.
>Check TonerSen > [U155]
Displaying the toner sensor output See page 1-4-29.
>Adj Ton Level > [U156]
Setting the toner replenishment level See page 1-4-29
>Md drive time > [U157]
Checking/cleaning the developing drive time See page 1-4-30.
>Adjust Fixing > [U161] Heater
Setting the toner fuser control temperature See page 1-4-31.
>Set LCF Feeder > [U208]
Setting paper feeder paper size See page 1-4-32.
>Finisher adjus > [U237]
Setting the maximum number of sheets for finisher stacking See page 1-4-33.
>Punch timing > [U248]
Changing the paper ejection device setting See page 1-4-35.
>Sel. Destinatio> [U252]
Setting the destination See page 1-4-34.
>Adjust Margin > [U402]
Adjusting the margins for the image printing See page 1-4-34.
>Auto Calib > [U410]
Adjusting the halftone automatically See page 1-4-35.
>ColorCalib set > [U464]
Setting the image density correction operation See page 1-4-38.
>Show ColorCali > [U465]
Data reference for image correction See page 1-4-39.
>RegCalib set > [U467]
Setting color registration correction See page 1-4-40.
>Show RegCalib > [U468]
Data reference for color registrationcorrection See page 1-4-41.
Continue to the previous page

<table>
<tr><th>U No.</th><th>Description</th></tr>
<tr><td>U002</td><td>
Setting the factory default data
Description
Restore the machine conditions to the factory default settings.
Purpose
Used to return the machine settings to initial settings.
Method
1. Enter the maintenance mode and press the [△/▽] key to display "U002".
2. Press the [ENTER] key. "?" will be displayed.
<pre>>Default Data
[U002] Set ?</pre>
3. Press the [ENTER] key. Each setting will be initialized.
4. To keep the setting, press the [CANCEL] key.
</td></tr>
<tr><td>U030</td><td>
Checking the operation of motors
Description
Drives each motor.
Purpose
To check the operation of each motor.
Method
1. Enter the maintenance mode and press the [△/▽] key to display "U030".
<pre>>Drive Motors >
[U030]</pre>
2. Press the [▷] key to display the submenu screen.
3. Press the [△/▽] key to select the motor to activate.
<table>
<tr><th>Submenu display</th><th>Motor</th></tr>
<tr><td>>>BK Motor</td><td>User motor, drum motor K, and transfer motor</td></tr>
<tr><td>>>COLOR Motor</td><td>Developing motor, user motor, drum motor Y/C/M, and transfer motor</td></tr>
<tr><td>>>FEED Motor</td><td>Paper feed motor</td></tr>
<tr><td>>>TC UP/DOWN Mt</td><td>Transfer roller lift motor</td></tr>
<tr><td>>>Op.FEED1 Mt</td><td>Paper feed main motor (Upper of optional paper feeder)</td></tr>
<tr><td>>>Op.FEED2 Mt</td><td>Paper feed main motor (Lower of optional paper feeder)</td></tr>
</table>
4. Press the [ENTER] key. "Execute" will be displayed and operation will start.
5. To stop operation, press the [ENTER] key or the [CANCEL] key.
</td></tr>
</table>

U No.	Description

U031	**Checking sensors for paper conveying**
	Description
	Displays the ON/OFF status of each paper detection sensor on the paper conveying path.
	Purpose
	To check the operation of the sensors for paper conveying.
	Method
	1. Enter the maintenance mode and press the [△/▽] key to display "U031".
	`>Check Switches>`
	`[U031]`
	2. Press the [▷] key to display the submenu screen.
	3. Press the [△/▽] key to select the sensor to check.

Submenu display	Sensor
>>Check SW F1	Upper feed sensor
F2	Lower feed sensor
>>Check SW RES	Registration sensor
FIX	Fuser conveying sensor
>>Check SW LFJ	Face-up exit sensor
OV	Face-down tray paper full sensor
>>Check SW DU1	Duplex paper conveying sensor
DU2	Duplex paper entrance sensor*1
>>Check SW DU3	Duplex side registration home position sensor*1
U4	Duplex registration sensor*1
>>Check SW DU5	Duplex conveying sensor*1
DU6	Duplex paper eject sensor*1
>>Check SW F3	Paper feeder feed sensor*2 Paper feeder upper feed sensor*3
F4	Paper feeder lower feed sensor*3
>>Check SW F5	Paper feeder upper feed sensor*3
F6	Paper feeder lower feed sensor*4
>>Check SW -	Operation cannot be performed.
DK	Paper feeder upper feed sensor*4
>>Check SW LTF	Paper deck right conveying sensor*4
F7	Paper deck left conveying sensor*4

*1: Optional duplex unit (standard equipment for 120 V (U.S.A.) specifications),
*2: Optional paper feeder PF-640, *3: Optional paper feeder PF-645,
*4: Optional paper feeder PF-647

```
>>Check SW F1 :#
[031.1]    F2 :#
```

4. Turn on or off the switch manually to check the switch status. (0: Off 1: On)

U No.	Description

U032	**Checking the operation of the clutches**
	Description
	Turn each clutch ON.
	Purpose
	To check the operation of each clutch.
	Method
	1. Enter the maintenance mode and press the [△/▽] key to display "U032".
	`>Check Clutches>`
	`[U032]`
	2. Press the [▷] key to display the submenu screen.
	3. Press the [△/▽] key to select the clutch to operate.

Submenu display	Clutch
>>RES Clutch	Registration clutch
>>Bp Clutch	MP tray feed clutch
>>FEED1(H) Clutch	Feed H clutch
>>FEED1(L) Clutch	Feed L clutch
>>FEED2(H) Clutch	Paper feeder feed H clutch
>>FEED2(L) Clutch	Paper feeder feed L clutch
>>PF1(H) Clutch	Primary paper feed H clutch
>>PF1(L) Clutch	Primary paper feed L clutch
>>PF2(H) Clutch	Paper feeder upper feed H clutch*1
>>PF2(L) Clutch	Paper feeder upper feed L clutch*1
>>PF3 Clutch	Paper feeder middle feed H clutch*2
>>PF4 Clutch	Paper feeder lower feed H clutch*2
>>PF5 Clutch	Right deck feed clutch*3
>>FEED3(H) Clutch	Paper feeder conveying H clutch*3
>>FEED3(L) Clutch	Paper feeder conveying L clutch*3
>>FEED4 Clutch	Paper feeder conveying H clutch*3
>>FEED5 Clutch	Left deck feed clutch*3
>>Duplex Clutch	Duplex feed clutch*4

*1: Optional paper feeder PF-640, *2: Optional paper feeder PF-645,
*3: Optional paper feeder PF-647,
*4: Optional duplex unit (standard equipment for 120 V (U.S.A.) specifications)

4. Press the [ENTER] key. "Execute" will be displayed and operation will start.

```
>>RES Clutch
[032.1] Execute
```

5. To stop operation, press the [ENTER] key or the [CANCEL] key.

U No.	Description

U033	**Checking the operation of the solenoids**
	Description
	Applies current toe each solenoid in order to check its ON status.
	Purpose
	To check the operation of each solenoid.
	Method
	1. Enter the maintenance mode and press the [△/▽] key to display "U033".
	`>Check Solenoid>`
	`[U033]`
	2. Press the [▷] key to display the submenu screen.
	3. Press the [△/▽] key to select the solenoid to operate.

Submenu display	Solenoid
>>Bp Solenoid	Lift plate up/down solenoid
>>FD/FU Solenoid	Face-up exit solenoid
>>DU/FU Solenoid	Duplex exit solenoid*
>>Web Solenoid	Operation cannot be performed.
>>DU Solenoid	Operation cannot be performed.
>>Eject Solenoid	Operation cannot be performed.
>>Main Solenoid	Power switch (AC power shutdown)
>>DU HT Solenoid	Duplex tapping solenoid*
>>DU fw Solenoid	Duplex forwarding solenoid*

* : Optional duplex unit
(standard equipment for 120 V (U.S.A.) specifications)

4. Press the [ENTER] key. "Execute" will be displayed and operation will start.

```
>>Bp Solenoid
[033.1] Execute
```

5. To stop operation, press the [ENTER] key or the [CANCEL] key.

<table>
<tr><th>U No.</th><th>Description</th></tr>
<tr><td>U034</td><td>
Adjusting the print start timing
Method
1. Enter the maintenance mode and press the [△/▽] key to display "U034".
<pre>>Adjust Paper >
[U034]</pre>
2. Press the [▷] key to display the submenu screen.
3. Press the [△/▽] key to select the item for which the preset value is to be changed.
<table>
<tr><th>Submenu display</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>>>Res adj4C</td><td>Registration setting (Color printing)*</td><td>-50 to 50</td><td>0</td></tr>
<tr><td>>>Res adjBK</td><td>Registration setting (Monochrome printing)*</td><td>-50 to 50</td><td>0</td></tr>
<tr><td>>>Res adj_bp</td><td>MP tray setting*, Full speed</td><td>-50 to 50</td><td>-5</td></tr>
<tr><td>>>Res adj_ohp</td><td>Transparency paper setting*</td><td>-50 to 50</td><td>0</td></tr>
<tr><td>>>Res adj_thick</td><td>Thin paper setting*</td><td>-50 to 50</td><td>-5</td></tr>
<tr><td>>>Res adj2</td><td>Optional duplex unit setting*
(Standard equipment for 120 V (U.S.A.) specifications)</td><td>-50 to 50</td><td>-2</td></tr>
<tr><td>>>Res adj_h</td><td>Cassette setting, half speed</td><td>-50 to 50</td><td>0</td></tr>
<tr><td>>>ACsift_adj_bk</td><td>VSYNC signal rise timing (black)</td><td>-70 to 70</td><td>-24</td></tr>
<tr><td>>>ACsift_adj_c</td><td>VSYNC signal rise timing (Cyan)</td><td>-70 to 70</td><td>-24</td></tr>
<tr><td>>>ACsift_adj_m</td><td>VSYNC signal rise timing (Magenta)</td><td>-70 to 70</td><td>-24</td></tr>
<tr><td>>>ACsift_adj_y</td><td>VSYNC signal rise timing (Yellow)</td><td>-70 to 70</td><td>-24</td></tr>
<tr><td>>>Feed_of_tim</td><td>Paper feeding OFF timing</td><td>-500 to 500</td><td>140</td></tr>
</table>
*: Leading edge timing
4. Press the [ENTER] key. "_" will blink.
<pre>>>Res adj4C
[034.1]   ###</pre>
5. Press the [◁/▷] key to move "_" to the digit position at which the value is to be changed and press the [△/▽] or key to change the preset value.
6. Press the [ENTER] key. The value is set.
</td></tr>
<tr><td>U035</td><td>
Setting folio size
Description
Sets the type of paper when using Folio or OficioII.
Purpose
To prevent image loss that occurs depending on the difference of paper type.
Method
1. Enter the maintenance mode and press the [△/▽] key to display "U035".
2. Press the [ENTER] key. "?" will be displayed.
3. Press the [△/▽] key to select "Folio" or "OficioII".
<pre>>Set Folio Size
[U035] ?Folio</pre>
4. Press the [ENTER] key. The setting is set.
</td></tr>
</table>

U No.	Description

U037	**Checking the operation of the fan motors**
	Description
	Drives the fan motors.
	Purpose
	To check the operation of the fan motors.
	Method
	1. Enter the maintenance mode and press the [△/▽] key to display "U037".
	`>Check Fan Mt >`
	`[U037]`
	2. Press the [▷] key to display the submenu screen.
	3. Press the [△/▽] key to select the fan motor (Speed) to operate.

Submenu display	Fan motor
>>KINAI(Full)	Main charger fan motor (Full speed)
>>KINAI(Half)	Main charger fan motor (Half speed)
>>fuser(Full)	Main cooling fan motor (Full speed)
>>fuser(Half)	Main cooling fan motor (Half speed)
>>DENGEN(Full)	Power supply PWB cooling fan motor (Full speed)
>>DENGEN(Half)	Power supply PWB cooling fan motor (Half speed)
>>control(Full)	Main controller PWB cooling fan motor (Full speed)
>>control(Half)	Main controller PWB cooling fan motor (Half speed)

4. Press the [ENTER] key. "Execute" will be displayed and operation will start.

```
>>KINAI(Full)
[037.1.1] Execute
```

5. To stop operation, press the [ENTER] key or the [CANCEL] key.

U No.	Description

U051	**Adjusting the amount of slack in the paper**
	Description
	Changes the preset value of the amount of slack of registration position.
	Purpose
	To adjust when the leading edge of the image is not printed or fluctuates irregularly or paper is bent in Z shape.
	Method
	1. Enter the maintenance mode and press the [△/▽] key to display "U051".
	`>Set of Paper >`
	`[U051] Loop`
	2. Press the [▷] key to display the submenu screen.
	3. Press the [△/▽] key to select the item for which the preset value is to be changed.

Submenu display	Description	Setting range	Initial setting
>>Loop_adj_dk	Cassette feeding (Full speed)	-50 to 50	0
>>Loop_adj_dk_h	Cassette feeding (Half speed)	-50 to 50	0
>>Loop_adj_bp	MP tray feeding (Full speed)	-100 to 100	0
>>Loop_adj_bp_du	MP tray feeding (Half speed)	-100 to 100	0
>>Loop_adj_adu	Optional duplex unit* refeeding (Full speed)	-50 to 50	0
>>Loop_adj_adu	Optional duplex unit* refeeding (Half speed)	-50 to 50	0

*Duplex unit is standard equipment for 120 V (U.S.A.) specifications.

4. Press the [ENTER] key. "_" will blink.

```
>>Loop_adj_dk
[051.1]   ###
```

5. Press the [◁/▷] key to move "_" to the digit position at which the value is to be changed and press the [△/▽] or key to change the preset value.
6. Press the [ENTER] key. The value is set.

U No.	Description

U052	**Adjusting the duplex unit**
	Description
	Adjusts the side registration of the duplex unit. In addition, drives duplex side registration motor.
	Purpose
	To check the operation of duplex side registration motor.
	Method
	1. Enter the maintenance mode and press the [△/▽] key to display "U052".
	`>DU Adjust >`
	`[U052]`
	2. Press the [▷] key to display the submenu screen.
	3. Press the [△/▽] key to select ">>DU Side_Adj" or ">>DU Motor ctl".

Submenu display	Description	Setting range	Initial setting
>>DU Side_Adj	Adjusting the duplex side registration position	-20 to 20	0
>>DU Motor ctl	Checking the operation of duplex side registration motor		

Selecting the ">>DU Side_Adj"

1. Press the [ENTER] key. "_" will blink.

```
>>DU Side_Adj
[052.1]  ##
```

2. Press the [◁/▷] key to move "_" to the digit position at which the value is to be changed and press the [△/▽] or key to change the preset value.
3. Press the [ENTER] key. The value is set.

Selecting the ">>DU Motor ctl"

1. Press the [ENTER] key. "Execute" will be displayed and duplex side registration motor operation will start.

```
>>DU Motor ctl
[052.2]  Execute
```

2. To stop operation, press the [ENTER] key or the [CANCEL] key.

*Duplex unit is optional equipment except for 120 V (U.S.A.) specifications.

U No.	Description

U053	**Setting the adjustment of the motor speed**
	Description
	Performs fine adjustment of the speeds of the motors.
	Purpose
	Used to adjust the speed of the respective motors when the magnification is not correct.
	Method
	1. Enter the maintenance mode and press the [△/▽] key to display "U053".
	`>Adjust Motor >`
	`[U053] Speed`
	2. Press the [▷] key to display the submenu screen.
	3. Press the [△/▽] key to select an item for which the preset value is to be changed.

Submenu display	Description	Setting range	Initial setting
>>BeltMot_adj	Transfer motor (Full speed)	-500 to 500	-115
>>Drm_Mot_adj_bk	Drum motor K (Full speed)	-999 to 999	0
>>Drm_Mot_adj_c	Drum motor C (Full speed)	-999 to 999	0
>>Drm_Mot_adj_m	Drum motor M (Full speed)	-999 to 999	0
>>Drm_Mot_adj_y	Drum motor Y (Full speed)	-999 to 999	0
>>FeduMot_adj	Paper feed motor (Full speed)	-999 to 999	-60
>>FixMot_adj	Fuser motor (Full speed)	-500 to 500	125
>>FedMot_adj_bk	Paper feed motor, Monochrome printing	-500 to 500	-10
>>FedMot_adjh1	Paper feed motor, Thick paper, Transparency, Monochrome printing, Paper width ≤ 160 mm	-500 to 500	0
>>FedMot_adjh2	Paper feed motor, Thick paper, Transparency, Monochrome printing, 160 mm < Paper width < 220 mm	-500 to 500	0
>>FedMot_adjh3	Paper feed motor, Thick paper, Transparency, Monochrome printing, Paper width ≥ 220 mm	-500 to 500	0
>>BeltMot_adjh	Transfer motor (Half speed)	-500 to 500	4
>>BeltMot_adjohp	Transfer motor (Half speed), Transparency paper	-500 to 500	12
>>FetMot_adj_dup	Paper feed motor, Color printing, Second side	-500 to 500	0
>>FetMot_adj_bk_dup	Paper feed motor, Monochrome printing, Second side	-500 to 500	-10
>>DrumMot_hosh_pos	Drum motor K/C/M/Y (Half speed), Post card	-500 to 500	50
>>DrumMot_hosh_ohp	Drum motor K/C/M/Y (Half speed), Transparency sheet	-500 to 500	-80
>>DrumMot_hosh_env	Drum motor K/C/M/Y (Half speed), Envelope	-500 to 500	20
>>DrumMot_hoshelsy	Drum motor K/C/M/Y (Half speed), Others	-500 to 500	0
>>FedIuMot_adj_byp	Paper feed motor, full speed, MP tray	-999 to 999	-60
>>FedIuMot_adj_dec	Paper feed motor, full speed, optional cassette	-999 to 999	-60
>>FedIuMot_adj_dec3	Paper feed motor, full speed, optional cassette 3	-999 to 999	-60
>>FedIuMot_adj_dec4	Paper feed motor, full speed, optional cassette 4	-999 to 999	-60
>>FedIuMot_adj_dec5	Paper feed motor, full speed, optional cassette 5	-999 to 999	-60

<table>
<tr><th>U No.</th><th>Description</th></tr>
<tr><td>U053
(continue)</td><td>
4. Press the [ENTER] key. "_" will blink.
<pre>>>BeltMot_adj
[053.1] ###</pre>
5. Press the [◁/▷] key to move "_" to the digit position at which the value is to be changed and press the [△/▽] or key to change the preset value.
6. Press the [ENTER] key. The value is set.
</td></tr>
<tr><td>U100</td><td>
Adjusting the drum surface potential
Description
Changes the compensation value of drum surface potential for each developing color.
Purpose
To change the setting value to adjust the image if an image failure (dark or Light density, background blur, carrier sticking etc.) occurs.
Method
1. Enter the maintenance mode and press the [△/▽] key to display "U100".
<pre>>Adjust GRD   >
[U100] Voltage</pre>
2. Press the [▷] key to display the submenu screen.
3. Press the [△/▽] key to select an item for which the preset value is to be changed.
<table>
<tr><th>Submenu display</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>>>GRD_base_bk</td><td>Drum surface potential compensation value for black developing (Full speed)</td><td>-50 to 50</td><td>0</td></tr>
<tr><td>>>GRD_base_c</td><td>Drum surface potential compensation value for cyan developing (Full speed)</td><td>-50 to 50</td><td>0</td></tr>
<tr><td>>>GRD_base_m</td><td>Drum surface potential compensation value for magenta developing (Full speed)</td><td>-50 to 50</td><td>0</td></tr>
<tr><td>>>GRD_base_y</td><td>Drum surface potential compensation value for yellow developing (Full speed)</td><td>-50 to 50</td><td>0</td></tr>
<tr><td>>>GRD_base_bk_1</td><td>Drum surface potential compensation value for black developing (Half speed)</td><td>-50 to 50</td><td>0</td></tr>
<tr><td>>>GRD_base_c_1</td><td>Drum surface potential compensation value for cyan developing (Half speed)</td><td>-50 to 50</td><td>0</td></tr>
<tr><td>>>GRD_base_m_1</td><td>Drum surface potential compensation value for magenta developing (Half speed)</td><td>-50 to 50</td><td>0</td></tr>
<tr><td>>>GRD_base_y_1</td><td>Drum surface potential compensation value for yellow developing (Half speed)</td><td>-50 to 50</td><td>0</td></tr>
</table>
4. Press the [ENTER] key. "_" will blink.
<pre>>>GRD_base_bk
[100.1]   ###</pre>
5. Press the [◁/▷] key to move "_" to the digit position at which the value is to be changed and press the [△/▽] or key to change the preset value.
6. Press the ENTER] key. The value is set. To keep the preset value, press the [CANCEL] key.
</td></tr>
</table>

U No.	Description

U101	**Setting the voltage for the transfer**
	Description
	Sets the voltage for the transfer at every paper type.
	Purpose
	To change the setting when any density problem, such as too dark or light, occur.
	Method
	1. Enter the maintenance mode and press the [△/▽] key to display "U101".
	`>Adjust High >`
	`[U101] Voltage`
	2. Press the [▷] key to display the submenu screen.
	3. Press the [△/▽] key to select an item for which the preset value is to be changed.

Submenu display	Description	Setting range	Initial setting
>>Tc_chk_nffl2	Plain paper, Paper width ≤ 160 mm, First side	0 to 255	180
>>Tc_chk_nffm2	Plain paper, 160 mm < Paper width < 220 mm, First side	0 to 255	175
>>Tc_chk_nffh2	Plain paper, 220 mm ≤ Paper width, First side	0 to 255	165
>>Tc_chk_nfsl 2	Plain paper, Paper width ≤ 160 mm, Second side	0 to 255	180
>>Tc_chk_nfsm2	Plain paper, 160 mm < Paper width < 220 mm, Second side	0 to 255	160
>>Tc_chk_nfsh2	Plain paper, 220 mm ≤ Paper width, Second side	0 to 255	140
>>Tc_chk_nhfl	Gross mode, Plain paper, Paper width ≤ 160 mm, First side	0 to 255	140
>>Tc_chk_nhfm	Gross mode, 160 mm < Paper width < 220 mm, First side	0 to 255	130
>>Tc_chk_nhfh	Gross mode, 220 mm ≤ Paper width, First side	0 to 255	115
>>Tc_chk_atl	Thick paper, Paper width ≤ 160 mm	0 to 255	140
>>Tc_chk_atm	Thick paper, 160 mm < Paper width < 220 mm	0 to 255	130
>>Tc_chk_ath	Thick paper, 220 mm ≤ Paper width	0 to 255	110
>>Tc_chk_bw	Calibration	0 to 255	155
>>Tc_chk_m	Auxiliary table, Magenta (Color printing)	-127 to 127	0
>>Tc_chk_c	Auxiliary table, Cyan (Color printing)	-127 to 127	-60
>>Tc_chk_y	Auxiliary table, Yellow (Color printing)	-127 to 127	5
>>Tc_chk_cbk	Auxiliary table, Black (Color printing)	-127 to 127	-45
>>Tc_chk_mbk	Auxiliary table, Black (Monochrome printing)	-127 to 127	-60
>>Tc_chk_cln_m	Belt cleaning, Magenta (Color printing)	0 to 255	25
>>Tc_chk_cln_c	Belt cleaning, Cyan (Color printing)	0 to 255	57
>>Tc_chk_cln_y	Belt cleaning, Yellow (Color printing)	0 to 255	25
>>Tc_chk_cln_bk	Belt cleaning, Black (Color printing)	0 to 255	57

U No.	Description

U101 (continue)

Submenu display	Description	Setting range	Initial setting
>>Tc_OnTime_stn	Transfer offset time	500 to 819	650
>>Tc_chk_stn	Transfer offset amount	0 to 500	0
>>Eng_act2dis.m.Tci	Paper interval ON/OFF	0, 1	0
>>Tc_chk_ohl_m	Transparency, Paper width ≤ 220 mm, Magenta (Color printing)	0 to 255	115
>>Tc_chk_ohl_c	Transparency, Paper width ≤ 220 mm, Cyan (Color printing)	0 to 255	90
>>Tc_chk_ohl_y	Transparency, Paper width ≤ 220 mm, Yellow (Color printing)	0 to 255	130
>>Tc_chk_ohl_cbk	Transparency, Paper width ≤ 220 mm, Black (Color printing)	0 to 255	125
>>Tc_chk_ohl_mbk	Transparency, Paper width ≤ 220 mm, Black (Monochrome printing)	0 to 255	60
>>Tc_chk_ohm_m	Transparency, 220 mm ≤ Paper width, Magenta (Color printing)	0 to 255	115
>>Tc_chk_ohm_c	Transparency, 220 mm ≤ Paper width, Cyan (Color printing)	0 to 255	60
>>Tc_chk_ohm_y	Transparency, 220 mm ≤ Paper width, Yellow (Color printing)	0 to 255	120
>>Tc_chk_ohm_cbk	Transparency, 220 mm ≤ Paper width, Black (Color printing)	0 to 255	80
>>Tc_chk_ohm_mbk	Transparency, 220 mm ≤ Paper width, Black (Monochrome printing)	0 to 255	55
>>Tc_chk_nhsl	Gross mode, Plain paper, Paper width ≤ 160 mm, Second side	0 to 255	150
>>Tc_chk_nhsm	Gross mode, 160 mm < Paper width < 220 mm, Second side	0 to 255	135
>>Tc_chk_nhsh	Gross mode, 220 mm ≤ Paper width, Second side	0 to 255	105
>>Tc_chk_int_m	Paper interval, Magenta (Color printing)	0 to 255	25
>>Tc_chk_int_c	Paper interval, Cyan (Color printing)	0 to 255	57
>>Tc_chk_int_y	Paper interval, Yellow (Color printing)	0 to 255	25
>>Tc_chk_int_bk	Paper interval, Black (Color printing)	0 to 255	57

4. Press the [ENTER] key. "_" will blink.

```
>>Tc_chk_nffl2
[101.1]    ###
```

5. Press the [◁/▷] key to move "_" to the digit position at which the value is to be changed and press the [△/▽] or key to change the preset value.
6. Press the ENTER] key. The value is set. To keep the preset value, press the [CANCEL] key.

U No.	Description

U116	**Adjusting adhesion output**
	Description
	Sets the suction voltage for each paper type.
	Purpose
	Basically, the setting need not be changed. If any problem such as folds of leading edge of paper or dirt occurs, change the setting.
	Method
	1. Enter the maintenance mode and press the [△/▽] key to display "U116".
	`>Adjust Fixing >`
	`[U116] Voltage`
	2. Press the [▷] key to display the submenu screen.
	3. Press the [△/▽] key to select an item for which the preset value is to be changed.

Submenu display	Description	Setting range	Initial setting
>>Atr_chk_cnff	Color printing, Plain paper, Full speed, First side	0 to 255	128
>>Atr_chk_cnhf	Color printing, Plain paper, Half speed, First side	0 to 255	128
>>Atr_chk_cnfs	Color printing, Plain paper, Full speed, Second side	0 to 255	215
>>Atr_chk_mnff	Monochrome printing, Plain paper, Full speed, First side	0 to 255	200
>>Atr_chk_mnhf	Monochrome printing, Plain paper, Half speed, First side	0 to 255	200
>>Atr_chk_mnfs	Monochrome printing, Plain paper, Full speed, Second side	0 to 255	215
>>Atr_chk_cahs	Color printing, Thick paper, Half speed, Second side	0 to 255	128
>>Atr_chk_mahf	Monochrome printing, Thick paper, Half speed, First side	0 to 255	200
>>Atr_chk_cohf	Color printing, Transparency sheet, Half speed, First side	0 to 255	128
>>Atr_chk_mohf	Monochrome printing, Transparency sheet, Half speed, First side	0 to 255	215
>>Atr_chk_np	Calibration	0 to 255	107
>>Atr_chk_lt	Paper width ≤ 160 mm	-127 to 127	0
>>Atr_chk_mt	160 mm < Paper width < 220 mm	-127 to 127	0
>>Atr_chk_ht	220 mm ≤ Paper width	-127 to 127	0
>>Atr_OnTime_stn	Paper leading edge suction timing	0 to 525	150
>>Atr_chk_stnc	Color printing, Paper leading edge suction voltage	-127 to 127	72
>>Atr_chk_stnm	Monochrome printing, Paper leading edge suction voltage	-127 to 127	0
>>Atr_adj_on	Color printing, Suction voltage ON timing to suction roller, First side	0 to 60	20

<table>
<tr><th>U No.</th><th>Description</th></tr>
<tr><td>U116
(continue)</td><td>
<table>
<tr><th>Submenu display</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>>>Atr_adj_off</td><td>Suction voltage OFF timing to suction roller</td><td>0 to 60</td><td>25</td></tr>
<tr><td>>>Atr_inpap</td><td>Paper interval, Full speed</td><td>0 to 255</td><td>107</td></tr>
<tr><td>>>Atr_inpap_half</td><td>Paper interval, Half speed</td><td>0 to 255</td><td>107</td></tr>
<tr><td>>>Atr_chk_cln_a</td><td>Transfer belt cleaning setting A</td><td>0 to 255</td><td>107</td></tr>
<tr><td>>>Atr_chk_cln_b</td><td>Transfer belt cleaning setting B</td><td>0 to 255</td><td>146</td></tr>
<tr><td>>>Atr_chk_cnhs</td><td>Color printing, Plain paper, Half speed, Second side</td><td>0 to 255</td><td>215</td></tr>
<tr><td>>>Atr_chk_mnhs</td><td>Monochrome printing, Plain paper, Half speed, Second side</td><td>0 to 255</td><td>215</td></tr>
<tr><td>>>Atr_adj_on2</td><td>Color printing, Suction voltage ON timing to suction roller, Second side
Monochrome printing, Suction voltage ON timing to suction roller</td><td>0 to 60</td><td>20</td></tr>
<tr><td>>>Atr_adj_on3</td><td>Setting cannot be performed.</td><td>-</td><td>-</td></tr>
</table>
4. Press the [ENTER] key. "_" will blink.
<pre>>>Atr_chk_cnff
[116.1]   ###</pre>
5. Press the [◁/▷] key to move "_" to the digit position at which the value is to be changed and press the [△/▽] or key to change the preset value.
6. Press the ENTER] key. The value is set. To keep the preset value, press the [CANCEL] key.
</td></tr>
<tr><td>U127</td><td>
Checking/cleaning the transfer belt count
Description
Displays the counts of the transfer belt counter for checking or clearing.
Purpose
To check the count after replacement of the transfer belt unit.
Method
1. Enter the maintenance mode and press the [△/▽] key to display "U127".
<pre>>Tc Belt Counte >
[U127]</pre>
2. Press the [▷] key to display the submenu screen.
3. Press the [ENTER] key. "_" will blink.
<pre>>>TcBelt_cnt
[127.1] ######</pre>
4. Press the [◁/▷] key to move "_" to the digit position at which the value is to be changed and press the [△/▽] or key to change the preset value.
5. Press the [ENTER] key. The value is set. To keep the preset value, press the [CANCEL] key.
</td></tr>
</table>

U No.	Description

U128	**Setting transfer high-voltage timing**
	Description
	Adjusts the ON/OFF timing of transfer high-voltage output for each paper type and each mode.
	Purpose
	Basically, the setting need not be changed. If any problem such as faulty images or dirt on the back surface occurs, change the setting.
	Method
	1. Enter the maintenance mode and press the [△/▽] key to display "U128".
	`>Adjust Transf >`
	`[U128]`
	2. Press the [▷] key to display the submenu screen.
	3. Press the [△/▽] key to select an item for which the preset value is to be changed.

Submenu display	Description	Setting range	Initial setting
>>Tc_OnTime_col	Transfer ON timing, Color printing	-125 to 125	0
>>Tc_OnTime_mono	Transfer ON timing, Monochrome printing	-125 to 125	0
>>Tc_OnTime_v_col	Transfer ON timing, Color printing, Thin paper	-125 to 125	0
>>Tc_OnTime_V_mono	Transfer ON timing, Monochrome printing, Thin paper	-125 to 125	0
>>Tc_OffTime_col	Transfer OFF timing, Color printing	-125 to 50	0
>>Tc_OffTime_mono	Transfer OFF timing, Monochrome printing	-125 to 50	0
>>Cln_col_th	Number of sheets for moving to belt cleaning, Color printing	0 to 500	125
>>Cln_bk_th_large	Number of sheets for moving to belt cleaning, Monochrome printing, 279 mm ≤ Paper width	0 to 500	125
>>Cln_bk_th_small	Number of sheets for moving to belt cleaning, Monochrome printing, 279 mm ≥ Paper width	0 to 500	125

4. Press the [ENTER] key. "_" will blink.

```
>>Tc_OnTime_col
[128.1]    ###
```

5. Press the [◁/▷] key to move "_" to the digit position at which the value is to be changed and press the [△/▽] or key to change the preset value.
6. Press the [ENTER] key. The value is set. To keep the preset value, press the [CANCEL] key.

<table>
<tr><th>U No.</th><th>Description</th></tr>
<tr><td>U131</td><td>
Adjusting toner sensors control voltage
Description
Adjusts the toner sensor control voltage.
Method
1. Enter the maintenance mode and press the [△/▽] key to display "U131".
<pre>>Adjust TonerCo>
[U131]</pre>
2. Press the [▷] key to display the submenu screen.
3. Press the [△/▽] key to select an item for which the preset value is to be changed.
<table>
<tr><th>Submenu display</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>>>TN_base_bk</td><td>Toner sensor K</td><td>0 to 255</td><td>130</td></tr>
<tr><td>>>TN_base_c</td><td>Toner sensor C</td><td>0 to 255</td><td>140</td></tr>
<tr><td>>>TN_base_m</td><td>Toner sensor M</td><td>0 to 255</td><td>140</td></tr>
<tr><td>>>TN_base_y</td><td>Toner sensor Y</td><td>0 to 255</td><td>140</td></tr>
</table>
4. Press the [ENTER] key. "_" will blink.
<pre>>>TN_base_bk
[131.1]   ##_</pre>
5. Press the [◁/▷] key to move "_" to the digit position at which the value is to be changed and press the [△/▽] or key to change the preset value.
6. Press the [ENTER] key. The value is set. To keep the preset value, press the [CANCEL] key.
</td></tr>
<tr><td>U132</td><td>
Replenishing toner forcibly
Description
Replenishes toner forcibly until the toner sensor output value reaches the toner feed start level.
Purpose
Used when the toner empty is detected frequently.
Method
1. Enter the maintenance mode and press the [△/▽] key to display "U132".
<pre>>Toner supplied   >
[U132]</pre>
2. Press the [▷] key. The current setting are displayed.
<pre>>>K   C   M   Y
###</pre>
3. To stop operation, press the [◁] key.
</td></tr>
<tr><td>U135</td><td>
Checking toner motors operation
Description
Drives toner motors.
Purpose
To check the operation of toner motor K, C, M, and Y.
Method
1. Enter the maintenance mode and press the [△/▽] key to display "U135".
<pre>>Toner Mt check
[U135]</pre>
2. Press the [ENTER] key. "Execute" will be displayed and operation will start.
<pre>>Toner Mt
[U135] Execute</pre>
3. To stop operation, press the [ENTER] key or the [CANCEL] key.
</td></tr>
</table>

U No.	Description

U140	**Setting the developing bias output**
	Description
	Sets the developing bias output.
	Purpose
	To change the setting when any density problems, such as too dark or light, occur.
	Method
	1. Enter the maintenance mode and press the [△/▽] key to display "U140".
	`>Adjust MDB >`
	`[U140]`
	2. Press the [▷] key to display the submenu screen.
	3. Press the [△/▽] key to select an item for which the preset value is to be changed.

Submenu display	Description	Setting range	Initial setting
>>MDB_base_bk	Developing bias (black), Full speed	0 to 255	191
>>MDB_base_c	Developing bias (Cyan), Full speed	0 to 255	191
>>MDB_base_m	Developing bias (Magenta), Full speed	0 to 255	191
>>MDB_base_y	Developing bias (Yellow), Full speed	0 to 255	191
>>MDB_base_bk_l	Developing bias (black), Half speed	0 to 255	191
>>MDB_base_c_l	Developing bias (Cyan), Half speed	0 to 255	191
>>MDB_base_m_l	Developing bias (Magenta), Half speed	0 to 255	191
>>MDB_base_y_l	Developing bias (Yellow), Half speed	0 to 255	191

4. Press the [ENTER] key. "_" will blink.

```
>>MDB_base_bk
[140.1]   ###
```

5. Press the [◁/▷] key to move "_" to the digit position at which the value is to be changed and press the [△/▽] or key to change the preset value.
6. Press the [ENTER] key. The value is set. To keep the preset value, press the [CANCEL] key.

U No.	Description

U147	**Setting for toner applying operation**
	Description
	Sets the quantity and time for consuming charged toner in the developer unit.
	Purpose
	To change the settings of the operation count for transition and standard print coverage ratio according to the situation of use of the user.
	Method
	1. Enter the maintenance mode and press the [△/▽] key to display "U147".
	`>Toner band >`
	`[U147]`
	2. Press the [▷] key to display the submenu screen.
	3. Press the [△/▽] key to select an item for which the preset value is to be changed.

Submenu display	Description	Setting range	Initial setting
>>Eng_act2dis.m.ref 3	0: Enable, 1: Disable	0, 1	0
>>Ton_band_tim	Toner applying time, Normal, Unit: ms	0 to 999	100
>>Ton_band_tim2	Toner applying time, Neglect, Unit: ms	0 to 999	100
>>Ton_band_intv	Toner applying interval time, Unit: s	0 to 999	250
>>Blade_th	Toner applying on the blade operation count	0 to 255	10
>>MDB_blade	Developing bias value at the time of applying toner operation on the blade at the end of printing	0 to 255	85
>>T7_intv	Toner applying operation time, Unit: ms	1 to 20	4
>>Eng_act2dis.mT7_ pre	Permission/prohibition of applying toner at the time of forced belt cleaning during printing, 1: Prohibition	0, 1	1
>>Eng_act2dis.mT7_ pwon	Permission/prohibition of applying toner at the time of forced belt cleaning at power on, 1: Prohibition	0, 1	1
>>T7drv_intv	Toner applying operation interrupt time during printing*, Unit: min	0 to 20	4
>>T7drv_intv	Toner applying operation interrupt time during printing*, Unit: min	0 to 20	4
>>T7drv_intv1	Operation count for applying toner during printing (lower than 36 °C)	0 to 200	85
>>T7drv_intv2	Operation count for applying toner during printing (36 °C to 39 °C)	10 to 200	85
>>T7drv_intv3	Operation count for applying toner during printing (39 °C to 43 °C)	10 to 200	85
>>T7drv_intv4	Operation count for applying toner during printing (43 °C or higher)	10 to 200	74
>>T7_intv1	Operation count for applying toner at the end of printing (lower than 36 °C)	0 to 200	80
>>T7_intv2	Operation count for applying toner at the end of printing (36 °C to 39 °C)	10 to 200	80
>>T7_intv3	Operation count for applying toner at the end of printing (39 °C to 43 °C)	10 to 200	80

*When each value is set, setting value is set simultaneously.

<table>
<tr><th>U No.</th><th>Description</th></tr>
<tr><td>U147
(continue)</td><td>
<table>
<tr><th>Submenu display</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>>>T7_intv4</td><td>Operation count for applying toner at the end of printing (43 °C or higher)</td><td>10 to 200</td><td>69</td></tr>
<tr><td>>>T7drv_per1</td><td>Standard print coverage ratio during printing (lower than 36 °C)</td><td>50 to 999</td><td>200</td></tr>
<tr><td>>>T7drv_per2</td><td>Standard print coverage ratio during printing (36 °C to 39 °C)</td><td>50 to 999</td><td>266</td></tr>
<tr><td>>>T7drv_per3</td><td>Standard print coverage ratio during printing (39 °C to 43 °C)</td><td>50 to 999</td><td>400</td></tr>
<tr><td>>>T7drv_per4</td><td>Standard print coverage ratio during printing (43 °C or higher)</td><td>50 to 999</td><td>537</td></tr>
<tr><td>>>T7_per1</td><td>Standard print coverage ratio at the end of printing (lower than 36 °C)</td><td>50 to 999</td><td>200</td></tr>
<tr><td>>>T7_per2</td><td>Standard print coverage ratio at the end of printing (36 °C to 39 °C)</td><td>50 to 999</td><td>266</td></tr>
<tr><td>>>T7_per3</td><td>Standard print coverage ratio at the end of printing (39 °C to 43 °C)</td><td>50 to 999</td><td>400</td></tr>
<tr><td>>>T7_per4</td><td>Standard print coverage ratio at the end of printing (43 °C or higher)</td><td>50 to 999</td><td>537</td></tr>
</table>
4. Press the [ENTER] key. "_" will blink.
<pre>>>Eng_act2dis.m.
ref3[147.1]   ###</pre>
5. Press the [◁/▷] key to move "_" to the digit position at which the value is to be changed and press the [△/▽] or key to change the preset value.
6. Press the [ENTER] key. The value is set. To keep the preset value, press the [CANCEL] key.
</td></tr>
<tr><td>U155</td><td>
Displaying the toner sensor output
Description
Displays the toner sensor output value.
Purpose
To check the output value for each color when any image problems occur.
Method
1. Enter the maintenance mode and press the [△/▽] key to display "U155".
<pre>>Check TonerSen>
[U155]</pre>
2. Press the [▷] key. The current setting are displayed.
<pre>>>K   C   M   Y
###</pre>
3. To stop operation, press the [◁] key.
</td></tr>
<tr><td>U156</td><td>
Setting the toner replenishment level
Description
Sets the toner replenishment level for each color
Purpose
To change settings according to the original image.
Method
1. Enter the maintenance mode and press the [△/▽] key to display "U156".
<pre>>Adj Ton Level >
[U156]</pre>
</td></tr>
</table>

<table>
<tr><th>U No.</th><th>Description</th></tr>
<tr><td>U156
(continue)</td><td>
2. Press the [▷] key to display the submenu screen.
3. Press the [△/▽] key to select an item for which the preset value is to be changed.
<table>
<tr><th>Submenu display</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>>>Ton_bk_adl</td><td>Toner replenishment level (Black)</td><td>0 to 255</td><td>102</td></tr>
<tr><td>>>Ton_c_adl</td><td>Toner replenishment level (Cyan)</td><td>0 to 255</td><td>102</td></tr>
<tr><td>>>Ton_m_adl</td><td>Toner replenishment level (Magenta)</td><td>0 to 255</td><td>102</td></tr>
<tr><td>>>Ton_y_adl</td><td>Toner replenishment level (Yellow)</td><td>0 to 255</td><td>102</td></tr>
<tr><td>>>Te_onl_bk</td><td>Toner empty detecting level (Black)</td><td>0 to 255</td><td>24</td></tr>
<tr><td>>>Te_onl_c</td><td>Toner empty detecting level (Cyan)</td><td>0 to 255</td><td>24</td></tr>
<tr><td>>>Te_onl_m</td><td>Toner empty detecting level (Magenta)</td><td>0 to 255</td><td>24</td></tr>
<tr><td>>>Te_onl_y</td><td>Toner empty detecting level (Yellow)</td><td>0 to 255</td><td>24</td></tr>
<tr><td>>>set all Ton</td><td>Use for factory</td><td>-</td><td>-</td></tr>
</table>
4. Press the [ENTER] key. "_" will blink.
<pre>>>Ton_bk_adl
[156.1]   ###</pre>
5. Press the [◁/▷] key to move "_" to the digit position at which the value is to be changed and press the [△/▽] or key to change the preset value.
6. Press the [ENTER] key. The value is set. To keep the preset value, press the [CANCEL] key.
</td></tr>
<tr><td>U157</td><td>
Checking/cleaning the developing drive time
Description
Displays the developing drive time for checking, or cleaning a figure, which is used as a reference when correcting the toner control.
Purpose
To check the developing drive time after replacing the developer unit.
Method
1. Enter the maintenance mode and press the [△/▽] key to display "U157".
<pre>>Md drive time >
[U157]</pre>
2. Press the [▷] key to display the submenu screen.
3. Press the [△/▽] key to select an item for which the preset value is to be changed.
<table>
<tr><th>Submenu display</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>>>Md_drv_timBK</td><td>Developer driving time counter (Black)</td><td>0 to 999999</td><td>0</td></tr>
<tr><td>>>Md_drv_timC</td><td>Developer driving time counter (Cyan)</td><td>0 to 999999</td><td>0</td></tr>
<tr><td>>>Md_drv_timM</td><td>Developer driving time counter (Magenta)</td><td>0 to 999999</td><td>0</td></tr>
<tr><td>>>Md_drv_timY</td><td>Developer driving time count (Yellow)</td><td>0 to 999999</td><td>0</td></tr>
</table>
4. Press the [ENTER] key. "_" will blink.
<pre>>>Md_drv_timBK
[157.1]   ######</pre>
5. Press the [◁/▷] key to move "_" to the digit position at which the value is to be changed and press the [△/▽] or key to change the preset value.
6. Press the [ENTER] key. The value is set. To keep the preset value, press the [CANCEL] key.
</td></tr>
</table>

U No.	Description

U161	**Setting the fuser control temperature**
	Description
	Changes the fuser control temperature.
	Purpose
	Normally you do not need to change the settings. However, this item can be used to prevent curling or creasing of paper, or solve a fuser problem on thick paper.
	Method
	1. Enter the maintenance mode and press the [△/▽] key to display "U161".
	`>Adjust Fixing >`
	`[U161]  Heater`
	2. Press the [▷] key to display the submenu screen.
	3. Press the [△/▽] key to select an item for which the preset value is to be changed.

Submenu display	Description	Setting range	Initial setting
>>Fix_1stTemp	Primary stabilization, Fuser temperature upper limit, Unit: °C	0 to 255	100
>>Fix_1stTempS	Primary stabilization, Fuser temperature lower limit, Unit: °C	0 to 255	100
>>Fix_2ndTemp	Secondary stabilization, Fuser temperature upper limit, Unit: °C	0 to 255	140
>>Fix_2ndTempS	Secondary stabilization, Fuser temperature lower limit, Unit: °C	0 to 255	140
>>Fix_OnTemp	Standby, Fuser temperature upper limit, Unit: °C	0 to 255	140
>>Fix_OnTempS	Standby, Fuser temperature lower limit, Unit: °C	0 to 255	135
>>Fix_bond_tmp	Correction value for thick paper, Fuser temperature upper limit, Unit: °C	0 to 255	25
>>Fix_bond_tmpS	Correction value for thick paper, Fuser temperature lower limit, Unit: °C	0 to 255	30
>>Fix_ohp_tmp	Correction value for transparency paper, Fuser temperature upper limit, Unit: °C	0 to 255	25
>>Fix_ohp_tmpS	Correction value for transparency paper, Fuser temperature lower limit, Unit: °C	0 to 255	30

4. Press the [ENTER] key. "_" will blink.

```
>>Fix_1stTemp
[161.1]   ###
```

5. Press the [◁/▷] key to move "_" to the digit position at which the value is to be changed and press the [△/▽] or key to change the preset value.
6. Press the [ENTER] key. The value is set. To keep the preset value, press the [CANCEL] key.

<table>
<tr><th>U No.</th><th>Description</th></tr>
<tr><td>U208</td><td>
Setting paper feeder paper size
Description
Sets the paper size for cassettes 3 (right deck) and 4 (left deck) in the optional paper feeder PF-647.
Purpose
To change the setting according to the user.
Method
1. Enter the maintenance mode and press the [△/▽] key to display "U208".
<pre>>Set LCF Feeder>
[U208]</pre>
2. Press the [▷] key to display the submenu screen.
3. Press the [△/▽] key to select "LCF FeederR" or "LCF FeederL".
<table>
<tr><th>Submenu display</th><th>Description</th></tr>
<tr><td>>>Set LCF FeedR</td><td>Paper size setting for right paper deck</td></tr>
<tr><td>>>Set LCF FeedL</td><td>Paper size setting for left paper deck</td></tr>
</table>
4. Press the [ENTER] key. "?" will be displayed.
<pre>>>Set LCF FeedR
[U208] Size? A4</pre>
5. Press the [△/▽] key to select "A4", "B5",or "LT".
6. Press the [ENTER] key. The value is set. To keep the preset value, press the [CANCEL] key.
</td></tr>
<tr><td>U237</td><td>
Setting the maximum number of sheets for finisher stacking
Description
Sets the maximum number of A4 sheets to be stacked on the main tray of the optional document finisher.
Purpose
To change the setting when a stack malfunction has occurred.
Method
1. Enter the maintenance mode and press the [△/▽] key to display "U237".
<pre>>Finisher adjus >
[U237]</pre>
2. Press the [▷] key to display the submenu screen.
<table>
<tr><th>Submenu display</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>>>MM_FinMain_adj</td><td>0: 3000 sheets
1: 1500 sheets</td><td>0, 1</td><td>0</td></tr>
</table>
3. Press the [ENTER] key. "_" will blink.
<pre>>>MM_FinMain_adj
[237.1]   #</pre>
4. Press the [◁/▷] key to move "_" to the digit position at which the value is to be changed and press the [△/▽] or key to change the preset value.
5. Press the [ENTER] key. The value is set. To keep the preset value, press the [CANCEL] key.
</td></tr>
</table>

U No.	Description

U248	**Changing the paper ejection device setting**
	Description
	Adjusts the paper flexure level in the punch mode when the optional document finisher is installed in your printer. Also sets the limit for the number of punches that can be mode, displays or clears or changes the waste punch count, and adjusts the booklet stapling position in the stitching mode if the position is not proper.
	Purpose
	Adjust the paper stop timing in the punch mode, the booklet stapling position, and the center folding position for the printer with an finisher installed. Also, displays and clears the punch-hole scrap count.
	Method
	1. Enter the maintenance mode and press the [△/▽] key to display "U248".
	`>Punch timing >`
	`[U248]`
	2. Press the [▷] key to display the submenu screen.

Submenu display	Description	Setting range	Initial setting
>>Punch_adj1	Amount of slack (Punch mode), Full speed, Paper size B5, Unit: ms/step	-15 to 15	0
>>Punch_adj2	Amount of slack (Punch mode), Full speed, Paper size A4/11x8.5, Unit: ms/step	-15 to 15	0
>>Punch_adj3	Amount of slack (Punch mode), Full speed, Paper size B5R, Unit: ms/step	-15 to 15	0
>>Punch_adj4	Amount of slack (Punch mode), Full speed, Paper size A4R/8.5x11/Folio, Unit: ms/step	-15 to 15	0
>>Punch_adj5	Amount of slack (Punch mode), Full speed, Paper size B4/8.5x14, Unit: ms/step	-15 to 15	0
>>Punch_adj6	Amount of slack (Punch mode), Full speed, Paper size A3/11x17, Unit: ms/step	-15 to 15	0
>>Punch_adj1_r	Amount of slack (Punch mode), Full speed, Paper size B5, Unit: ms/step	-15 to 15	0
>>Punch_adj2_r	Amount of slack (Punch mode), Full speed, Paper size A4/11x8.5, Unit: ms/step	-15 to 15	0
>>Punch_adj3_r	Amount of slack (Punch mode), Half speed, Paper size B5R, Unit: ms/step	-15 to 15	0
>>Punch_adj4_r	Amount of slack (Punch mode), Half speed, Paper size A4R/8.5x11/Folio, Unit: ms/step	-15 to 15	0
>>Punch_adj5_r	Amount of slack (Punch mode), Half speed, Paper size B4/8.5x14, Unit: ms/step	-15 to 15	0
>>Punch_adj6_r	Amount of slack (Punch mode), Half speed, Paper size A3/11x17, Unit: ms/step	-15 to 15	0
>>P_kasu_cnt	Waste punch count (current number of punches)	0 to 999999	0
>>SadlStep_adj [0]	Adjustment of booklet stapling position for A4R/ 8.5x11 size	-10 to 10	0
>>SadlStep_adj [1]	B4R Adjustment of booklet stapling position for B4R size	-10 to 10	0
>>SadlStep_adj [2]	Adjustment of booklet stapling position for A3R/ Ledger size	-10 to 10	0

<table>
<tr><th>U No.</th><th>Description</th></tr>
<tr><td>U248</td><td>
3. Press the [ENTER] key. "_" will blink.
<pre>>>Punch_adj1
[248.1]   ##</pre>
<pre>>>P_kasu_cnt
[248.d] ######</pre>
4. Press the [◁/▷] key to move "_" to the digit position at which the value is to be changed and press the [△/▽] or key to change the preset value.
5. Press the [ENTER] key. The value is set. To keep the preset value, press the [CANCEL] key.
</td></tr>
<tr><td>U252</td><td>
Setting the destination
Description
Sets operation procedures and displayed screens according to the destination in which the machine is used.
Method
1. Enter the maintenance mode and press the [△/▽] key to display "U252".
<pre>>Sel.Destinatio>
[U252]</pre>
2. Press the [▷] key to display the submenu screen.
3. Press the [△/▽] key to select ">>Metric" or ">>Inches".
<table>
<tr><th>Submenu display</th><th>Description</th></tr>
<tr><td>>>Metric</td><td>Metric specifications</td></tr>
<tr><td>>>Inches</td><td>Inch specifications</td></tr>
</table>
4. Press the [ENTER] key. "?" will be displayed.
<pre>>>Metric ?
[252.1]</pre>
5. Press the [ENTER] key. The value is set. To keep the preset value, press the [CANCEL] key.
</td></tr>
<tr><td>U402</td><td>
Adjusting the margins for the image printing
Method
1. Enter the maintenance mode and press the [△/▽] key to display "U402".
<pre>>Adjust Margin >
[U402]</pre>
2. Press the [▷] key to display the submenu screen.
3. Press the [△/▽] key to select an item for which the preset value is to be changed.
<table>
<tr><th>Submenu display</th><th>Description</th><th>Setting range</th><th>Initial setting</th></tr>
<tr><td>>>Bcut_adj</td><td>Adjusting the leading edge margin
(HDC PG sheet output margin)</td><td>0 to 100</td><td>30</td></tr>
<tr><td>>>ACcut_adj_bk</td><td>Adjusting the AC side margin (Black)</td><td>0 to 100</td><td>25</td></tr>
<tr><td>>>ACcut_adj_c</td><td>Adjusting the AC side margin (Cyan)</td><td>0 to 100</td><td>25</td></tr>
<tr><td>>>ACcut_adj_m</td><td>Adjusting the AC side margin (Magenta)</td><td>0 to 100</td><td>25</td></tr>
<tr><td>>>ACcut_adj_y</td><td>Adjusting the AC side margin (Yellow)</td><td>0 to 100</td><td>25</td></tr>
<tr><td>>>V_off_adj</td><td>VSYNC signal OFF timing, First side</td><td>-100 to 100</td><td>0</td></tr>
<tr><td>>>V_off_adj_adu</td><td>VSYNC signal OFF timing, Second side</td><td>-100 to 100</td><td>0</td></tr>
</table>
4. Press the [ENTER] key. "_" will blink.
<pre>>>Bcut_adj
[402]   ###</pre>
5. Press the [◁/▷] key to move "_" to the digit position at which the value is to be changed and press the [△/▽] or key to change the preset value.
6. Press the [ENTER] key. The value is set. To keep the preset value, press the [CANCEL] key.
</td></tr>
</table>

U 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 half tone or the image density correction operation.
	Purpose
	Performed when the quality of reproduced halftones has dropped.
	Method
	Automatic calibration
	1. Enter the maintenance mode and press the [△/▽] key to display "U410".
	`>Auto Calib >`
	`[U402]`
	2. Press the [▷] key to display the submenu screen.
	Refer to adjusting for color deviation about submenu items other than the above.
	3. Press the [△/▽] key to select ">>Color reg".
	4. Press the [ENTER] key. "Execute" will be displayed and operation will start.
	`>>Color reg`
	`[U402.2] Execute`
	5. To stop operation, press the [CANCEL] key.
	
	Adjusting the color deviation
	Adjustment of the color deviation can be performed separately for each of the available paper feed sources: (1) the main cassette, (2) the MP tray and (3) the optional paper feeder's cassette. The following procedure uses the main cassette as an example in showing how to adjust the color deviation.
	Method
	1. Enter the maintenance mode and press the [△/▽] key to display "U410".
	2. Set A3/11" × 17" paper to the paper source (cassette, MP tray, option paper feeder's cassette) which performs adjusting for color deviation.
	3. Press the [△/▽] key to select submenu ">>Prt chart CASS".

Submenu display		Description	Setting range	Initial setting
	>>Prt chart CASS	Deviation checking PG sheets printing [Cassette]	-	-
(1)	>>1-a (CASS)	Adjustment data 1-a input [Cassette]	0 to 20	
	>>1-b (CASS)	Adjustment data 1-b input [Cassette]	0 to 20	
	>>1-c (CASS)	Adjustment data 1-c input [Cassette]	0 to 20	
	>>2-a (CASS)	Adjustment data 2-a input [Cassette]	0 to 20	
	>>2-b (CASS)	Adjustment data 2-b input [Cassette]	0 to 20	
	>>2-c (CASS)	Adjustment data 2-c input [Cassette]	0 to 20	
	>>set (CASS)	Adjustment data setting [Cassette]	0 to 20	

Submenu display	Description
>>Color concentr	Adjustment cannot be performed.
>>Color reg	Performs color registration correction. [Cassette]

U No.	Description

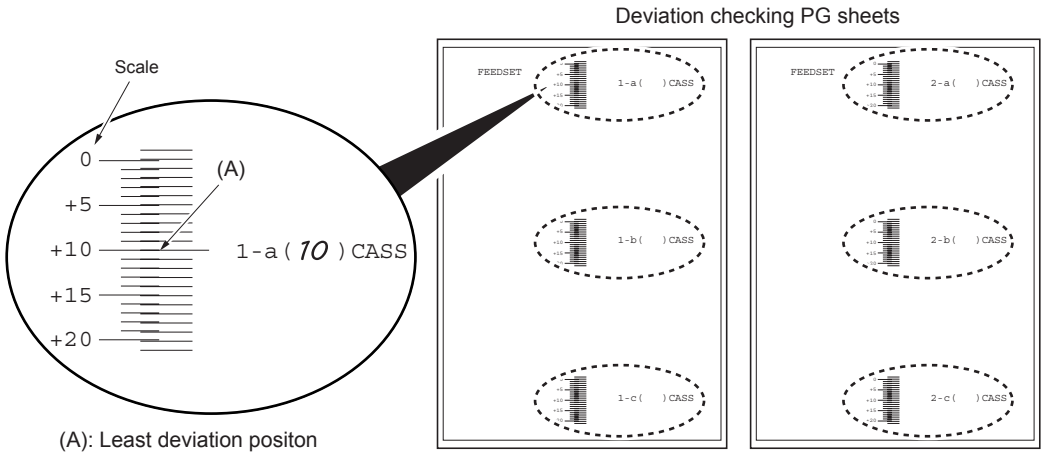
U410 (continue)

Submenu display		Description	Setting range	Initial setting
(2)	>>Prt chart MPT	Deviation checking PG sheets printing [MP tray]	-	-
	>>1-a (MPT)	Adjustment data 1-a input [MP tray]	0 to 20	
	>>1-b (MPT)	Adjustment data 1-b input [MP tray]	0 to 20	
	>>1-c (MPT)	Adjustment data 1-c input [MP tray]	0 to 20	
	>>2-a (MPT)	Adjustment data 2-a input [MP tray]	0 to 20	
	>>2-b (MPT)	Adjustment data 2-b input [MP tray]	0 to 20	
	>>2-c (MPT)	Adjustment data 2-c input [MP tray]	0 to 20	
	>>set (MPT)	Adjustment data setting [MP tray]	0 to 20	
(3)	>>Prt chart OPT	Deviation checking PG sheets printing [cassette]*	-	-
	>>1-b (OPT)	Deviation checking PG printing [cassette]*	0 to 20	
	>>1-c (OPT)	Adjustment data 1-a input [cassette]*	0 to 20	
	>>set (OPT)	Adjustment data 1-b input [cassette]*	0 to 20	
	>>1-a (OPT)	Adjustment data 1-c input [cassette]*	0 to 20	
	>>1-b (OPT)	Adjustment data 2-a input [cassette]*	0 to 20	
	>>1-c (OPT)	Adjustment data 2-b input [cassette]*	0 to 20	
	>>2-a (OPT)	Adjustment data 2-c input [cassette]*	0 to 20	
	>>2-b (OPT)	Adjustment data setting [cassette]*	0 to 20	

Refer to automatic calibration about submenu items other than the above.

*: Optional paper feeder

U No.	Description

U410 (continue)	4. Press the [ENTER] key. "?" will be displayed.
	`>>Prt chart CASS`
	`[410.3]  ?`
	5. Press the [ENTER] key. Two deviation checking PG sheets are output.
	 
	
	(A): Least deviation positon
	6. Check the scale at three locations on the first and second sheets of the output deviation checking PG sheets respectively.
	7. Press the [△/▽] key to select submenu "1-a (CASS)".
	`>>1-a  (CASS)`
	`[410.4]  ###`
	8. Press the [ENTER] key. "_" will blink.
	9. Press the [◁/▷] key to move that "_" to the position at which the value is to be changed, and then press the [△/▽] or key to change the preset value..
	10.Press the [ENTER] key. The new value is set.
	11.Perform procedure 7 to 9 same manner for the following submenus.
	">>1-b (CASS)", ">>1-c (CASS)", ">>2-a (CASS)", ">>2-b (CASS)", and ">>2-c (CASS)"
	12.Press the [△/▽] key to select submenu ">>set (CASS)".
	`>>set  (CASS)`
	`[410.1a]  ###`
	13.Press the [ENTER] key. "_" will blink.
	14.Press the [ENTER] key. The value is set.

U No.	Description

U464	**Setting the image density correction operation**
	Description
	Turns image density correction ON/OFF. Also sets the number of printing after which image density correction is initiated.
	Purpose
	To restrict image density correction when poor image quality is generated.
	Method
	1. Enter the maintenance mode and press the [△/▽] key to display "U464".
	`>ColorCalib set>`
	`[U464]`
	2. Press the [▷] key to display the submenu screen.
	3. Press the [△/▽] key to select an item for which the preset value is to be changed.

Submenu display	Description	Setting range	Initial setting
`>>act_disable.m. Idcal`	0: Enable 1: Disable	0, 1	0
`>>Idhos_intv`	Number of printing, Perform Image density correction	0 to 2000	500
`>>Idhos_intv2`	Number of printing, Calibration shift when the power switch is turned on	0 to 500	0

4. Press the [ENTER] key. "_" will blink.

```
>>act_disable.m.
Idecal[464.1]   #
```

```
>>Idhos_intv
[464.2]   ####
```

5. Press the [◁/▷] key to move "_" to the digit position at which the value is to be changed and press the [△/▽] or key to change the preset value.
6. Press the [ENTER] key. The value is set. To keep the preset value, press the [CANCEL] key.

U No.	Description

U465	**Data reference for image correction**
	Description
	References the data related to image density correction.
	Purpose
	To check the corresponding data.
	Method
	1. Enter the maintenance mode and press the [△/▽] key to display "U465".
	`>Show ColorCali>`
	`[U465]`
	2. Press the [▷] key to display the submenu screen.
	3. Press the [△/▽] key to select an item for which the preset value is to be changed.

Submenu display	Description	Setting range	Initial setting
>>DB_idbak_bk	Developing bias (Black)	0 to 255	0
>>DB_idbak_c	Developing bias (Cyan)	0 to 255	0
>>DB_idbak_m	Developing bias (Magenta)	0 to 255	0
>>DB_idbak_y	Developing bias (Yellow)	0 to 255	0

4. Press the [ENTER] key. "_" will blink.

```
>>DB_idbak_bk
[465.1]   ###
```

5. Press the [◁/▷] key to move "_" to the digit position at which the value is to be changed and press the [△/▽] or key to change the preset value.
6. Press the [ENTER] key. The value is set. To keep the preset value, press the [CANCEL] key.

U No.	Description

U467	**Setting color registration correction**
	Description
	Sets color registration correction.
	Method
	1. Enter the maintenance mode and press the [△/▽] key to display "U467".
	`>RegCalib set >`
	`[U467]`
	2. Press the [▷] key to display the submenu screen.
	3. Press the [△/▽] key to select an item for which the preset value is to be changed.

Submenu display	Description	Setting range	Initial setting
`>>act_disable.m. Regcal`	0: Enable the operation 1: Disable the operation	0, 1	1
`>>act2disable.m. Regcal`	0: Enable (Operation setting after removal and insertion of transfer unit) 1: Disable (Operation setting after removal and insertion of transfer unit)	0, 1	1
`>>Regcal line`	Number of printing, Performing color registration correction	0 to 9999	0

4. Press the [ENTER] key. "_" will blink.

`>>act_disable.m. Regcal[467.1] #`

`>>Regcal line [467.3] ####`

5. Press the [◁/▷] key to move "_" to the digit position at which the value is to be changed and press the [△/▽] or key to change the preset value.
6. Press the [ENTER] key. The value is set. To keep the preset value, press the [CANCEL] key.

U No.	Description

U468	**Data reference for color registration correction**
	Method
	1. Enter the maintenance mode and press the [△/▽] key to display "U468".
	`>Show RegCalib>`
	`[U468]`
	2. Press the [▷] key to display the submenu screen.
	3. Press the [△/▽] key to select an item for which the preset value is to be changed.

Submenu display	Description	Setting range	Initial setting
>>Reg_sldir.m.bk	Gradient 1 (Black)	0, 1	1
>>Hdc_sldeg_bk	Gradient 2 (Black)	0 to 7168	7168
>>Hdc_linedst_bk	Gradient 3 (Black)	0 to 21	0
>>Bshift_k	Main scan deviation correction (Black)	0 to 4095	2244
>>Reg_rdtim_bk	Sub scan deviation correction (Black)	-70 to 70	0
>>Reg_sldir.m.c	Gradient 1 (Cyan)	0, 1	1
>>Hdc_sldeg_c	Gradient 2 (Cyan)	0 to 7168	7158
>>Hdc_linedst_c	Gradient 3 (Cyan)	0 to 21	0
>>Bshift_c	Main scan deviation correction (Cyan)	0 to 4095	2244
>>Reg_rdtim_c	Sub scan deviation correction (Cyan)	-70 to 70	0
>>Reg_sldir.m.m	Gradient 1 (Magenta)	0, 1	1
>>Hdc_sldeg_m	Gradient 2 (Magenta)	0 to 7168	7168
>>Hdc_linedst_m	Gradient 3 (Magenta)	0 to 21	0
>>Bshift_m	Main scan deviation correction (Magenta)	0 to 4095	0
>>Reg_rdtim_m	Sub scan deviation correction (Magenta)	-70 to 70	0
>>Reg_sldir.m.y	Gradient 1 (Yellow)	0, 1	1
>>Hdc_sldeg_y	Gradient 2 (Yellow)	0 to 7168	7168
>>Hdc_linedst_y	Gradient 3 (Yellow)	0 to 21	0
>>Bshift_y	Main scan deviation correction (Yellow)	0 to 4095	2244
>>Reg_rdtim_y	Sub scan deviation correction (Yellow)	-70 to 70	0

4. Press the [ENTER] key. "_" will blink.

```
>>Reg_sldir.m.bk
[468.1]   ###
```

5. Press the [◁/▷] key to move "_" to the digit position at which the value is to be changed and press the [△/▽] or key to change the preset value.
6. Press the [ENTER] key. The value is set. To keep the preset value, press the [CANCEL] key.

1-5-1 Paper misfeed detection

(1) Paper misfeed indication

When a paper misfeed occurs, the printer immediately stops printing and displays the paper misfeed message on the operator panel. To remove paper misfeed in the printer, pull out the paper cassette or open right cover 1, right cover 2, paper feed unit (transfer unit), left cover and fuser unit.

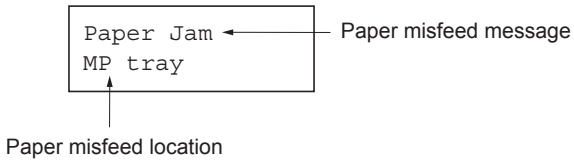


Figure 1-5-1 Paper misfeed message display

(2) Paper misfeed detection

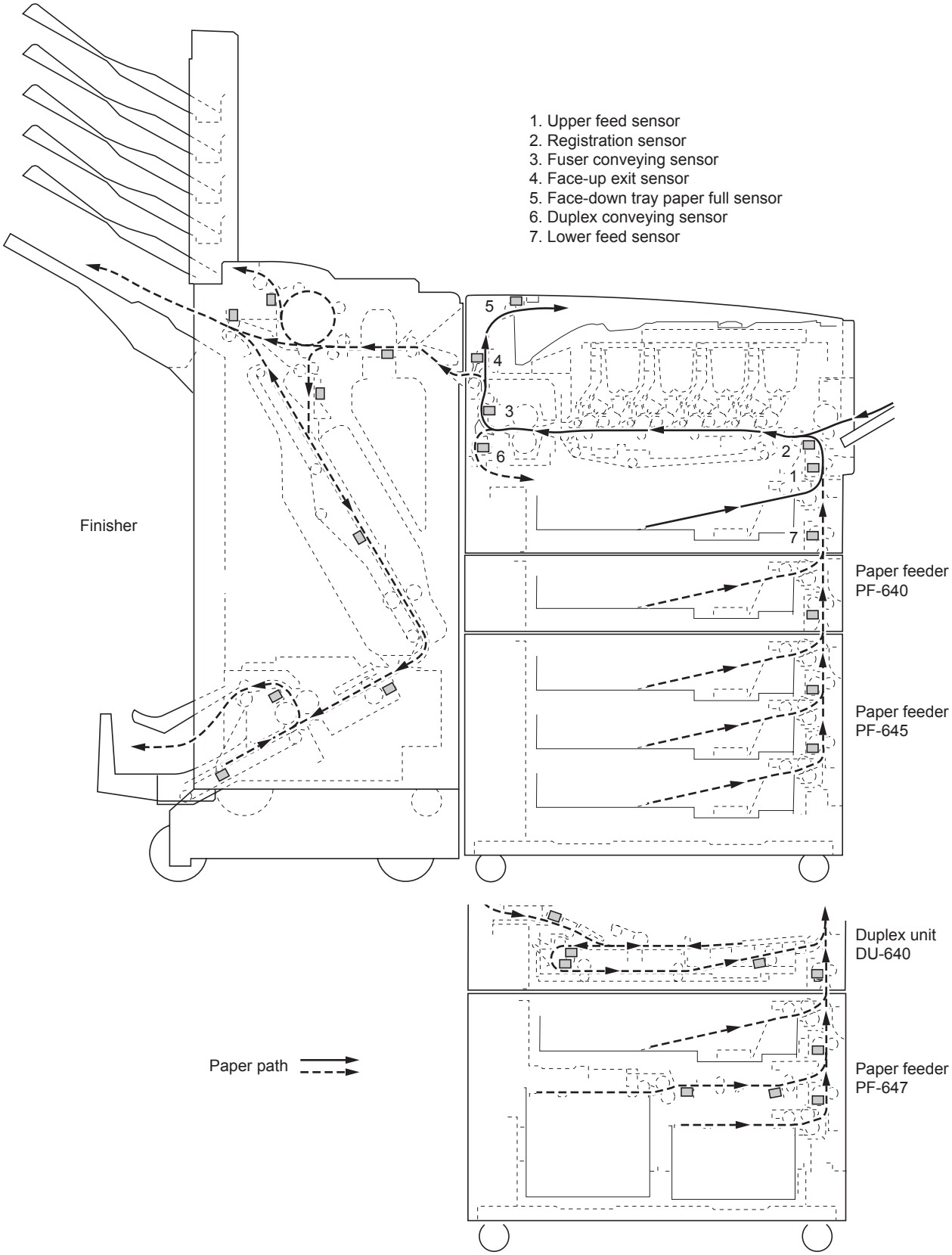


Figure 1-5-2 Paper misfeed detection

1-5-2 Self-diagnosis

(1) Self-diagnostic function

This printer is equipped with self-diagnostic function. When a problem is detected, the printer stops printing and display an error message on the operator panel. An error message consists of a message prompting a contact to service personnel, total print count, and a four-digit error code (except F0) indicating the type of the error.

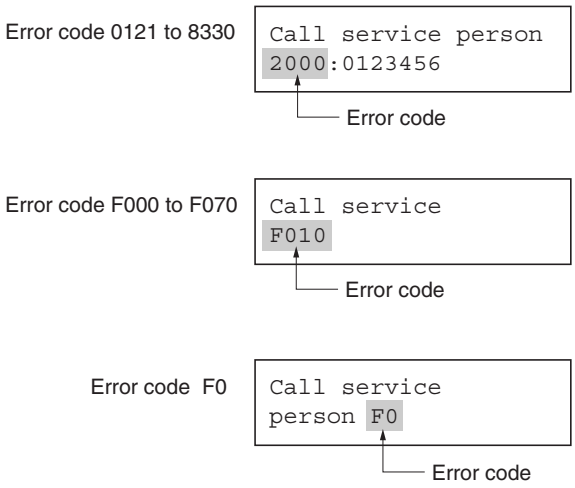


Figure 1-5-3 Error message display

(2) Self diagnostic codes

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
0121	**EEPROM read error (drum PWB K)** • When data is transmitted to the EEPROM on drum PWB K, the ACK signal is not returned within 1 s.	Poor contact in the connector terminals.	Check the connection of connector YC9 on the engine controller PWB and the continuity across the connector terminals. Repair or replace if necessary.
		Defective drum PWB K.	Replace the black process unit.
0122	**EEPROM read error (drum PWB C)** • When data is transmitted to the EEPROM on drum PWB C, the ACK signal is not returned within 1 s.	Poor contact in the connector terminals.	Check the connection of connector YC10 on the engine controller PWB and the continuity across the connector terminals. Repair or replace if necessary.
		Defective drum PWB C.	Replace the cyan process unit.
0123	**EEPROM read error (drum PWB M)** • When data is transmitted to the EEPROM on drum PWB M, the ACK signal is not returned within 1 s.	Poor contact in the connector terminals.	Check the connection of connector YC11 on the engine controller PWB and the continuity across the connector terminals. Repair or replace if necessary.
		Defective drum PWB M.	Replace the magenta process unit.
0124	**EEPROM read error (drum PWB Y)** • When data is transmitted to the EEPROM on drum PWB Y, the ACK signal is not returned within 1 s.	Poor contact in the connector terminals.	Check the connection of connector YC12 on the engine controller PWB and the continuity across the connector terminals. Repair or replace if necessary.
		Defective drum PWB Y.	Replace the black process unit.
0150	**Backup memory device problem (Engine controller PWB)** • An error occurs in backup data read or write for the engine controller PWB. • An error occurs in control area deletion.	Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
0160	**Backup memory data problem (Engine controller PWB)** • Data for backup data check is changed at the check after startup.	Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
0170	**Total counts problem** • A checksum error is detected in the main and sub backup memories for the total counters.	Data damage of EEPROM.	Contact the Service Administrative Division.
0240	**Main controller PWB communication problem** • The main controller PWB does not respond 120 seconds after the power is turned on.	Poor contact in the connector terminals.	Check the connection of connector YC6 on the engine interface PWB and the connector on the main controller PWB. Repair or replace if necessary.
		DIMM installed incorrectly.	Check the connection. Repair or replace if necessary.
		Defective engine interface PWB or main controller PWB.	Replace the engine interface PWB or main controller and check for correct operation.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
0310	**LPH drive PWB communication error** • When an error in communication with the CPU for LPH control on the LPH drive PWB is detected, transmission/ reception is not normally completed even after 10 times of retry.	Poor contact in the connector terminals.	Check the connection of connector YC31 on the engine controller PWB and the connector YC2 on the LPH drive PWB. Repair or replace if necessary.
		Defective LPH drive PWB.	Replace the LPH drive PWB.
		Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
0420	**Paper feeder communication error 1 (upper of optional paper feeder PF-640)** • Reception is not normally completed even after 40 times of retry at startup or 5 times of retry in normal operation.	Poor contact in the connector terminals.	Check the connection of connector YC27 on the engine controller PWB. Repair or replace if necessary.
		Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
		Defective upper of optional paper feeder PF-640.	Replace the paper feeder with another unit and check the operation. If the operation is normal, replace or repair the upper of the optional paper feeder PF-640 (see the service manual for the paper feeder PF-640).
0440	**Document finisher communication problem (optional document finisher)** • Reception is not normally completed even after 40 times of retry at startup or 5 times of retry in normal operation.	Poor contact in the connector terminals.	Check the connection of connector YC26 on the engine controller PWB. Repair or replace if necessary.
		Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
		Defective optional document finisher.	Replace the document finisher with another unit and check the operation. If the operation is normal, replace or repair the optional document finisher (see the service manual for the document finisher).
0500	**Paper feeder communication error 1 (lower of optional paper feeder PF-640)** • Reception is not normally completed even after 40 times of retry at startup or 5 times of retry in normal operation.	Poor contact in the connector terminals.	Check the connection of connector YC27 on the engine controller PWB. Repair or replace if necessary.
		Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
		Defective lower of optional paper feeder PF-640.	Replace the paper feeder PF-640 with another unit and check the operation. If the operation is normal, replace or repair the lower of the optional paper feeder PF-640 (see the service manual for the paper feeder PF-640).
0700	**Paper feeder EEPROM error 1 (upper of optional paper feeder PF-640)** • When power is turned on, an error is detected in memory check for the upper of the optional 500 sheets paper feeder and a backup memory error is received in serial communication data.	Poor contact in the connector terminals.	Check the connection of connector YC27 on the engine controller PWB. Repair or replace if necessary.
		Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
		Defective upper of optional paper feeder PF-640.	Replace the paper feeder PF-640 with another unit and check the operation. If the operation is normal, replace or repair the upper of the optional paper feeder PF-640 (see the service manual for the paper feeder PF-640).

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
0710	**Paper feeder EEPROM error 2 (lower of optional paper feeder PF-640)** • When power is turned on, an error is detected in memory check for the lower of the paper feeder PF-640 and a backup memory error is received in serial communication data.	Poor contact in the connector terminals.	Check the connection of connector YC27 on the engine controller PWB. Repair or replace if necessary.
		Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
		Defective lower of optional paper feeder PF-640.	Replace the paper feeder PF-640 with another unit and check the operation. If the operation is normal, replace or repair the lower of the optional paper feeder PF-640 (see the service manual for the paper feeder PF-640).
0750	**Document finisher* EEPROM error** • A backup memory error is received in serial communication data from the finisher.	Poor contact in the connector terminals.	Check the connection of connector YC27 on the engine controller PWB. Repair or replace if necessary.
		Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
		Defective optional document finisher.	Replace the document finisher with another unit and check the operation. If the operation is normal, replace or repair the document finisher (see the service manual for the document finisher).
0951	**LPH current correction EEPROM error** • A correction data error for the fourth color (black) is detected.	Defective EEPROM of LPH drive PWB.	Rewrite correction data (see page 1-6-41).
0926	**LPH current correction EEPROM error** • A correction data error for the second color (cyan) is detected.	Defective EEPROM of LPH drive PWB.	Rewrite correction data (see page 1-6-41).
0953	**LPH current correction EEPROM error** • A correction data error for the first color (magenta) is detected.	Defective EEPROM of LPH drive PWB.	Rewrite correction data (see page 1-6-41).
0954	**LPH current correction EEPROM error** • A correction data error for the third color (yellow) is detected.	Defective EEPROM of LPH drive PWB.	Rewrite correction data (see page 1-6-41).
1010	**Cassette lift motor error** • The bottom plate limit detection sensor is not turned on within 9,000 ms after the cassette is inserted and the sensor is not turned on within 500 ms at the second time and after.	Defective bottom plate elevation mechanism.	Check to see if the bottom plate can move smoothly and repair it if any problem is found.
		Defective cassette lift motor.	Replace the cassette lift motor.
		Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
1100	**Cassette lift motor error (upper cassette of optional paper feeder PF-645)** • The paper feeder upper limit detection sensor is not turned on within 10,000 ms after the upper cassette is inserted and the sensor is not turned on within 500 ms at the second time and after.	Defective bottom plate elevation mechanism.	Check to see if the bottom plate can move smoothly and repair it if any problem is found. (See the service manual for the paper feeder PF-645.)
		Defective upper cassette lift motor.	Replace the upper cassette lift motor. (See the service manual for the paper feeder PF-645.)
		Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
1110	**Cassette lift motor error (middle cassette of optional paper feeder PF-645)** • The paper feeder middle limit detection sensor is not turned on within 10,000 ms after the middle cassette is inserted and the sensor is not turned on within 500 ms at the second time and after.	Defective bottom plate elevation mechanism.	Check to see if the bottom plate can move smoothly and repair it if any problem is found. (See the service manual for the paper feeder PF-645.)
		Defective middle cassette lift motor.	Replace the middle cassette lift motor. (See the service manual for the paper feeder PF-645.)
		Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
1120	**Cassette lift motor error (lower cassette of optional paper feeder PF-645)** • The paper feeder lower limit detection sensor is not turned on within 10,000 ms after the lower cassette is inserted and the sensor is not turned on within 500 ms at the second time and after.	Defective bottom plate elevation mechanism.	Check to see if the bottom plate can move smoothly and repair it if any problem is found. (See the service manual for the paper feeder PF-645.)
		Defective lower cassette lift motor.	Replace the lower cassette lift motor. (See the service manual for the paper feeder PF-645.)
		Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
1130	**Cassette lift motor error (cassette of paper feeder PF-647)** • The paper feeder limit detection sensor is not turned on within 10,000 ms after the cassette is inserted and the sensor is not turned on within 500 ms at the second time and after.	Defective bottom plate elevation mechanism.	Check to see if the bottom plate can move smoothly and repair it if any problem is found. (See the service manual for the paper feeder PF-647.)
		Defective cassette lift motor.	Replace the cassette lift motor. (See the service manual for the paper feeder.)
		Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
1140	**Deck lift motor error (right deck of paper feeder PF-647)** • The right deck limit detection sensor is not turned on within 60,000 ms after the right deck is inserted and the sensor is not turned on within 1,000 ms at the second time and after.	Defective bottom plate elevation mechanism.	Check to see if the bottom plate can move smoothly and repair it if any problem is found.
		Defective right deck lift motor.	Replace the right deck lift motor. (See the service manual for the paper feeder PF-647.)
		Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
1150	**Deck lift motor error (left deck of paper feeder PF-647)** • The left deck limit detection sensor is not turned on within 60,000 ms after the left deck is inserted and the sensor is not turned on within 1,000 ms at the second time and after.	Defective bottom plate elevation mechanism.	Check to see if the bottom plate can move smoothly and repair it if any problem is found.
		Defective left deck lift motor.	Replace the left deck lift motor. (See the service manual for the paper feeder PF-647.)
		Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
1160	**Cassette lift motor error (upper of paper feeder PF-640)** • The paper feeder limit detection sensor is not turned on within 10,000 ms after the cassette is inserted and the sensor is not turned on within 500 ms at the second time and after.	Defective bottom plate elevation mechanism.	Check to see if the bottom plate can move smoothly and repair it if any problem is found. (See the service manual for the paper feeder PF-640.)
		Defective cassette lift motor.	Replace the cassette lift motor. (See the service manual for the paper feeder PF-640.)
		Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
1170	**Cassette lift motor error (lower of paper feeder PF-640)** • The paper feeder limit detection sensor is not turned on within 10,000 ms after the cassette is inserted and the sensor is not turned on within 500 ms at the second time and after.	Defective bottom plate elevation mechanism.	Check to see if the bottom plate can move smoothly and repair it if any problem is found. (See the service manual for the paper feeder PF-640.)
		Defective cassette lift motor.	Replace the cassette lift motor. (See the service manual for the paper feeder PF-640.)
		Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
1200	**Duplex side registration motor error (optional duplex unit*)** • The duplex side registration home position sensor does not detect the home position of the side registration guide. *Duplex unit is standard equipment for 120 V (U.S.A.) specifications.	Defective duplex side registration home position sensor.	Check the connection of connector YC29 on the engine controller PWB. Repair or replace if necessary.
		Defective duplex side registration motor.	Replace the duplex side registration motor. (See the service manual for the duplex unit.)
		Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
2101	**Developing K/fuser motor error** • After the motor drive ON signal is output and 1 s elapses, the rated speed reach signal is not input continuously for 2 s.	Poor contact in the connector terminals.	Check the connection of connector YC27 on the engine controller PWB. Repair or replace if necessary.
		Defective developing K/fuser motor.	Replace the developing K/fuser motor.
		Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
2102	**Developing MCY motor error** • After the motor drive ON signal is output and 1 s elapses, the rated speed reach signal is not input continuously for 2 s.	Poor contact in the connector terminals.	Check the connection of connector YC6 on the engine controller PWB. Repair or replace if necessary.
		Defective developing MCY motor.	Replace the developing MCY motor.
		Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
2201	**Drum motor K error** • After the motor drive ON signal is output and 3 s elapses, the rated speed reach signal is not input continuously for 2 s.	Poor contact in the connector terminals.	Check the connection of connector YC5 on the engine controller PWB. Repair or replace if necessary.
		Defective drum motor K.	Replace the drum motor K.
		Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
2202	**Drum motor C error** • After the motor drive ON signal is output and 3 s elapses, the rated speed reach signal is not input continuously for 2 s.	Poor contact in the connector terminals.	Check the connection of connector YC5 on the engine controller PWB. Repair or replace if necessary.
		Defective drum motor C.	Replace the drum motor C.
		Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
2203	**Drum motor M error** • After the motor drive ON signal is output and 3 s elapses, the rated speed reach signal is not input continuously for 2 s.	Poor contact in the connector terminals.	Check the connection of connector YC5 on the engine controller PWB. Repair or replace if necessary.
		Defective drum motor M.	Replace the drum motor M.
		Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
2204	**Drum motor Y error** • After the motor drive ON signal is output and 3 s elapses, the rated speed reach signal is not input continuously for 2 s.	Poor contact in the connector terminals.	Check the connection of connector YC5 on the engine controller PWB. Repair or replace if necessary.
		Defective drum motor Y.	Replace the drum motor Y.
		Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
2500	**Paper feed motor error** • After the motor drive ON signal is output and 1 s elapses, the rated speed reach signal is not input continuously for 2 s.	Poor contact in the connector terminals.	Check the connection of connector YC23 on the engine controller PWB and YC1 on the clutch PWB, and the continuity across the connector terminals. Repair or replace if necessary.
		Defective paper feed motor.	Replace the paper feed motor.
		Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
2600	**Paper feed motor error (optional paper feeder PF-645/647)** • After the motor drive ON signal is output and 2 s elapse, paper feed motor error communication data is transmitted continuously for 1 s.	Poor contact in the connector terminals.	Check the connection of connector YC27 on the engine controller PWB. Repair or replace if necessary.
		Defective paper feed motor.	Replace the paper feed motor. (See the service manual for the paper feeder PF-645/647.)
		Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
2700	**Transfer lift motor error** • Even if 5,000 ms elapse after the transfer lift motor drive signal is turned on, the transfer lift home position sensor is not turned on. • Even if 5,000 ms elapse after the transfer lift motor drive ON signal is output, the transfer lift home position sensor is not turned off.	Poor contact in the connector terminals.	Check the connection of connector YC4 on the engine controller PWB or connectors YC1 and YC2 on the transfer relay PWB for any problem, and repair them if any problem is found.
		Defective transfer lift home position sensor.	Replace the transfer roller lift home position sensor.
		Defective transfer lift motor.	Replace the transfer roller lift motor.
		Misfeed in the conveying section or fuser section.	Remove the jammed paper completely.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
2710	**Waste toner box motor error** • After the motor drive remote signal is turned on, the overcurrent detection signal is detected continuously for more than 200 ms.	Overload on the waste toner box motor.	Check to see if the waste toner in the waste toner box is solidified. If any problem is found, replace the waste toner box.
		Defective waster toner box motor.	Replace the waster toner box motor.
5100	**Main high-voltage error** • While the main high-voltage output remote signal is on, an alarm signal is detected continuously for 400 ms.	Leak of main high-voltage.	Check the main charger unit and replace if necessary.
5301	**Eraser lamp K break error** • After the eraser lamp K ON signal is turned on, the eraser lamp K break signal is detected continuously for 200 ms.	Poor contact in the connector terminals.	Check the connection of connector YC9 on the engine controller PWB and the continuity across the connector terminals. Repair or replace if necessary.
		Defective eraser lamp K.	Replace the black process unit.
5302	**Eraser lamp C break error** • After the eraser lamp C ON signal is turned on, the eraser lamp C break signal is detected continuously for 200 ms.	Poor contact in the connector terminals.	Check the connection of connector YC10 on the engine controller PWB and the continuity across the connector terminals. Repair or replace if necessary.
		Defective eraser lamp C.	Replace the cyan process unit.
5303	**Eraser lamp M break error** • After the eraser lamp C ON signal is turned on, the eraser lamp M break signal is detected continuously for 200 ms.	Poor contact in the connector terminals.	Check the connection of connector YC11 on the engine controller PWB and the continuity across the connector terminals. Repair or replace if necessary.
		Defective eraser lamp M.	Replace the magenta process unit.
5304	**Eraser lamp Y break error** • After the eraser lamp Y ON signal is turned on, the eraser lamp Y break signal is detected continuously for 200 ms.	Poor contact in the connector terminals.	Check the connection of connector YC12 on the engine controller PWB and the continuity across the connector terminals. Repair or replace if necessary.
		Defective eraser lamp Y.	Replace the yellow process unit.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
6000	**Upper fuser heater lamp break** • The time for increasing the temperature at the upper fuser heater lamp to 60°C during warm-up exceeds 100 s from the start of warm-up. Then, the time for increasing the temperature from 60 °C/140 °F to 120 °C/248 °F exceeds 100 s.	Installation defectiveness on upper fuser thermistor.	Check the mounting state of the upper fuser thermistor. If any problem is found, repair it (see page 1-6-18).
		Defective upper fuser thermostat.	Replace the upper fuser thermostat (see page 1-6-18).
		Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
		Defective power supply PWB.	Replace the power supply PWB (see page 1-6-27).
		Defective fuser PWB.	Replace the fuser PWB.
		Connected malfunction of electric wire on upper fuser thermistor or connected malfunction of connector terminal.	Check the cable of the upper fuser thermistor and the connection of the fuser PWB for any problem. If any problem is found, repair it.
		Defective upper fuser heater lamp.	Replace the upper fuser heater lamp (see page 1-6-18).
6020	**Upper fuser thermistor high-temperature detection error** • The temperature at the upper fuser roller 205 °C/401 °F or more is detected continuously for 5 s.	Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
		Defective fuser PWB.	Replace the fuser PWB.
		Defective power supply PWB.	Replace the power supply PWB (see page 1-6-27).
		Installation defectiveness on upper fuser thermistor.	Check the mounting state of the upper fuser thermistor. If any problem is found, repair it (see page 1-6-18).
		Defective upper fuser thermistor.	Replace the upper fuser thermistor (see page 1-6-18).

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
6030	**Upper fuser thermistor break error** • After the fuser heater lamp is turned on, the temperature at the upper fuser roller lower than 40 °C/104 °F continues for 30 s.	Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
		Defective harness between fuser PWB and upper fuser thermistor, or poor contact of the connector terminals.	Check the insertion of connectors of the fuser PWB. Repair if necessary.
		Defective harness between fuser PWB and fuser unit connectors.	Check the continuity of the harness and the insertion of connectors of the fuser PWB. Repair if necessary.
		Defective harness between power supply PWB and fuser unit connectors.	Check the continuity of the harness and the connection of connector YC902 on the power supply PWB. Repair if necessary.
		Defective fuser PWB.	Replace the fuser PWB.
		Defective power supply PWB.	Replace the power supply PWB (see page 1-6-27).
		Installation defectiveness on upper fuser thermistor.	Check the mounting state of the upper fuser thermistor. If any problem is found, repair it (see page 1-6-18).

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
6050	**Upper fuser thermistor abnormal temperature detection** • During copying, the temperature at the upper fuser roller lower than 120 °C/248 °F is detected continuously for 5 s.	Installation defectiveness on upper fuser thermistor.	Check the mounting state of the upper fuser thermistor. If any problem is found, repair it (see page 1-6-18).
		Operation on upper fuser thermostat.	Replace the upper fuser thermostat (see page 1-6-18).
		Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
		Defective power supply PWB.	Replace the power supply PWB (see page 1-6-27).
		Defective fuser PWB.	Replace the fuser PWB.
		Defective harness between fuser PWB and upper fuser thermistor, or poor contact of the connector terminals.	Check the insertion of connectors of the fuser PWB. Repair if necessary.
		Defective upper fuser heater lamp.	Replace the upper fuser heater lamp (see page 1-6-18).
		Defective harness between fuser unit connectors and upper fuser heater lamp.	Check the continuity of the harness and the insertion of connectors of the fuser PWB. Repair if necessary.
		Defective harness between fuser unit connectors and power supply PWB.	Check the continuity of the harness and the insertion of connectors of the power supply PWB. Repair if necessary.
6100	**Lower fuser heater lamp break** • The time for increasing the temperature at the upper fuser heater lamp to 60 °C/140 °F during warm-up exceeds 100 s from the start of warm-up. Then, the time for increasing the temperature from 60 °C/140 °F to 120 °C/218 °F exceeds 100 s.	Installation defectiveness on lower fuser thermistor.	Check the mounting state of the lower fuser thermistor. If any problem is found, repair it (see page 1-6-18).
		Operation on lower fuser thermostat.	Replace the lower fuser thermostat (see page 1-6-18).
		Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
		Defective power supply PWB.	Replace the power supply PWB (see page 1-6-27).
		Defective fuser PWB.	Replace the fuser PWB.
		Defective harness of lower fuser thermistor, or poor contact of the connector terminals.	Check the continuity of the harness of the lower fuser thermistor and the insertion of connectors of the fuser PWB. Repair if necessary.
		Defective lower fuser heater lamp.	Replace the lower fuser heater lamp (see page 1-6-18).

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
6120	**Lower fuser thermistor detection error** • The temperature at the lower fuser roller 205 °C/401 °F or more is detected continuously for 5 s.	Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
		Defective fuser PWB.	Replace the fuser PWB.
		Defective power supply PWB.	Replace the power supply PWB (see page 1-6-27).
		Installation defectiveness on lower fuser thermistor.	Check the mounting state of the lower fuser thermistor. If any problem is found, repair it (see page 1-6-18).
		Defective lower fuser thermistor.	Replace the lower fuser thermistor (see page 1-6-18).
6130	**Lower fuser thermistor break error** • After the fuser heater lamp is turned on, the temperature at the upper fuser roller lower than 40 °C/104 °F continues for 30 s.	Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
		Defective harness between fuser PWB and lower fuser thermistor, or poor contact of the connector terminals.	Check the insertion of connectors of the fuser PWB. Repair if necessary.
		Defective harness between fuser PWB and fuser unit connectors.	Check the continuity of the harness and the insertion of connectors of the fuser PWB. Repair if necessary.
		Defective harness between power supply PWB and fuser unit connectors.	Check the continuity of the harness and the insertion of connectors of the power supply PWB. Repair if necessary.
		Defective fuser PWB.	Replace the fuser PWB.
		Defective power supply PWB.	Replace the power supply PWB (see page 1-6-27).
		Installation defectiveness on lower fuser thermistor.	Check the mounting state of the lower fuser thermistor. If any problem is found, repair it (see page 1-6-18).

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
6150	**Lower fuser thermistor abnormal temperature detection** • During copying, the temperature at the lower fuser roller lower than 100 °C/ 212 °F is detected continuously for 5 s.	Installation defectiveness on lower fuser thermistor.	Check the mounting state of the lower fuser thermistor. If any problem is found, repair it (see page 1-6-18).
		Operation on lower fuser thermostat.	Replace the lower fuser thermostat (see page 1-6-18).
		Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
		Defective power supply PWB.	Replace the power supply PWB (see page 1-6-27).
		Defective fuser PWB.	Replace the fuser PWB.
		Defective harness between fuser PWB and upper fuser thermistor, or poor contact of the connector terminals.	Check the insertion of connectors of the fuser PWB. Repair if necessary.
		Defective lower fuser heater lamp.	Replace the lower fuser heater lamp (see page 1-6-18).
		Defective harness between fuser unit connectors and lower fuser heater lamp.	Check the continuity of the harness and the insertion of connectors of the fuser PWB. Repair if necessary.
		Defective harness between fuser unit connectors and power supply PWB.	Check the continuity of the harness and the insertion of connectors of the power supply PWB. Repair if necessary.
6400	**Zero-cross signal error** • After power is turned on, the zero-cross signal is not input within 3 s. • While fuser heater ON/OFF control is performed, the zero-cross signal is not input within 5 s.	Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
		Defective power supply PWB.	Replace the power supply PWB (see page 1-6-27).
6410	**Fuser unit insertion error** • Improper adaptation of the machine and the fuser unit is detected.	Fuser unit connector inserted incorrectly.	Reinsert the fuser unit connector if necessary.
		Defective fuser unit connector.	Replace the fuser unit.
6420	**Fuser fuse cut error** • After a new fuser unit is installed and the fuse cut signal is turned on and then the fuse cut signal is turned off after 3,000 ms, the fuse cannot be cut.	Fuser unit is not conformed.	Check parts number of fuser unit and install correct unit.
		Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
7001	**Toner motor K error** • After the toner motor K drive signal is turned on, the toner motor K overcurrent detection signal is detected continuously for 180 × 50 ms.	Defective toner motor K.	Replace the toner motor K.
		Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
7002	**Toner motor C error** • After the toner motor C drive signal is turned on, the toner motor C overcurrent detection signal is detected continuously for 180 × 50 ms.	Defective toner motor C.	Replace the toner motor C.
		Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
7003	**Toner motor M error** • After the toner motor M drive signal is turned on, the toner motor M overcurrent detection signal is detected continuously for 180 × 50 ms.	Defective toner motor M.	Replace the toner motor M.
		Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
7004	**Toner motor Y error** • After the toner motor Y drive signal is turned on, the toner motor Y overcurrent detection signal is detected continuously for 180 × 50 ms.	Defective toner motor Y.	Replace the toner motor Y.
		Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
7101	**Toner sensor K error** • The value of input from toner sensor K is 4.5 V or more or 0.5 V or less.	Defective toner sensor K.	Replace the black process unit.
		Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
7102	**Toner sensor C error** • The value of input from toner sensor C is 4.5 V or more or 0.5 V or less.	Defective toner sensor C.	Replace the cyan process unit.
		Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
7103	**Toner sensor M error** • The value of input from toner sensor M is 4.5 V or more or 0.5 V or less.	Defective toner sensor M.	Replace the magenta process unit.
		Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
7104	**Toner sensor Y error** • The value of input from toner sensor Y is 4.5 V or more or 0.5 V or less.	Defective toner sensor Y.	Replace the yellow process unit.
		Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
7200	**Broken internal thermistor wire** • The value of input from the internal thermistor 4.5 V or more is detected.	Poor contact in the connector terminals.	Check the connection of connector YC3 on the engine controller PWB and the continuity across the connector terminals. Repair or replace if necessary.
		Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
7210	**Short-circuited internal thermistor** • The value of input from the internal thermistor 0.3 V or less is detected.	Poor contact in the connector terminals.	Check the connection of connector YC3 on the engine controller PWB and the continuity across the connector terminals. Repair or replace if necessary.
		Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
7301	**Toner hopper error (black process unit)** • When black toner is replenished (simple replenishment), if the replenishment release level is not reached even if black toner is replenished for 3 s (1 s) with the black toner low level not detected, the state is regarded as a black toner container non-installing error. This error occurs four times.	Black toner container is not installed.	Check the state of the black toner container and install it properly.
		Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
7302	**Toner hopper error (cyan process unit)** • When cyan toner is replenished (simple replenishment), if the replenishment release level is not reached even if cyan toner is replenished for 3 s (1 s) with the black toner low level not detected, the state is regarded as a cyan toner container non-installing error. This error occurs four times.	Cyan toner container is not installed.	Check the state of the cyan toner container and install it properly.
		Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
7303	**Toner hopper error (magenta process unit)** • When magenta toner is replenished (simple replenishment), if the replenishment release level is not reached even if magenta toner is replenished for 3 s (1 s) with the magenta toner low level not detected, the state is regarded as a magenta toner container non-installing error. This error occurs four times.	Magenta toner container is not installed.	Check the state of the magenta toner container and install it properly.
		Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
7304	**Toner hopper error (yellow process unit)** • When yellow toner is replenished (simple replenishment), if the replenishment release level is not reached even if yellow toner is replenished for 3 s (1 s) with the yellow toner low level not detected, the state is regarded as a yellow toner container non-installing error. This error occurs four times.	Yellow toner container is not installed.	Check the state of the yellow toner container and install it properly.
		Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
7600	**Toner ID sensor problem** • The sampling input of toner ID sensor 1 and toner ID sensor 2 without patch exceeds the threshold respectively.	Defective toner ID sensor 1 or 2.	Replace the transfer unit.
		Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
7610	**Image density measurement timing problem** • The measured value of density patch is abnormal.	Faulty density due to a mechanical cause.	Check the drum unit, high voltage unit, developing unit, and transfer unit. If any problem is found, replace the unit.
7620	**Color registration timing error** • The number of PG lines for registration correction 32 is not detected properly.	Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
7800	**Broken external thermistor wire** • The thermistor output value is 4.5 V or more.	Poor contact in the connector terminals.	Check the connection of connector YC3 on the engine controller PWB and the continuity across the connector terminals. Repair or replace if necessary.
		Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
7810	**Short-circuited external thermistor** • The thermistor input value is 0.5 V or less.	Poor contact in the connector terminals.	Check the connection of connector YC3 on the engine controller PWB and the continuity across the connector terminals. Repair or replace if necessary.
		Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
8010	**Optional document finisher paper conveying motor problem** • The LOCK signal of the paper conveying motor is detected for more than 500 ms while the paper conveying motor is operating. However, the first 1 s after the paper conveying motor is turned on is excluded from detection.	Loose connection of the paper conveying motor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective paper conveying motor.	Replace the paper conveying motor and check for correct operation.
		Defective finisher main PWB.	Replace the finisher main PWB and check for correct operation.
8020	**Optional document finisher punch motor problem** • The LOCK signal of the punch motor is detected for more than 500 ms while the punch motor is operating. However, the first 1 s after the punch motor is turned on is excluded from detection.	Loose connection of the punch motor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective punch motor.	Replace the punch motor and check for correct operation.
		Defective finisher main PWB.	Replace the finisher main PWB and check for correct operation.
8030	**Optional document finisher upper paper conveying belt problem** • During initialization, the intermediate tray upper sliding plate is not detected in the home position within 3 s after the belt returns to the home position. JAM87 is indicated the first time this problem occurs. If the problem reoccurs after initialization when the front cover is opened and closed, the problem is in the upper paper conveying belt. • When the intermediate tray upper sliding plate is operated from the home position, the upper paper conveying belt home position sensor does not turn off within 1 s.	Phase shift of the upper paper conveying belt.	Correct the phase of the upper paper conveying belt and check for correct operation.
		Malfunction of the upper paper conveying belt motor.	Replace the upper paper conveying belt motor and check for correct operation.
		Malfunction of the upper paper conveying belt home position sensor.	Replace the upper paper conveying belt home position sensor and check for correct operation.
		Loose connection of the upper paper conveying belt home position sensor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Incorrect insertion of the intermediate tray.	Check whether the intermediate tray catches are damaged.
		Defective finisher main PWB.	Replace the finisher main PWB and check for correct operation.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
8040	**Optional document finisher lower paper conveying belt problem** • During initialization, the intermediate tray lower sliding plate is not detected in the home position within 3 s after the belt returns to the home position. JAM87 is indicated the first time this problem occurs. If the problem reoccurs after initialization when the front cover is opened and closed, the problem is in the lower paper conveying belt. • When the intermediate tray lower sliding plate is operated from the home position, the lower paper conveying belt home position sensor does not turn off within 1 s.	Phase shift of the lower paper conveying belt.	Correct the phase of the lower paper conveying belt and check for correct operation.
		Malfunction of the lower paper conveying belt motor.	Replace the lower paper conveying belt motor and check for correct operation.
		Malfunction of the lower paper conveying belt home position sensor.	Replace the lower paper conveying belt home position sensor and check for correct operation.
		Loose connection of the lower paper conveying belt home position sensor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Incorrect insertion of the intermediate tray.	Check whether the intermediate tray catches are damaged.
		Defective finisher main PWB.	Replace the finisher main PWB and check for correct operation.
8140	**Optional document finisher main tray problem** • When the main tray is not detected by the main tray upper limit detection sensor or the main tray load detection sensor within 20 s from the moment it starts ascending. • During main tray descent, the main tray upper limit detection sensor or the main tray load detection sensor does not turn off within 500 ms after it turns on. • During main tray ascent, the main tray upper limit detection sensor or the main tray load detection sensor stays on for more than 2 s.	Loose connection of the main tray elevation motor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Malfunction of the main tray elevation motor.	Replace the main tray elevation motor and check for correct operation.
		Malfunction of the main tray upper limit detection sensor.	Replace the main tray upper limit detection sensor and check for correct operation.
		Loose connection of the main tray upper limit detection sensor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Malfunction of the main tray load detection sensor.	Replace the main tray load detection sensor and check for correct operation.
		Loose connection of the main tray load detection sensor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective finisher main PWB.	Replace the finisher main PWB and check for correct operation.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
8150	**Optional document finisher multi job tray problem** • When the multi job tray is not detected by the multi job tray upper limit detection sensor within 15 s from the moment it starts ascending. • During multi job tray descent, the multi job tray upper limit detection sensor does not turn off within 500 ms after it turns on.	Loose connection of the multi job tray elevation motor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Malfunction of the multi job tray elevation motor.	Replace the multi job tray elevation motor and check for correct operation.
		Malfunction of the multi job tray upper limit detection sensor.	Replace the multi job tray upper limit detection sensor and check for correct operation.
		Loose connection of the multi job tray upper limit detection sensor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective finisher main PWB.	Replace the finisher main PWB and check for correct operation.
8170	**Optional document finisher front upper side-registration guide problem** • During initialization, the front upper side-registration guide is not detected in the home position within 1.5 s after the guide returns to the home position. JAM87 is indicated the first time this problem occurs. If the problem occurs after initialization when the front cover is opened and closed, the problem is in the front upper side-registration guide. • When the front upper side-registration guide is operated from the home position, the front upper side-registration home position sensor does not turn off within 500 ms.	Loose connection of the front upper side-registration guide motor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Malfunction of the front upper side-registration guide motor.	Replace the front upper side-registration guide motor and check for correct operation.
		Malfunction of the front upper side-registration guide home position sensor.	Replace the front upper side-registration guide home position sensor and check for correct operation.
		Loose connection of the front upper side-registration guide home position sensor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective finisher main PWB.	Replace the finisher main PWB and check for correct operation.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
8180	**Optional document finisher rear upper side-registration guide problem** • During initialization, the rear upper side-registration guide is not detected in the home position within 1.5 s after the guide returns to the home position. JAM87 is indicated the first time this problem occurs. If the problem occurs after initialization when the front cover is opened and closed, the problem is in the rear upper side-registration guide. • When the rear upper side-registration guide is operated from the home position, the rear upper side-registration home position sensor does not turn off within 500 ms.	Loose connection of the rear upper side-registration guide motor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Malfunction of the rear upper side-registration guide motor.	Replace the rear upper side-registration guide motor and check for correct operation.
		Malfunction of the rear upper side-registration guide home position sensor.	Replace the rear upper side-registration guide home position sensor and check for correct operation.
		Loose connection of the rear upper side-registration guide home position sensor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective finisher main PWB.	Replace the finisher main PWB and check for correct operation.
8190	**Optional document finisher lower side-registration guide problem** • During initialization, the front/rear lower side-registration guides are not detected in the home position within 1.5 s after the guide returns to the home position. JAM87 is indicated the first time this problem occurs. If the problem occurs after initialization when the front cover is opened and closed, the problem is in the lower side-registration guide. • When the lower side-registration guide is operated from the home position, the lower side-registration home position sensor does not turn off within 500 ms.	Loose connection of the lower side-registration guide motor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Malfunction of the lower side-registration guide motor.	Replace the lower side-registration guide motor and check for correct operation.
		Malfunction of the lower side-registration guide home position sensor.	Replace the lower side-registration guide home position sensor and check for correct operation.
		Loose connection of the lower side-registration guide home position sensor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective finisher main PWB.	Replace the finisher main PWB and check for correct operation.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
8210	**Optional document finisher front stapler problem** • During initialization, the front stapler is not detected in the home position within 500 ms after the front stapler returns to the home position. JAM90 is indicated the first time this problem occurs. If the problem occurs after initialization when the front cover is opened and closed, the problem is in the front stapler. • When the front stapler is operated from the home position, the front stapler home position sensor does not turn off within 500 ms.	Loose connection of the front stapler motor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Malfunction of the front stapler motor.	Replace the front stapler motor and check for correct operation.
		Malfunction of the front stapler home position sensor.	Replace the front stapler home position sensor and check for correct operation.
		Loose connection of the front stapler home position sensor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective finisher main PWB.	Replace the finisher main PWB and check for correct operation.
8220	**Optional document finisher front clincher problem** • During initialization, the front clincher is not detected in the home position within 500 ms after the front clincher returns to the home position. JAM90 is indicated the first time this problem occurs. If the problem occurs after initialization when the front cover is opened and closed, the problem is in the front clincher. • When the front clincher is operated from the home position, the front clincher home position sensor does not turn off within 500 ms.	Loose connection of the front clincher motor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Malfunction of the front clincher motor.	Replace the front clincher motor and check for correct operation.
		Malfunction of the front clincher home position sensor.	Replace the front clincher home position sensor and check for correct operation.
		Loose connection of the front clincher home position sensor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective finisher main PWB.	Replace the finisher main PWB and check for correct operation.
8230	**Document finisher* rear stapler problem** • During initialization, the rear stapler is not detected in the home position within 500 ms after the rear stapler returns to the home position. JAM90 is indicated the first time this problem occurs. If the problem occurs after initialization when the front cover is opened and closed, the problem is in the rear stapler. • When the rear stapler is operated from the home position, the rear stapler home position sensor does not turn off within 500 ms.	Loose connection of the rear stapler motor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Malfunction of the rear stapler motor.	Replace the rear stapler motor and check for correct operation.
		Malfunction of the rear stapler home position sensor.	Replace the rear stapler home position sensor and check for correct operation.
		Loose connection of the rear stapler home position sensor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective finisher main PWB.	Replace the finisher main PWB and check for correct operation.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
8240	**Optional document finisher rear clincher problem** • During initialization, the rear clincher is not detected in the home position within 500 ms after the rear clincher returns to the home position. JAM90 is indicated the first time this problem occurs. If the problem occurs after initialization when the front cover is opened and closed, the problem is in the rear clincher. • When the rear clincher is operated from the home position, the rear clincher home position sensor does not turn off within 500 ms.	Loose connection of the rear clincher motor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Malfunction of the rear clincher motor.	Replace the rear clincher motor and check for correct operation.
		Malfunction of the rear clincher home position sensor.	Replace the rear clincher home position sensor and check for correct operation.
		Loose connection of the rear clincher home position sensor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective finisher main PWB.	Replace the finisher main PWB and check for correct operation.
8300	**Optional document finisher centerfold unit communication problem** • Communication with the centerfold unit is not possible although the connection is detected.	Loose connection of the centerfold unit set switch connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective centerfold unit set switch.	Replace the centerfold unit set switch and check for correct operation.
		Defective centerfold unit main PWB.	Replace the centerfold unit main PWB and check for correct operation.
		Defective finisher main PWB.	Replace the finisher main PWB and check for correct operation.
8310	**Optional document finisher centerfold unit side-registration guide problem** • During initialization, the front/rear side-registration guides are not detected in the home position within 600 ms after the guide returns to the home position. • When the side-registration guide is operated from the home position, the side-registration guide home position sensor does not turn off within 100 ms.	Loose connection of the side-registration guide motor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Malfunction of the side-registration guide motor.	Replace the side-registration guide motor and check for correct operation.
		Malfunction of the side-registration guide home position sensor.	Replace the side-registration guide home position sensor and check for correct operation.
		Loose connection of the side-registration guide home position sensor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective centerfold unit main PWB.	Replace the centerfold unit main PWB and check for correct operation.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
8320	**Optional document finisher centerfold unit centering plate problem** • During initialization, the centering plate is not detected in the home position when the centering plate returns to the home position.	Loose connection of the centering plate motor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Malfunction of the centering plate motor.	Replace the centering plate motor and check for correct operation.
		Malfunction of the centering plate home position sensor.	Replace the centering plate home position sensor and check for correct operation.
		Loose connection of the centering plate home position sensor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective centerfold unit main PWB.	Replace the centerfold unit main PWB and check for correct operation.
8330	**Optional document finisher centerfold blade problem** • During initialization, the centerfold blade is not detected in the home position within a specified period of time.	Loose connection of the centerfold blade motor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Malfunction of the centerfold blade motor.	Replace the centerfold blade motor and check for correct operation.
		Malfunction of the centerfold blade home position sensor.	Replace the centerfold blade home position sensor and check for correct operation.
		Loose connection of the centerfold blade home position sensor connector.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
		Defective centerfold unit main PWB.	Replace the centerfold unit main PWB and check for correct operation.

Code	Contents	Remarks	
		Causes	Check procedures/corrective measures
F0 **F000**	**Main controller PWB error** • The communication breakdown occurs between the main controller PWB and the operation panel PWB during the predetermined period in seconds.	Defective main controller PWB.	Replace the main controller PWB.
		Defective operator panel PWB.	Replace the operator panel PWB.
		Defective engine interface PWB.	Replace the engine interface PWB.
		Defective harness between operator panel PWB and engine interface PWB.	Check the continuity of the harness. Check if the connectors are securely inserted.
F010	**Code ROM checksum error** • Checksum for the system code ROM PWB that holds the system program is wrong.	Defective code ROM PWB.	Replace the code ROM PWB.
		Defective main controller PWB.	Replace the main controller PWB.
F020	**Memory check error** • Access to the expanding memory (DIMM) or RAM on the main controller PWB failed.	Defective main controller PWB.	Replace the main controller PWB.
		Defective expansion memory (DIMM).	Replace the expansion memory (DIMM).
F030	**Main controller PWB system error** • The error pertaining to the system occurred except the F0 (F010) condition.	Defective main controller PWB.	Replace the main controller PWB.
F040	**Main - Engine controller PWBs communication error** • The communication breakdown occurred between the main controller PWB and the engine controller PWB during the predetermined period in seconds.	Defective engine controller PWB.	Replace the engine controller PWB.
		Defective main controller PWB.	Replace the main controller PWB.
F050	**Engine checksum error** • Checksum result failed with the CPU and engine controller PWB.	Defective engine controller PWB.	Replace the engine controller PWB.
F060	**Engine RAM error** • Checksum failed with RAM of the engine controller PWB.	Defective engine controller PWB.	Replace the engine controller PWB.
F070	**Flash ROM checksum error** • Checksum failed with the flash ROM on the engine controller PWB.	Defective engine controller PWB.	Replace the engine controller PWB.

1-5-3 Electric problems

Problem	Causes	Check procedures/corrective measures
(1) The machine does not operate when the power switch is turned on.	No electricity at the power outlet.	Measure the input voltage.
	The power cord is not plugged in properly.	Check the contact between the power plug and the outlet.
	The front cover is not closed completely.	Check the front cover.
	Broken power cord.	Check for continuity. If none, replace the cord.
	Defective power switch.	Check for continuity across the contacts. If none, replace the power switch.
	Blown fuse in the power supply PWB.	Check for continuity. If none, remove the cause of blowing and replace the fuse.
	Defective front cover open/close switch.	Check for continuity across the contacts of each switch. If none, replace the switch.
	Defective power supply PWB.	With AC present, check for 3.3 V DC at YC5-6, 5-7, 5-8, 5-9 and 5 V DC at YC5-10, 5-11 and 24 V DC at YC5-14 on the power supply PWB. If none, replace the power supply PWB.
(2) The developing K motor/fuser motor does not operate (Self diagnostic code 2101).	Poor contact in the developing K motor/fuser motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken developing K motor/fuser motor gear.	Check visually and replace the developing K motor/fuser motor if necessary.
	Defective developing K motor/fuser motor.	Run maintenance item U030 and check if the developing K motor/fuser motor operates when YC7-5 on the engine controller PWB goes low. If not, replace the developing K motor/fuser motor.
	Defective engine controller PWB.	Run maintenance item U030 and check if YC7-5 on the engine controller PWB goes low. If not, replace the engine controller PWB.
(3) The developing MCY motor does not operate (Self diagnostic code 2102).	Poor contact in the developing MCY motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken developing MCY motor gear.	Check visually and replace the developing MCY motor if necessary.
	Defective developing MCY motor.	Run maintenance item U030 and check if the developing MCY motor operates when YC6-7 on the engine controller PWB goes low. If not, replace the developing MCY motor.
	Defective engine controller PWB.	Run maintenance item U030 and check if YC6-7 on the engine controller PWB goes low. If not, replace the engine controller PWB.
(4) The drum motor K does not operate (Self diagnostic code 2201).	Poor contact in the drum motor K connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken drum motor K gear.	Check visually and replace the drum motor K if necessary.
	Defective drum motor K.	Run maintenance item U030 and check if the drum motor K operates when YC5-29 on the engine controller PWB goes low. If not, replace the drum motor K.
	Defective engine controller PWB.	Run maintenance item U030 and check if YC5-29 on the engine controller PWB goes low. If not, replace the engine controller PWB.

Problem	Causes	Check procedures/corrective measures
(5) The drum motor C does not operate (Self diagnostic code 2202).	Poor contact in the drum motor C connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken drum motor C gear.	Check visually and replace the drum motor C if necessary.
	Defective drum motor C.	Run maintenance item U030 and check if the drum motor C operates when YC5-5 on the engine controller PWB goes low. If not, replace the drum motor C.
	Defective engine controller PWB.	Run maintenance item U030 and check if YC5-5 on the engine controller PWB goes low. If not, replace the engine controller PWB.
(6) The drum motor M does not operate (Self diagnostic code 2203).	Poor contact in the drum motor M connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken drum motor M gear.	Check visually and replace the drum motor M if necessary.
	Defective drum motor M.	Run maintenance item U030 and check if the drum motor M operates when YC5-13 on the engine controller PWB goes low. If not, replace the drum motor M.
	Defective engine controller PWB.	Run maintenance item U030 and check if YC5-13 on the engine controller PWB goes low. If not, replace the engine controller PWB.
(7) The drum motor Y does not operate (Self diagnostic code C2204).	Poor contact in the drum motor Y connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken drum motor Y gear.	Check visually and replace the drum motor Y if necessary.
	Defective drum motor Y.	Run maintenance item U030 and check if the drum motor Y operates when YC5-21 on the engine controller PWB goes low. If not, replace the drum motor Y.
	Defective engine controller PWB.	Run maintenance item U030 and check if YC5-21 on the engine controller PWB goes low. If not, replace the engine controller PWB.
(8) The paper feed motor does not operate (Self diagnostic code 2500).	Poor contact in the paper feed motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken paper feed motor gear.	Check visually and replace the paper feed motor if necessary.
	Defective paper feed motor.	Run maintenance item U030 and check if the paper feed motor operates when YC2-3 on the clutch PWB goes low. If not, replace the paper feed motor.
	Defective clutch PWB.	Run maintenance item U030 and check if YC2-3 on the clutch PWB goes low. If not, replace the clutch PWB.
(9) The toner motor K does not operate.	Poor contact in the toner motor K connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken toner motor K gear.	Check visually and replace the toner motor K if necessary.
	Defective toner motor K.	Run maintenance item U135 and check if the toner motor K operates when YC9-11 and YC9-12 on the engine controller PWB go low. If not, replace the toner motor K.
	Defective engine controller PWB.	Run maintenance item U135 and check if YC9-11 and YC9-12 on the engine controller PWB go low. If not, replace the engine controller PWB.

Problem	Causes	Check procedures/corrective measures
(10) The toner motor C does not operate.	Poor contact in the toner motor C connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken toner motor C gear.	Check visually and replace the toner motor C if necessary.
	Defective toner motor C.	Run maintenance item U135 and check if the toner motor C operates when YC10-11 and YC10-12 on the engine controller PWB go low. If not, replace the toner motor C.
	Defective engine controller PWB.	Run maintenance item U135 and check if YC10-11 and YC10-12 on the engine controller PWB go low. If not, replace the engine controller PWB.
(11) The toner motor M does not operate.	Poor contact in the toner motor M connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken toner motor M gear.	Check visually and replace the toner motor M if necessary.
	Defective toner motor M.	Run maintenance item U135 and check if the toner motor M operates when YC11-11 and YC11-12 on the engine controller PWB go low. If not, replace the toner motor M.
	Defective engine controller PWB.	Run maintenance item U135 and check if YC11-11 and YC11-12 on the engine controller PWB go low. If not, replace the engine controller PWB.
(12) The toner motor Y does not operate.	Poor contact in the toner motor Y connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken toner motor Y gear.	Check visually and replace the toner motor Y if necessary.
	Defective toner motor Y.	Run maintenance item U135 and check if the toner motor Y operates when YC12-11 and YC12-12 on the engine controller PWB go low. If not, replace the toner motor Y.
	Defective engine controller PWB.	Run maintenance item U135 and check if YC12-11 and YC12-12 on the engine controller PWB go low. If not, replace the engine controller PWB.
(13) The transfer motor does not operate.	Poor contact in the transfer motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken transfer motor gear.	Check visually and replace the transfer motor if necessary.
	Defective transfer motor.	Run maintenance item U030 and check if the transfer motor operates when YC4-2 on the engine controller PWB goes low. If not, replace the transfer motor.
	Defective engine controller PWB.	Run maintenance item U030 and check if YC4-2 on the engine controller PWB goes low. If not, replace the engine controller PWB.
(14) The transfer roller lift motor does not operate.	Poor contact in the transfer roller lift motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken transfer roller lift motor gear.	Check visually and replace the transfer roller lift motor if necessary.
	Defective transfer roller lift motor.	Run maintenance item U030 and check if the transfer roller lift motor operates when YC4-5 on the engine controller PWB goes low. If not, replace the transfer roller lift motor.
	Defective engine controller PWB.	Run maintenance item U030 and check if YC4-5 on the engine controller PWB goes low. If not, replace the engine controller PWB.

Problem	Causes	Check procedures/corrective measures
(15) The cassette lift motor does not operate.	Poor contact in the cassette lift motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken cassette lift motor gear.	Check visually and replace the cassette lift motor if necessary.
(16) The duplex side registration motor does not operate. (Optional duplex unit*) *Duplex unit is standard equipment for 120 V (U.S.A.) specifications.	Poor contact in the duplex side registration motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Broken duplex side registration motor gear.	Check visually and replace the duplex side registration motor if necessary.
	Defective duplex side registration motor.	Run maintenance item U052 and check if the duplex side registration motor operates when YC6-5, YC6-6, YC6-7 and YC6-8 on the duplex PWB go low. If not, replace the duplex side registration motor.
	Defective duplex PWB.	Run maintenance item U030 and check if YC6-5, YC6-6, YC6-7 and YC6-8 on the duplex PWB go low. If not, replace the engine controller PWB.
(17) The main charger fan motor does not operate.	Broken main charger fan motor coil.	Check for continuity across the coil. If none, replace the main charger fan motor.
	Poor contact in main charger fan motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
(18) The main cooling fan motor does not operate.	Broken main cooling fan motor coil.	Check for continuity across the coil. If none, replace the main cooling fan motor.
	Poor contact in main cooling fan motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
(19) The power supply PWB cooling fan motor does not operate.	Broken power supply PWB cooling fan motor coil.	Check for continuity across the coil. If none, replace the power supply PWB cooling fan motor.
	Poor contact in power supply PWB cooling fan motor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
(20) The conveying H clutch does not operate.	Broken conveying H clutch coil.	Check for continuity across the coil. If none, replace the conveying H clutch.
	Poor contact in the conveying H clutch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine controller PWB.	Run maintenance item U032 and check if YC23-13 on the engine controller PWB goes low. If not, replace the engine controller PWB.
	Defective clutch PWB.	Run maintenance item U032 and check if YC6-2 on the clutch PWB goes low. If not, replace the clutch PWB.

Problem	Causes	Check procedures/corrective measures
(21) The conveying L clutch does not operate.	Broken conveying L clutch coil.	Check for continuity across the coil. If none, replace the conveying L clutch.
	Poor contact in the conveying L clutch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine controller PWB.	Run maintenance item U032 and check if YC23-14 on the engine controller PWB goes low. If not, replace the engine controller PWB.
	Defective clutch PWB.	Run maintenance item U032 and check if YC7-2 on the clutch PWB goes low. If not, replace the clutch PWB.
(22) The primary paper feed H clutch does not operate.	Broken primary paper feed H clutch coil.	Check for continuity across the coil. If none, replace the primary paper feed H clutch.
	Poor contact in the primary paper feed H clutch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine controller PWB.	Run maintenance item U032 and check if YC23-11 on the engine controller PWB goes low. If not, replace the engine controller PWB.
	Defective clutch PWB.	Run maintenance item U032 and check if YC4-2 on the clutch PWB goes low. If not, replace the clutch PWB.
(23) The primary paper feed L clutch does not operate.	Broken primary paper feed L clutch coil.	Check for continuity across the coil. If none, replace the primary paper feed L clutch.
	Poor contact in the primary paper feed L clutch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine controller PWB.	Run maintenance item U032 and check if YC23-12 on the engine controller PWB goes low. If not, replace the engine controller PWB.
	Defective clutch PWB.	Run maintenance item U032 and check if YC5-2 on the clutch PWB goes low. If not, replace the clutch PWB.
(24) The paper feeder feed H clutch does not operate.	Broken paper feeder feed H clutch coil.	Check for continuity across the coil. If none, replace the paper feeder feed H clutch.
	Poor contact in the paper feeder feed H clutch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine controller PWB.	Run maintenance item U032 and check if YC30-1 on the engine controller PWB goes low. If not, replace the engine controller PWB.
(25) The paper feeder feed L clutch does not operate.	Broken paper feeder feed L clutch coil.	Check for continuity across the coil. If none, replace the paper feeder feed L clutch.
	Poor contact in the paper feeder feed L clutch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine controller PWB.	Run maintenance item U032 and check if YC23-10 on the engine controller PWB goes low. If not, replace the engine controller PWB.
	Defective clutch PWB.	Run maintenance item U032 and check if YC3-2 on the clutch PWB goes low. If not, replace the clutch PWB.

Problem	Causes	Check procedures/corrective measures
(26) The MP tray feed clutch does not operate.	Broken MP tray feed clutch coil.	Check for continuity across the coil. If none, replace the MP tray feed clutch.
	Poor contact in the MP tray feed clutch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine controller PWB.	Run maintenance item U032 and check if YC13-1 on the engine controller PWB goes low. If not, replace the engine controller PWB.
	Defective MP tray PWB.	Run maintenance item U032 and check if YC2-2 on the MP tray PWB goes low. If not, replace the MP tray PWB.
(27) The registration clutch does not operate.	Broken registration clutch coil.	Check for continuity across the coil. If none, replace the registration clutch.
	Poor contact in the registration clutch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine controller PWB.	Run maintenance item U032 and check if YC23-15 on the engine controller PWB goes low. If not, replace the engine controller PWB.
	Defective clutch PWB.	Run maintenance item U032 and check if YC8-2 on the clutch PWB goes low. If not, replace the clutch PWB.
(28) The duplex feed clutch does not operate. (Optional duplex unit*) *Duplex unit is standard equipment for 120 V (U.S.A.) specifications.	Broken duplex feed clutch coil.	Check for continuity across the coil. If none, replace the duplex feed clutch.
	Poor contact in the duplex feed clutch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine controller PWB.	Run maintenance item U032 and check if YC29-13 on the engine controller PWB goes low. If not, replace the engine controller PWB.
(29) The fuser clutch does not operate.	Broken fuser clutch coil.	Check for continuity across the coil. If none, replace the fuser clutch.
	Poor contact in the fuser clutch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
(30) The lift plate up/down solenoid does not operate.	Broken lift plate up/down solenoid coil.	Check for continuity across the coil. If none, replace the lift plate up/down solenoid.
	Poor contact in the lift plate up/down solenoid connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine controller PWB.	Run maintenance item U033 and check if YC13-2 on the engine controller PWB goes low. If not, replace the engine controller PWB.
	Defective MP tray PWB.	Run maintenance item U033 and check if YC3-2 on the MP tray PWB goes low. If not, replace the MP tray PWB.
(31) The face-up exit solenoid does not operate.	Broken face-up exit solenoid coil.	Check for continuity across the coil. If none, replace the face-up exit solenoid.
	Poor contact in the face-up exit solenoid connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine controller PWB.	Run maintenance item U033 and check if YC21-16 and YC21-17 on the engine controller PWB go low. If not, replace the engine controller PWB.

Problem	Causes	Check procedures/corrective measures
(31) The face-up exit solenoid does not operate.	Defective bias high voltage PWB.	Run maintenance item U033 and check if YC2-7 and YC2-9 on the bias high voltage PWB go low. If not, replace the bias high voltage PWB.
(32) The duplex exit solenoid does not operate.	Broken duplex exit solenoid coil.	Check for continuity across the coil. If none, replace the duplex exit solenoid.
	Poor contact in the duplex exit solenoid connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine controller PWB.	Run maintenance item U033 and check if YC21-14 and YC21-15 on the engine controller PWB go low. If not, replace the engine controller PWB.
	Defective bias high voltage PWB.	Run maintenance item U033 and check if YC2-4 and YC2-6 on the bias high voltage PWB goes low. If not, replace the bias high voltage PWB.
(33) The duplex tapping solenoid does not operate. (Optional duplex unit*) *Duplex unit is standard equipment for 120 V (U.S.A.) specifications.	Broken duplex tapping solenoid coil.	Check for continuity across the coil. If none, replace the duplex tapping solenoid.
	Poor contact in the duplex tapping solenoid connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine controller PWB.	Run maintenance item U033 and check if YC29-6 on the engine controller PWB goes low. If not, replace the engine controller PWB.
(34) The duplex forwarding solenoid does not operate. (Optional duplex unit*) *Duplex unit is standard equipment for 120 V (U.S.A.) specifications.	Broken duplex forwarding solenoid coil.	Check for continuity across the coil. If none, replace the duplex forwarding solenoid.
	Poor contact in the duplex forwarding solenoid connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective engine controller PWB.	Run maintenance item U033 and check if YC29-7 on the engine controller PWB goes low. If not, replace the engine controller PWB.
(35) The eraser lamp K does not turn on.	Poor contact in the eraser lamp K connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective eraser lamp K.	Check for continuity. If none, replace the eraser lamp K.
	Defective engine controller PWB.	If the eraser lamp K turns on when YC9-5 on the engine controller PWB is held low, replace the engine controller PWB.
(36) The eraser lamp C does not turn on.	Poor contact in the eraser lamp C connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective eraser lamp C.	Check for continuity. If none, replace the eraser lamp C.
	Defective engine controller PWB.	If the eraser lamp C turns on when YC10-5 on the engine controller PWB is held low, replace the engine controller PWB.
(37) The eraser lamp M does not turn on.	Poor contact in the eraser lamp M connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective eraser lamp M.	Check for continuity. If none, replace the eraser lamp M.
	Defective engine controller PWB.	If the eraser lamp M turns on when YC11-5 on the engine controller PWB is held low, replace the engine controller PWB.

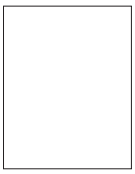
Problem	Causes	Check procedures/corrective measures
(38) The eraser lamp Y does not turn on.	Poor contact in the eraser lamp Y connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective eraser lamp Y.	Check for continuity. If none, replace the eraser lamp Y.
	Defective engine controller PWB.	If the eraser lamp Y turns on when YC12-5 on the engine controller PWB is held low, replace the engine controller PWB.
(39) The fuser heater lamp does not turn on.	Broken wire in upper or lower fuser heater lamp.	Check for continuity across each heater lamp. If none, replace the upper or lower fuser heater lamp.
	Upper or lower fuser thermostat triggered.	Check for continuity across thermostat. If none, remove the cause and replace the upper or lower fuser thermostat.
(40) The fuser heater lamp does not turn off.	Broken upper or lower fuser thermistor wire.	Measure the resistance. If it is $\infty\Omega$, replace the upper or lower fuser thermistor.
	Dirty sensor part of the upper or lower fuser thermistor.	Check visually and clean the upper or lower fuser thermistor sensor parts.
(41) No main charging.	Poor insertion main charger unit.	See page 1-5-38.
	Broken main charger wire.	
	Faulty connection of connector of engine controller PWB.	
	Faulty connection of connector of main high voltage PWB and high voltage output terminal (tab).	
	Defective main high voltage PWB.	
	Defective engine controller PWB.	
(42) No developing bias is output.	Faulty connection of connector of engine controller PWB.	See page 1-5-40.
	Faulty connection of connector of bias high voltage PWB and high voltage output terminal (tab).	
	Defective engine controller PWB.	
	Defective bias high voltage PWB.	

Problem	Causes	Check procedures/corrective measures
(43) No transfer bias is output.	Faulty connection of connector of engine controller PWB.	See page 1-5-37.
	Faulty connection of connector of transfer relay PWB.	
	Faulty connection of connector of transfer high voltage PWB and high voltage output terminal (tab).	
	Defective engine controller PWB.	
	Defective transfer high voltage PWB.	
(44) The message requesting paper to be loaded is shown when paper is present in the printer cassette.	Poor contact in the cassette paper sensor connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective cassette paper sensor.	Check if YC15-5 on the engine controller PWB goes low when the cassette paper sensor is turned on with 5 V DC present at YC15-6 on the engine controller PWB. If not, replace the cassette paper sensor.
(45) The message requesting paper to be loaded is shown when paper is present on the MP MP tray.	Poor contact in the MP tray PWB connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective MP tray PWB.	If the level of YC1-7 on the MP tray PWB always goes high, replace the MP tray PWB.
(46) The size of paper in the cassette is not displayed correctly.	Poor contact in the cassette length size switch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective cassette length size switch.	Check if YC17-1 on the engine controller PWB goes low when the cassette length size switch is turned on. If not, replace the cassette length size switch.
	Poor contact in the cassette width size switch connector terminals.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective cassette width size switch.	Check if the levels of YC16-1, YC16-2 and YC16-3 on the engine controller PWB change alternately when the width guide in the cassette is moved. If not, replace the cassette width size switch.

Problem	Causes	Check procedures/corrective measures
(47) A paper jam in the paper feed, paper conveying or fuser section is indicated when the power switch is turned on.	A piece of paper torn from copy paper is caught around upper/lower feed sensor, registration sensor, fuser conveying sensor, duplex conveying sensor, face-down exit sensor or face-up exit sensor.	Check and remove if any.
	Defective upper feed sensor.	Run maintenance item U031 and turn the upper feed sensor on and off manually. Replace the upper feed sensor if indication of the corresponding sensor on the touch panel is not displayed in reverse.
	Defective lower feed sensor.	Run maintenance item U031 and turn the lower feed sensor on and off manually. Replace the lower feed sensor if indication of the corresponding sensor on the touch panel is not displayed in reverse.
	Defective registration sensor.	Run maintenance item U031 and turn the registration sensor on and off manually. Replace the registration sensor if indication of the corresponding sensor on the touch panel is not displayed in reverse.
	Defective fuser conveying sensor.	Run maintenance item U031 and turn the fuser conveying sensor on and off manually. Replace the fuser conveying sensor if indication of the corresponding sensor on the touch panel is not displayed in reverse.
	Defective duplex conveying sensor.	Run maintenance item U031 and turn the duplex conveying sensor on and off manually. Replace the duplex conveying sensor if indication of the corresponding sensor on the touch panel is not displayed in reverse.
	Defective face-up exit sensor.	Run maintenance item U031 and turn the face-up exit sensor on and off manually. Replace the face-up exit sensor if indication of the corresponding sensor on the touch panel is not displayed in reverse.
(48) The message requesting cover to be closed is displayed when the front cover is closed.	Poor contact in the connector terminals of front cover open/close switch.	Reinsert the connector. Also check for continuity within the connector cable. If none, remedy or replace the cable.
	Defective front cover open/close switch.	Check for continuity across each switch. If there is no continuity when the front cover open/close switch is on, replace it.
(49) Others.	Wiring is broken, shorted or makes poor contact.	Check for continuity. If none, repair.
	Noise.	Locate the source of noise and remove.

1-5-4 Image formation problems

(1) No image appears (entirely white).

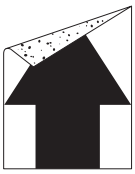


See page 1-5-37

(2) No image appears (entirely black).

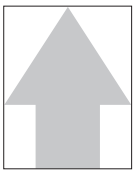
See page 1-5-38

(3) Dirty on the back side.



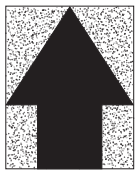
See page 1-5-38

(4) Image is too light.



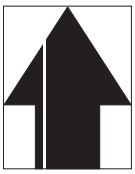
See page 1-5-39

(5) The background is colored.



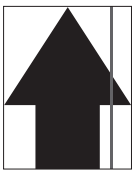
See page 1-5-40

(6) White streaks are printed vertically.



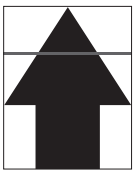
See page 1-5-41

(7) Black streaks are printed vertically.



See page 1-5-42

(8) Streaks are printed horizontally.

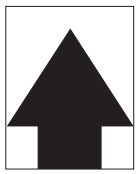


See page 1-5-42

(9) Spots are printed.

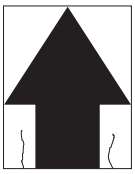
See page 1-5-43

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



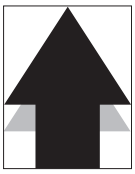
See page 1-5-43

(11) Paper creases.



See page 1-5-44

(12) Offset occurs.

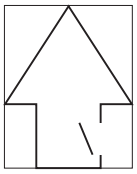


See page 1-5-44

(13) Image is partly missing.

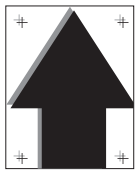
See page 1-5-44

(14) Fuser is poor.



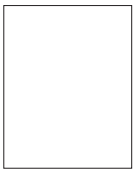
See page 1-5-45

(15) Colors are printed offset to each other.



See page 1-5-45

(1) No image appears (entirely white).



Causes
1. The LED print head has not done functioning.
2. Defective developing bias output.
3. Defective transfer bias output.
4. Defective driving system of the developer unit of the process unit.

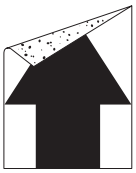
Causes	Check procedures/corrective measures
1. The LED print head has not done functioning.	
A. Faulty connection of connectors between the main controller PWB and the engine interface PWB.	Check the connection between the connector YC6 of the main controller PWB and the connector YC6 of the engine interface PWB, and repair them if any problem is found. (Do not attempt to disconnect/connect the connector while power is on.)
B. Faulty connection of connector of engine interface PWB.	Check the connection status of connectors YC2 and YC3 of the engine interface PWB. Adjust them if any problem is found.
C. Faulty connection of connector of LPH drive PWB.	Check the connection status of connectors YC5, YC6, YC7, YC8, YC9, YC10, YC11 and YC12 of the LPH drive PWB. Adjust them if any problem is found.
D. Defective LPH drive PWB.	Replace the LPH drive PWB (see page 1-6-31).
E. Defective main controller PWB.	Replace the main controller PWB. (see page 1-6-25).
2. Defective developing bias output.	
A. Faulty connection of connector of engine controller PWB.	Check the connection status of connector YC21 of the engine controller PWB. Adjust them if any problem is found.
B. Faulty connection of connector of bias high voltage PWB and high voltage output terminal (tab).	Check the connection status of connector YC1 of the bias high voltage PWB and each high voltage output terminal (tab). Adjust them if any problem is found.
C. Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
D. Defective bias high voltage PWB.	Replace the bias high voltage PWB (see page 1-6-30).
3. Defective transfer bias output.	
A. Faulty connection of connector of engine controller PWB.	Check the connection status of connector YC22 of the engine controller PWB. Adjust them if any problem is found.
B. Faulty connection of connector of transfer relay PWB.	Check the connection status of connectors YC1 and YC3 of the transfer relay PWB. Adjust them if any problem is found.
C. Faulty connection of connector of transfer high voltage PWB and high voltage output terminal (tab).	Check the connection status of connector YC1 of the transfer high voltage PWB and each high voltage output terminal (tab). Adjust them if any problem is found.
D. Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
E. Defective transfer high voltage PWB.	Replace the transfer unit (see page 1-6-12).
4. Defective driving system of the developer unit of the process unit.	Replace the developer unit of the process unit (see page 1-6-13).

(2) No image appears (entirely black).

Causes
1. No main charging.
2. Defective LPH drive PWB.

Causes	Check procedures/corrective measures
1. No main charging.	
A. Poor insertion main charger unit.	Reinstall the main charger unit.
B. Broken main charger wire.	Replace the main charger unit.
C. Faulty connection of connector of engine controller PWB.	Check the connection status of connector YC20 of the engine controller PWB. Adjust them if any problem is found.
D. Faulty connection of connector of main high voltage PWB and high voltage output terminal (tab).	Check the connection status of connector YC1 of the main high voltage PWB and each high voltage output terminal (tab). Adjust them if any problem is found.
E. Defective main high voltage PWB.	Replace the main high voltage PWB (see page 1-6-29).
F. Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
2. Defective LPH drive PWB.	Replace the LPH drive PWB (see page 1-6-31).

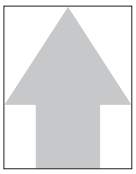
(3) Dirty on the top edge.



Causes
1. Faulty transfer belt cleaning (adsorption roller high voltage output).
2. Dirty paper conveying path of the paper feed unit.
3. Dirty upper and lower fuser rollers.

Causes	Check procedures/corrective measures
1. Faulty transfer belt cleaning (adsorption roller high voltage output).	Replace the transfer unit (see page 1-6-12).
2. Dirty paper conveying path of the paper feed unit.	Clean the paper conveying path of the paper feed unit.
3. Dirty upper and lower fuser rollers.	Clean the upper and lower fuser rollers.

(4) Image is too light.

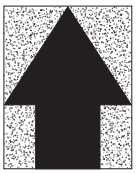


Causes

1. The mode of printing does not conform to the image data.
2. Defective developing bias output.
3. Dirty drum.
4. Defective color calibration.
5. Dirty SELFOC lens of LED print head.
6. Software version of the engine controller PWB is old.

Causes	Check procedures/corrective measures
1. The mode of printing does not conform to the image data.	The print density may be deteriorated if image data including large black solid areas or with a high printing ratio is printed continuously. Perform the high density mode of service mode, and change into a proper setting (see page 1-4-9).
2. Defective developing bias output.	
A. Faulty developer unit of the process unit.	Check the four colors of image by using the test print of service mode. If the defect appears on a particular color, replace the developer unit of process unit for that color (see pages 1-4-8 and 1-6-13).
B. Defective bias high voltage PWB.	Replace the bias high voltage PWB (see page 1-6-30).
C. Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
D. Defective main controller PWB.	Replace the main controller PWB. (see page 1-6-25).
3. Dirty drum.	Perform the drum surface refreshing. (see page 1-4-11).
4. Defective color calibration.	
A. Dirty sensing surface of the toner ID sensor 1 and 2.	Clean the sensing surface of the toner ID sensor 1 and 2.
B. The printer environment considerably changed since an automatic calibration was made.	Perform the color calibration of service mode. (see page 1-4-7).
5. Dirty SELFOC lens of LED print head.	Clean the SELFOC lens of LED print head by using LED cleaner.
6. Software version of the engine controller PWB is old.	Check the version of the engine software and upgrade the software to the latest version if the version is older than 2BF2937H (Ver.162-0).

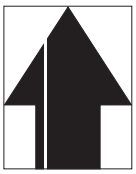
(5) The background is colored.



Causes
1. Defective developing bias output.
2. Defective color calibration.
3. Defective transfer adsorption roller bias output.
4. Poor insertion main charger unit.

Causes	Check procedures/corrective measures
1. Defective developing bias output.	
A. Defective process unit.	Check the four colors of image by using the test print of service mode. If the defect appears on a particular color, replace the process unit for that color. See pages (see pages 1-4-8 and 1-6-13).
B. Defective bias high voltage PWB.	Replace the bias high voltage PWB (see page 1-6-30).
C. Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
D. Defective main controller PWB.	Replace the main controller PWB. (see page 1-6-25).
2. Defective color calibration.	
A. Dirty sensing surface of the toner ID sensor 1 and 2.	Clean the sensing surface of the toner ID sensor 1 and 2.
B. The printer environment considerably changed since an automatic calibration was made.	Perform the color calibration of service mode (see page 1-4-7).
3. Defective transfer adsorption roller bias output.	Replace the transfer unit (see page 1-6-12).
4. Poor insertion main charger unit.	Reinstall the main charger unit.

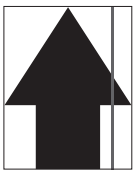
(6) A white line appears longitudinally.



Causes
1. Defective LED print head output.
2. Defective main charging output.
3. Foreign object in the developer unit of a process unit.
4. Adhesion of soiling to transfer roller.
5. Adhesion to lower part of the process unit.
6. Defective main charger unit.

Causes	Check procedures/corrective measures
1. Defective LED print head output.	
A. Dirty SELFOC lens of LED print head.	Clean the SELFOC lens of LED print head by using LED cleaner.
B. Focus is lost with the LED print head.	Check the four colors of image by using the test print of service mode. If the defect appears on a particular color, adjust the focus of the LED print head for that color (see pages 1-4-8 and 1-6-44).
C. Defective LED print head.	Check the four colors of image by using the test print of service mode. If the defect appears on a particular color, replace the LED print head for that color (see pages 1-4-8 and 1-6-41).
2. Defective main charging output.	
A. Adhesion of oxide to main charger wire.	Clean the main charger wire by using main charger wire cleaner.
B. Dirty main charger grid.	Clean the main charger wire by using main charger grid cleaner.
C. Dirty main charger shield.	Replace the main charger unit.
3. Foreign object in the developer unit of a process unit.	Check the four colors of image by using the test print of service mode. If the defect appears on a particular color, replace the developer unit of process unit for that color (see pages 1-4-8 and 1-6-13).
4. Adhesion of soiling to transfer roller.	Replace the transfer unit (see page 1-6-12).
5. Adhesion to lower part of the process unit.	Check the image. If the white line appears on a particular color, check and clean the process unit for that color.
6. Defective main charger unit.	Replace the main charger unit (see page 1-6-13).

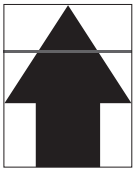
(7) A black line appears longitudinally.



Causes
1. Dirty main charger wire.
2. Dirty or flawed drum.
3. Deformed or worn cleaning blade in the drum unit of a process unit.
4. Defective adsorption roller.
5. Worn transfer belt.

Causes	Check procedures/corrective measures
1. Dirty main charger wire.	Clean the main charger wire by using main charger wire cleaner.
2. Dirty or flawed drum.	
A. Dirty drum.	Perform the drum surface refreshing (see page 1-4-11).
B. Flawed drum.	Replace the process unit (see page 1-6-13).
3. Deformed or worn cleaning blade in the drum unit of a process unit.	Replace the process unit (see page 1-6-13).
4. Defective adsorption roller.	Replace the transfer unit (see page 1-6-12).
5. Worn transfer belt.	Replace the transfer unit (see page 1-6-12).

(8) A black line appears laterally.



Causes
1. Poor contact of output terminal of main charger unit.
2. Poor contact of grounding terminal of process unit.
3. Poor contact of developing bias terminal of process unit.

Causes	Check procedures/corrective measures
1. Poor contact of output terminal of main charger unit.	Replace the main charger unit (see page 1-6-13).
2. Poor contact of grounding terminal of process unit.	Replace the process unit (see page 1-6-13).
3. Poor contact of developing bias terminal of process unit.	Replace the process unit (see page 1-6-13).

(9) Black dots appear on the image.

Causes
1. Dirty or flawed drum.
2. Deformed or worn cleaning blade in the drum unit of a process unit.
3. Defective adsorption roller of the transfer unit.
4. Flawed developing roller in the developing unit of a process unit.
5. Dirty upper and lower fuser rollers.

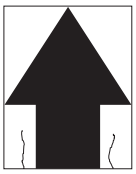
Causes	Check procedures/corrective measures
1. Dirty or flawed drum.	Perform the drum surface refreshing (see page 1-4-11).
2. Deformed or worn cleaning blade in the drum unit a process unit.	Replace the process unit (see page 1-6-13).
3. Defective adsorption roller of the transfer unit.	Replace the transfer unit (see page 1-6-12).
4. Flawed developing roller in the developer unit of a process unit.	Replace the developer unit of a process unit (see page 1-6-13).
5. Dirty upper and lower fuser rollers.	Clean the upper and lower fuser rollers.

(10) The leading edge of the image is consistently misaligned with the original.

Causes
1. Registration clutch operating incorrectly.
2. Misadjusted the amount of slack in the paper.
3. Defective engine controller PWB.
4. Defective main controller PWB.
5. Poor insertion paper feed unit.

Causes	Check procedures/corrective measures
1. Registration clutch operating incorrectly.	Check the installation of the registration clutch. If it operates incorrectly, replace it.
2. Misadjusted the amount of slack in the paper.	Run maintenance mode U051 to readjust the amount of slack in the paper.
3. Defective engine controller PWB.	Replace the engine controller PWB (see page 1-6-26).
4. Defective main controller PWB.	Replace the main controller PWB (see page 1-6-25).
5. Poor insertion paper feed unit.	Reinstall the paper feed unit.

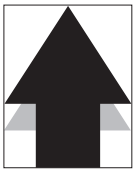
(11) Paper creases.



Causes
1. Paper curled.
2. Paper damp.

Causes	Check procedures/corrective measures
1. Paper curled.	Check the paper storage conditions, replace the paper.
2. Paper damp.	Check the paper storage conditions, replace the paper.

(12) Offset occurs.



Causes
1. Deformed or worn cleaning blade in the drum unit of a process unit.
2. Wrong types of paper.

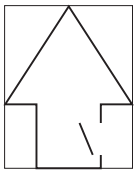
Causes	Check procedures/corrective measures
1. Deformed or worn cleaning blade in the drum unit of a process unit.	Replace the process unit (see page 1-6-13).
2. Wrong types of paper.	Check if the paper meets specifications. Replace paper.

(13) Image is partly missing.

Causes
1. Paper damp.
2. Paper creased.
3. Drum condensation.
4. Flawed drum.
5. Flawed transfer belt.
6. Software version of the engine controller PWB is old.

Causes	Check procedures/corrective measures
1. Paper damp.	Check the paper storage conditions, replace the paper.
2. Paper creased.	Replace the paper.
3. Drum condensation.	Perform the drum surface refreshing (see page 1-4-11).
4. Flawed drum.	Replace the process unit (see page 1-6-13).
5. Flawed transfer belt.	Replace the transfer unit (see page 1-6-12).
6. Software version of the engine controller PWB is old.	Check the version of the engine software and upgrade the software to the latest version if the version is older than 2BF2937H (Ver.162-0).

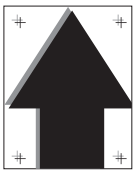
(14) Fuser is poor.



Causes
1. Wrong types of paper.
2. Defective pressure for the lower fuser roller.
3. Flawed upper or lower fuser roller.

Causes	Check procedures/corrective measures
1. Wrong types of paper.	Check if the paper meets specifications, replace paper.
2. Defective pressure for the lower fuser roller.	Check the fuser pressure springs.
3. Flawed upper or lower fuser roller.	Replace the upper fuser roller or lower fuser roller (see page 1-6-18).

(15) Colors are printed offset to each other.



Causes
1. The LED print head is not properly seated in its position.

Causes	Check procedures/corrective measures
1. The LED print head is not properly seated in its position.	Run maintenance mode U410 to operate the color deviation adjustment (see page 1-4-36).

1-5-5 Mechanical problems

Problem	Causes/check procedures	Corrective measures
(1) No primary paper feed.	Check if the surfaces of the following rollers or pulleys are dirty with paper powder: lower feed pulley, feed B pulley, forwarding roller, paper feed roller, feed B roller, MP tray paper feed roller and MP tray retard roller.	Clean with isopropyl alcohol.
	Check if the lower feed pulley or feed B pulley is deformed.	Check visually and replace any deformed pulleys.
	Electrical problem with the following electromagnetic clutches: primary paper feed H clutch, primary paper feed L clutch, MP tray feed clutch, paper feeder feed H clutch and paper feeder feed L clutch.	See pages 1-5-30 and 1-5-31.
(2) No secondary paper feed.	Check if the surfaces of the upper and lower registration rollers are dirty with paper powder.	Clean with isopropyl alcohol.
	Electrical problem with the following electromagnetic clutches: conveying H clutch, conveying L clutch and registration clutch.	See pages 1-5-29 and 1-5-30.
(3) Skewed paper feed.	Width guide in a cassette installed incorrectly.	Check the width guide visually and correct or replace if necessary.
	Deformed width guide in a cassette.	Repair or replace if necessary.
	Check if a pressure spring along the paper conveying path is deformed or out of place.	Repair or replace.
(4) Multiple sheets of paper are fed at one time.	Check if the lower feed pulley is worn.	Replace the lower feed pulley if it is worn.
	Check if the paper is curled.	Change the paper.
(5) Paper jams.	Check if the paper is excessively curled.	Change the paper.
	Deformed guides along the paper conveying path.	Repair or replace if necessary.
	Check if the contact between the upper and lower registration rollers is correct.	Check visually and remedy if necessary.
	Check if the upper and lower fuser roller is extremely dirty or deformed.	Clean or replace the upper and lower fuser roller.
	Check if the contact between the exit roller A and face-down exit pulley is correct.	Check visually and remedy if necessary.
(6) Toner drops on the paper conveying path.	Check if the process unit is extremely dirty.	Clean the process unit.
	Deformed the drum unit of a process unit.	Replace the drum unit. See page 1-6-15.
(7) Abnormal noise is heard.	Check if the pulleys, rollers and gears operate smoothly.	Grease the bearings and gears.
	Check if the following electromagnetic clutches are installed correctly: primary paper feed H clutch, primary paper feed L clutch, registration clutch, MP tray feed clutch, paper feeder feed H clutch, paper feeder feed L clutch, conveying H clutch and conveying L clutch.	Check visually and remedy if necessary.

1-6-1 Precautions for assembly and disassembly

(1) Precautions

Be sure to turn the power switch off and disconnect the power plug 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.
Use only the specified parts to replace the fuser thermostat. Never substitute electric wires, as the printer may be seriously damaged.
Use the following circuit testers when measuring voltages:

- Hioki 3200
- Sanwa MD-180C
- Sanwa YX-360TR
- Beckman TECH300
- Beckman DM45
- Beckman 330 (Capable of measuring RMS values.)
- Beckman 3030 (Capable of measuring RMS values.)
- Beckman DM850 (Capable of measuring RMS values.)
- Fluke 8060A (Capable of measuring RMS values.)
- Arlec DMM1050
- Arlec YF1030C

1-6-2 Outer covers

(1) Detaching and refitting the top cover

<Procedure>

1. Open the front cover.
2. Remove the hook and then remove the operation panel.
3. Remove one connector and then remove the operation panel.

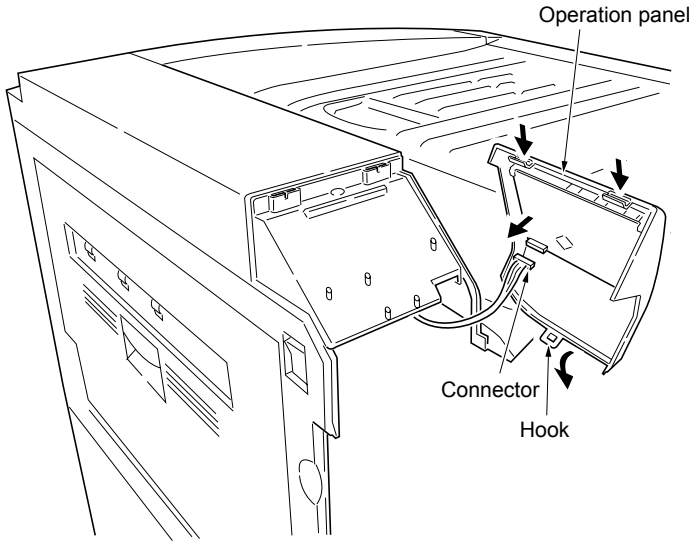


Figure 1-6-1

4. Remove one screw and then remove the left top cover.

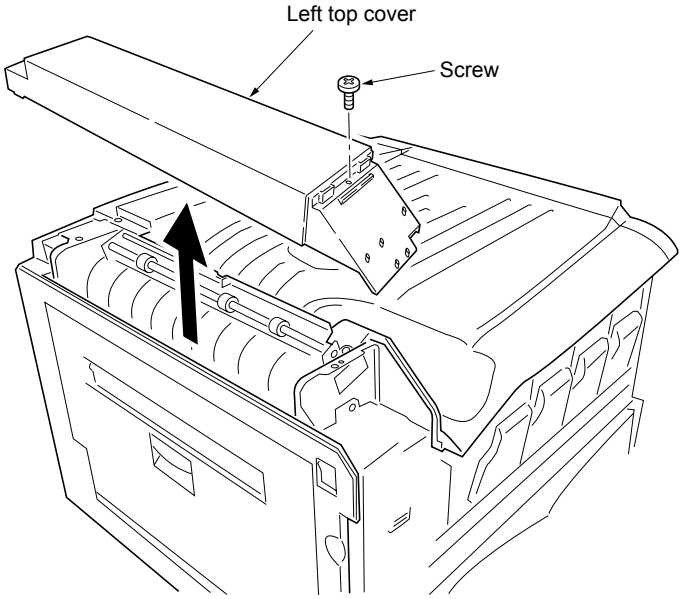


Figure 1-6-2

5. Push the lever and remove the ozone filter cover.

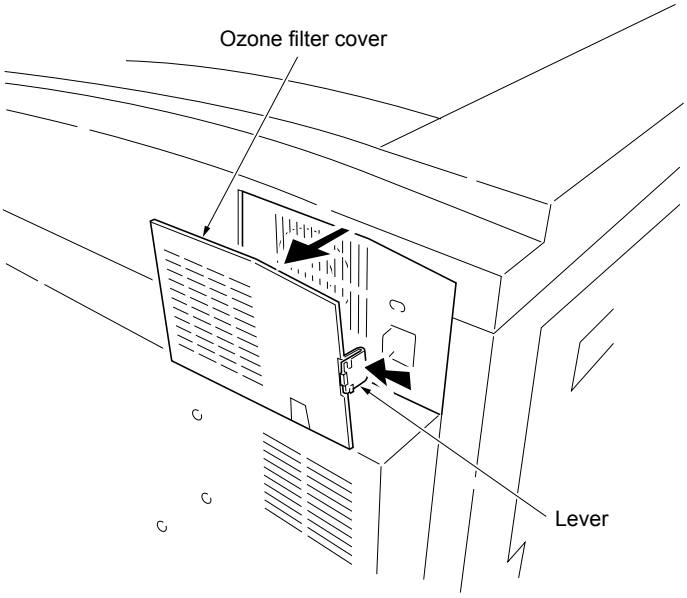


Figure 1-6-3

6. Push the two levers and remove the filter.

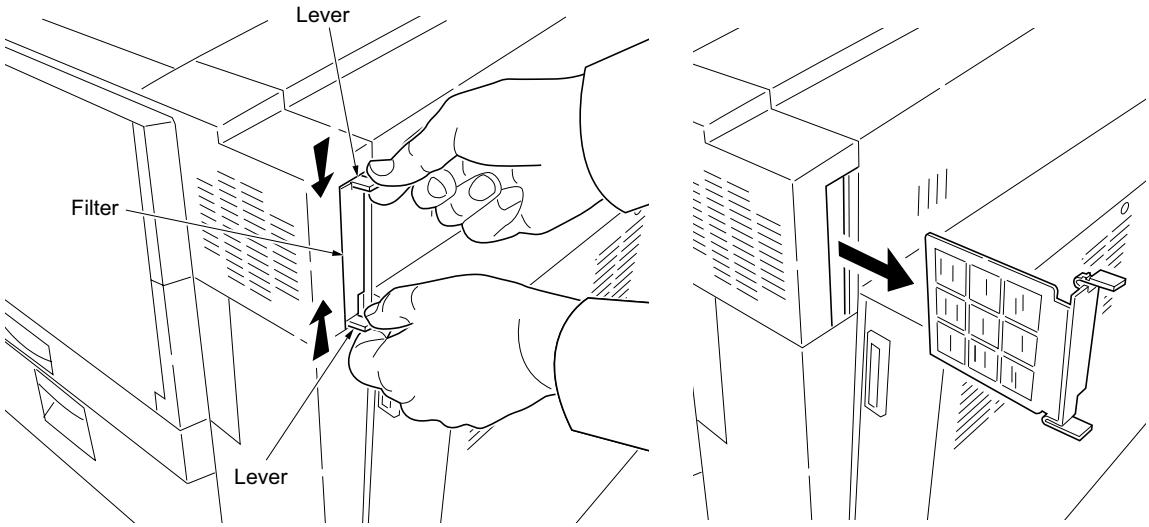


Figure 1-6-4

7. Open MP tray.
8. Remove four screws and then remove the top cover.

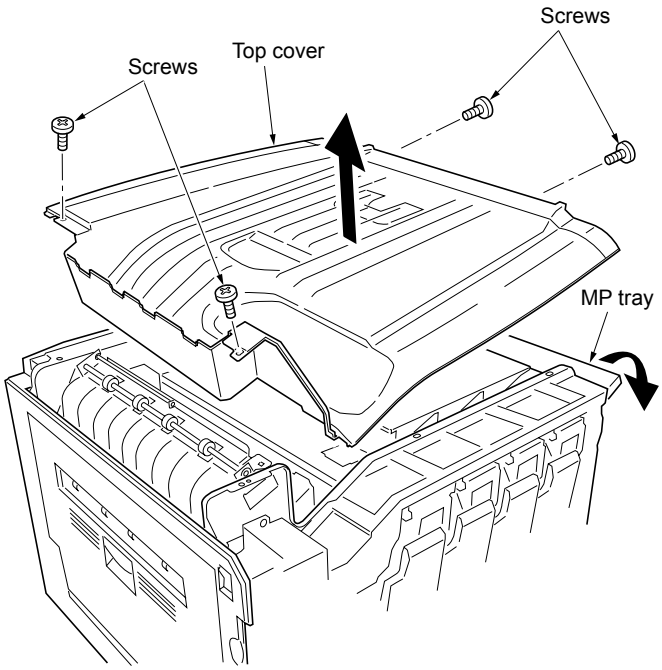


Figure 1-6-5

Replacing the filter

Replace the filter according to the following procedure when replacing the black toner container.

1. Push the two levers and remove the filter.
   (See page 1-6-4, step 6.)

2. Insert a new filter until the claw of a lever starts.

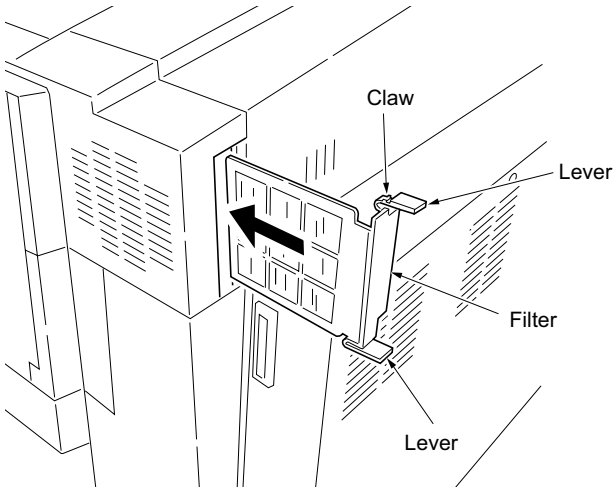


Figure 1-6-5-1

Check the condition of filter once a month and clean the filter if it is dirty.

(2) Detaching and refitting the rear cover

<Procedure>

1. Remove eleven screws and then remove the rear cover.

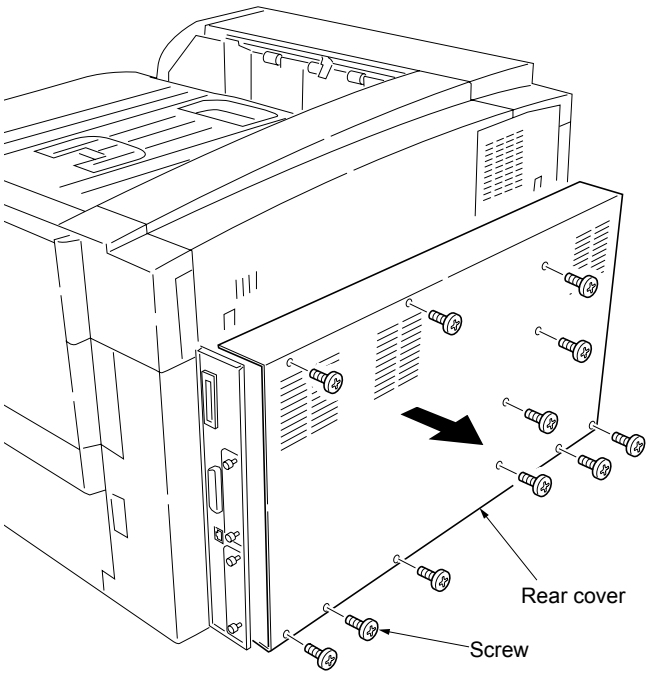


Figure 1-6-6

(3) Detaching and refitting the left cover (left cover assembly)

<Procedure>

1. Release two hooks from the hook holes and remove the left cover (left cover assembly).

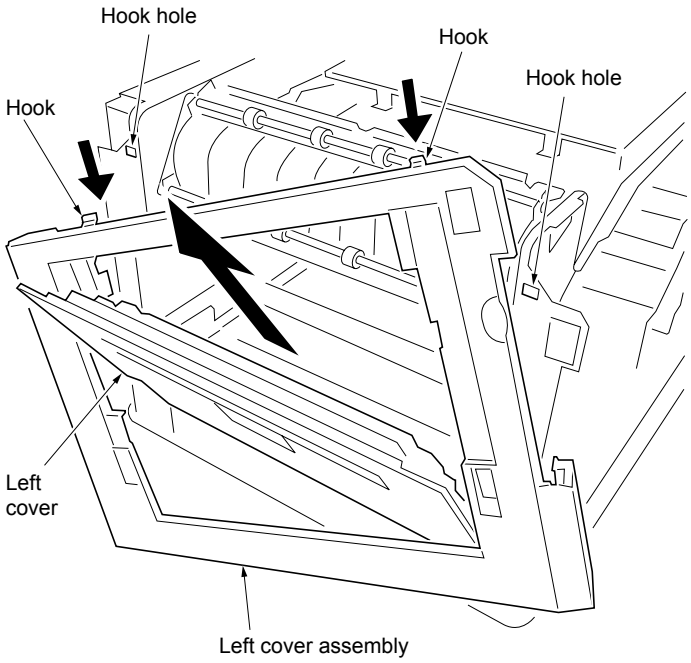


Figure 1-6-7

2. Remove one screw and then remove one pin.
3. Remove one connector.
4. Remove the left cover.

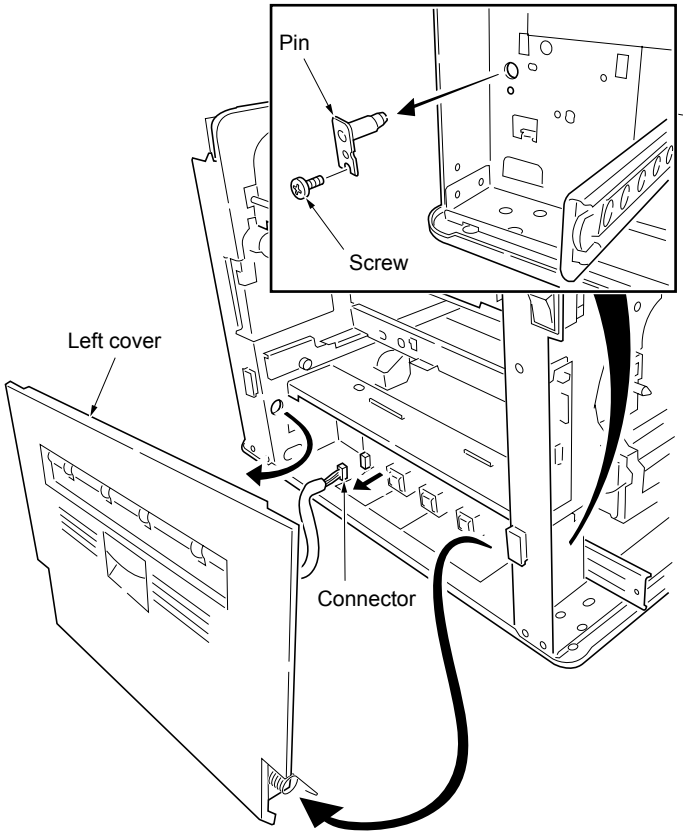


Figure 1-6-8

1-6-3 Primary paper feed unit

(1) Detaching and refitting the primary paper feed unit

<Procedure>
1. Open right cover 2.
2. Remove one band.
3. Remove right cover 2.

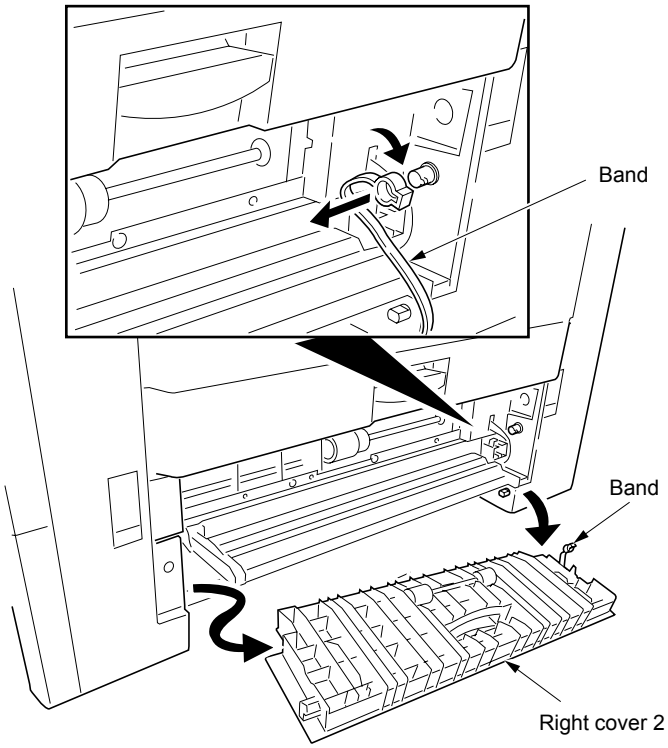


Figure 1-6-9

4. Pull out the paper feed unit (transfer unit).
5. Remove one connector.
6. Push the claw and remove the primary paper feed unit.

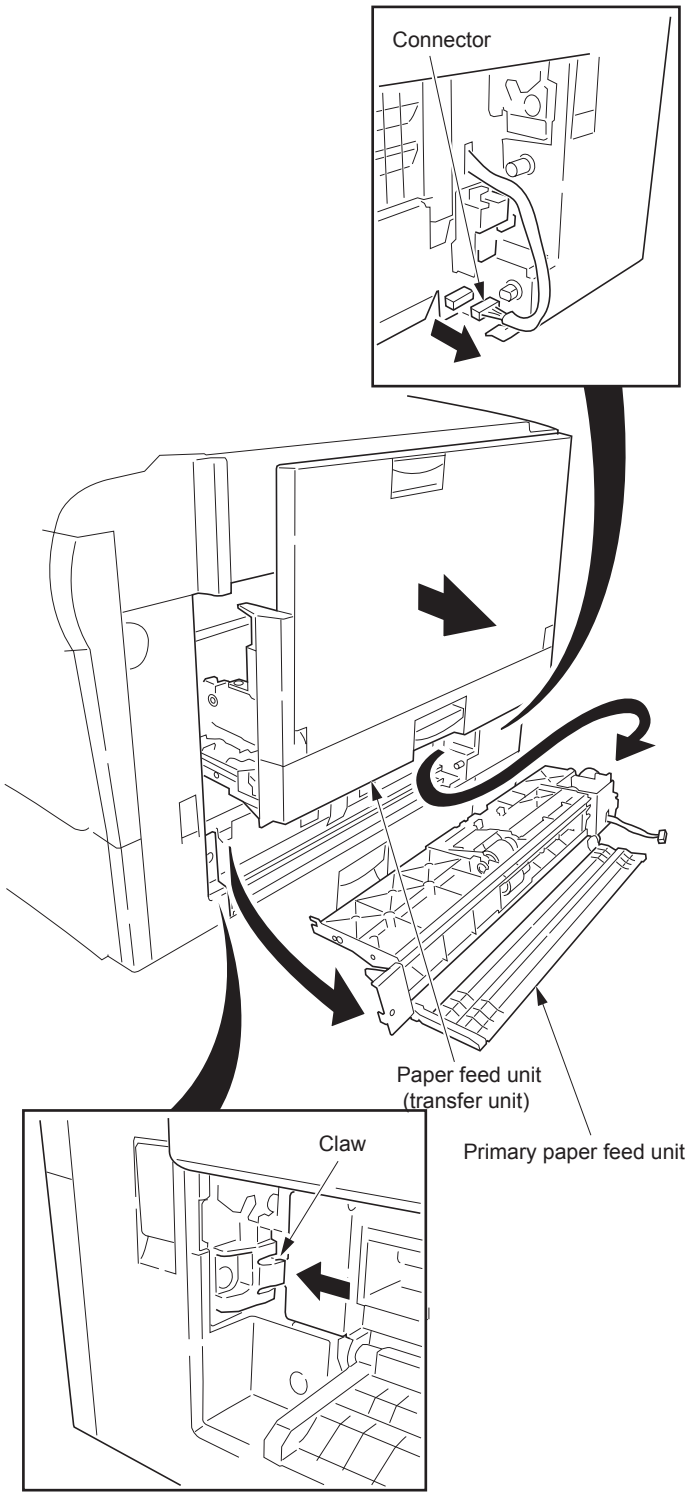


Figure 1-6-10

(2) Detaching and refitting the paper feed roller

<Procedure>

1. Remove the primary paper feed unit (See previous page).
2. Pull up the primary paper feed assembly and then remove the assembly from the bearing.

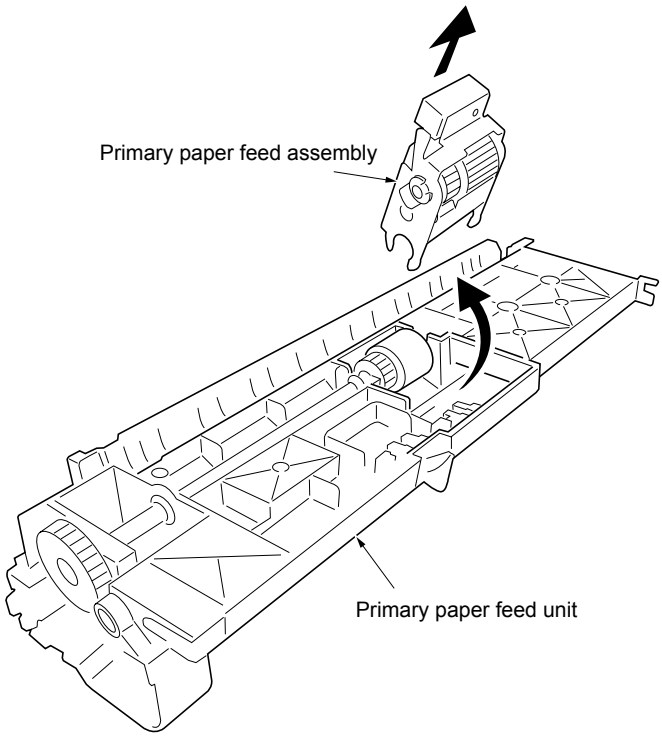


Figure 1-6-11

3. Remove three stoppers and slide the shaft to remove the bearing and paper feed roller.
4. Check or replace the paper feed roller and then refit all the removed parts.

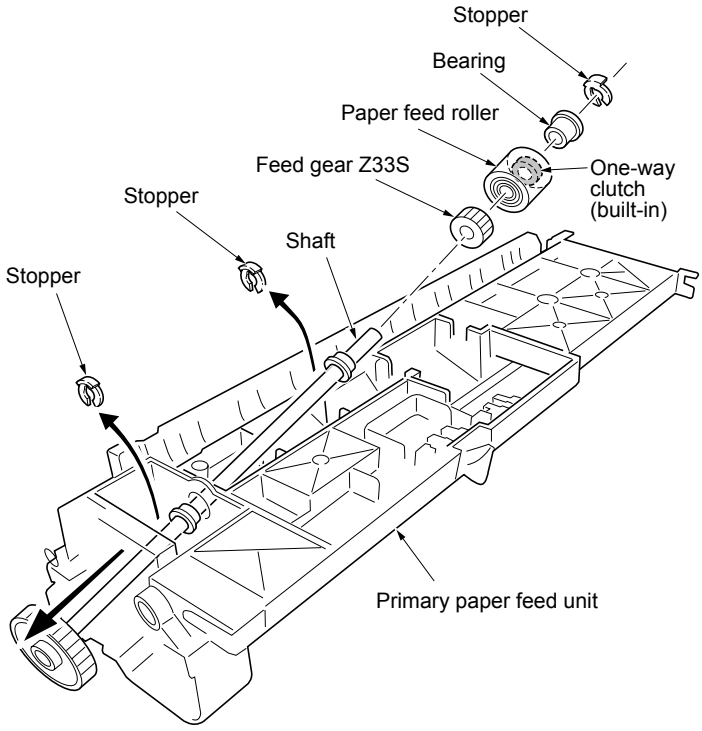


Figure 1-6-12

(3) Detaching and refitting the lower paper feed pulley

<Procedure>

1. Remove the paper feed roller (See previous page).
2. Remove two stoppers and slide the shaft to remove the bearing, insulator, paper feed pulley release lever, spring, lower paper feed pulley, pin and torque limiter 360.
3. Check or replace the lower paper feed pulley and then refit all the removed parts.

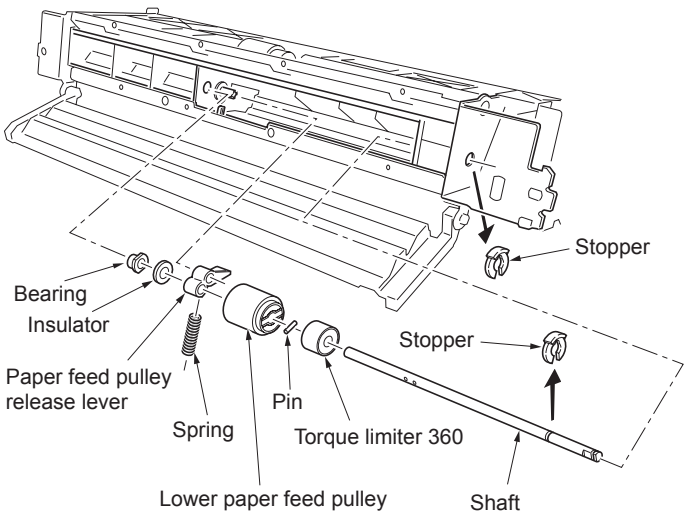


Figure 1-6-13

1-6-4 MP tray feed unit

(1) Detaching and refitting the MP tray feed roller and MP tray retard roller

<Procedure>

1. Pull out the paper feed unit (transfer unit).
2. Open the MP tray.
3. Release one claw and remove the MP tray feed roller.
4. Remove the MP tray retard roller holder.
5. Remove the MP tray retard roller.
6. Check or replace the MP tray feed roller and MP tray retard roller, and then refit all the removed parts.

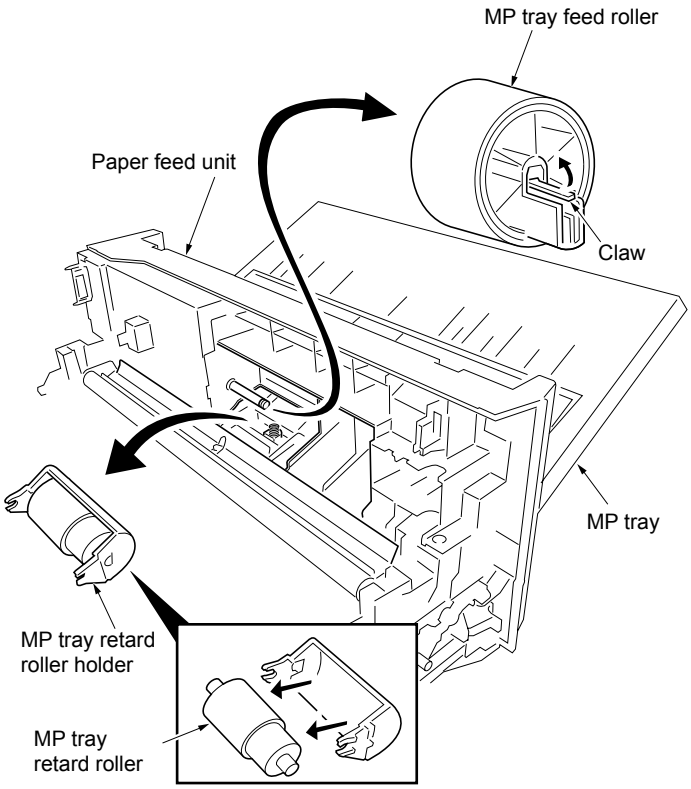


Figure 1-6-14

1-6-5 Transfer unit

(1) Detaching and refitting the transfer unit

<Procedure>

1. Open front cover and then remove the waste toner box.
2. Remove the one screw and then remove stopper plate.
3. Pull out the paper feed unit (transfer unit) until stops.
4. Press the release lever to unlock the paper feed unit and remove it.

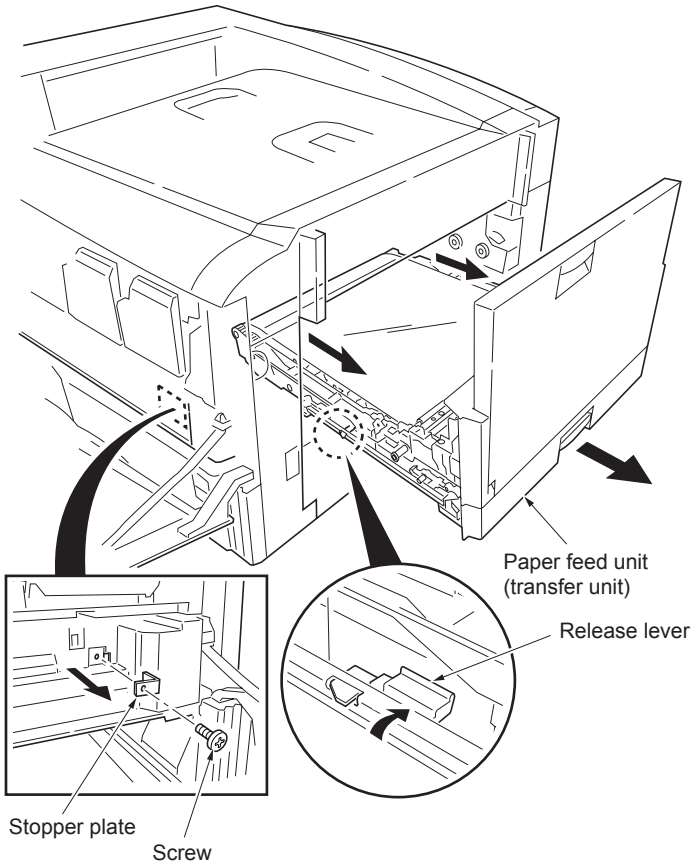


Figure 1-6-15

5. Separate the paper feed unit and transfer unit.

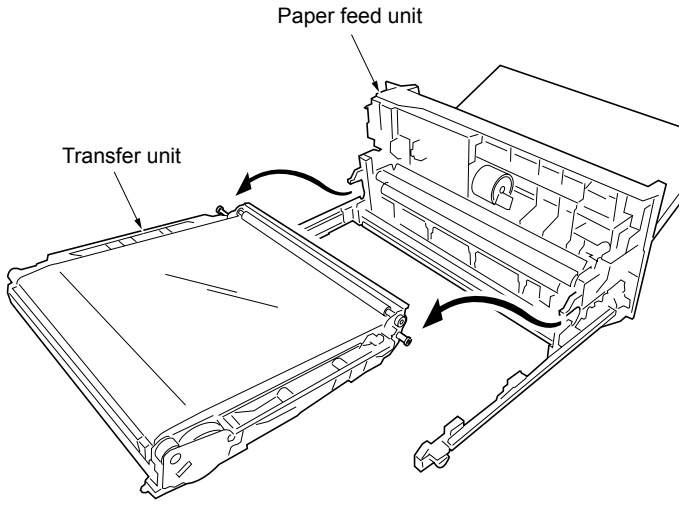


Figure 1-6-16

If the unusual noise occurs from transfer cam, clean transfer cam and transfer lever and apply grease as follows.

1. Pull transfer belt off and draw transfer lever to the right side of machine (arrow direction in Figure 1-6-16-1) to create clearance between transfer lever and transfer cam.
2. Clean the sliding surface of transfer cam and transfer lever with alcohol and remove the chippings of the wearing on the sliding surface.
3. After the cleaning, apply grease EM-50L to the sliding surface of transfer cam.

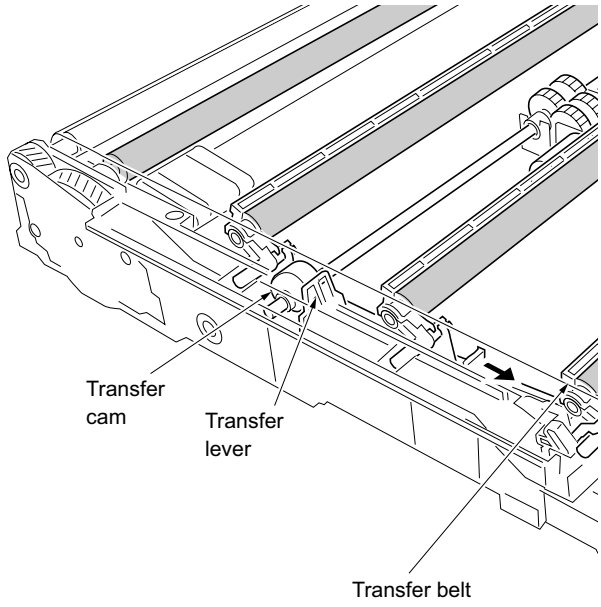


Figure 1-6-16-1

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1-6-6 Process section

(1) Detaching and refitting the process unit

<Note>
When moving the machine, remove all toner containers and process units.

<Procedure>

1. Open the front cover.
2. Push the release lever and remove the waste toner box.
3. Open four toner container covers and draw the four toner containers to the front and lift them up. After that, pull out the toner containers.

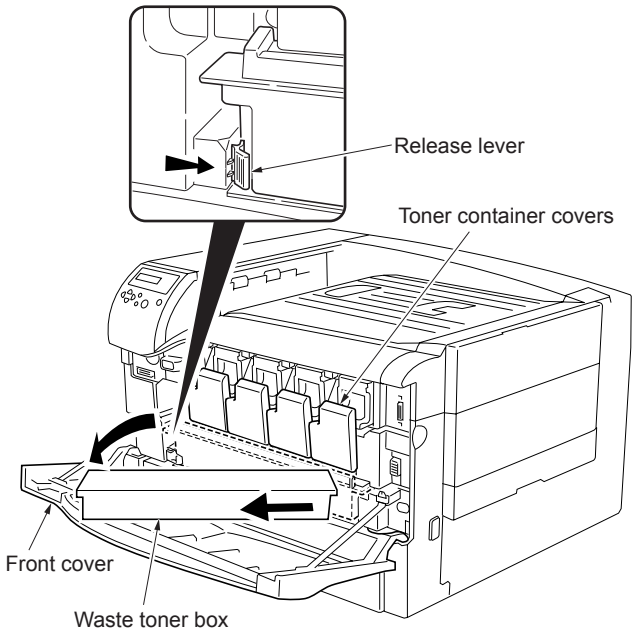


Figure 1-6-17

4. Pull out the paper feed unit (transfer unit).
5. Push up the four LED print heads (levers) while pushing down each lock levers.
6. Remove four main charger units.

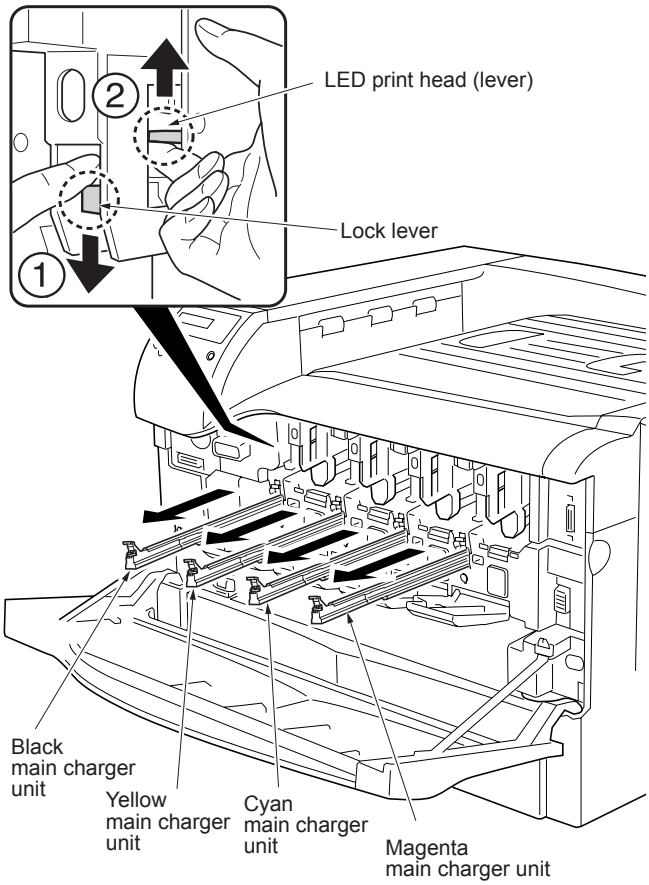


Figure 1-6-18

7. Remove two screws, and pull two release levers and remove the drum holder.

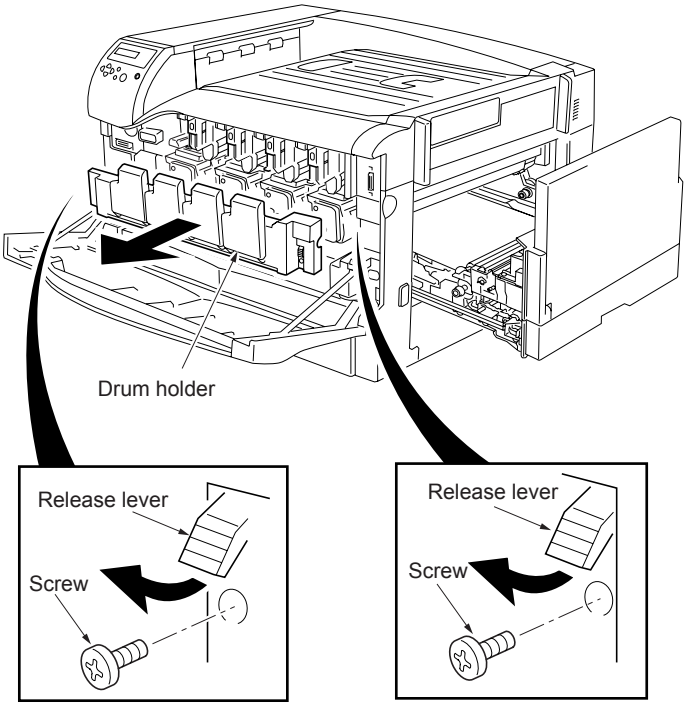


Figure 1-6-19

8. Turn the lock lever to the left (to release).
9. Remove four process units in order of black, yellow, cyan and magenta.

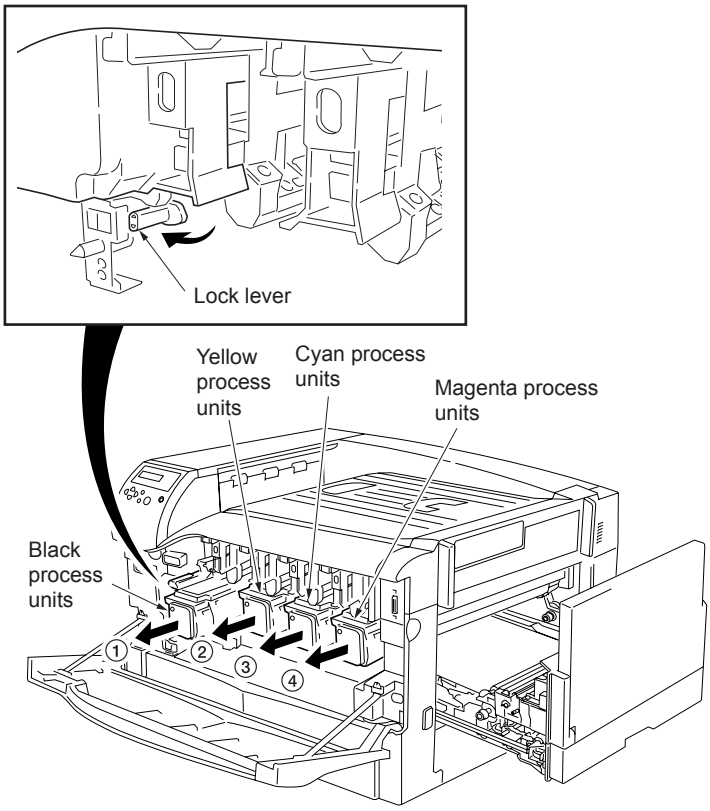


Figure 1-6-20

(2) Detaching and refitting the drum unit and developer

<Procedure>

1. Remove the process unit (See page 1-6-13).
2. Remove two screws and then remove the drum front plate.

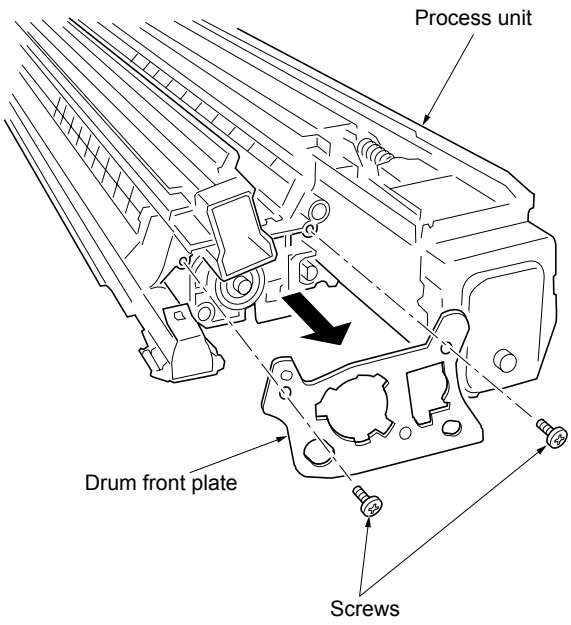


Figure 1-6-21

3. Remove the front DS spring (Long) and the rear DS spring (Short) from the front side and the rear side of the process unit (bottom side).

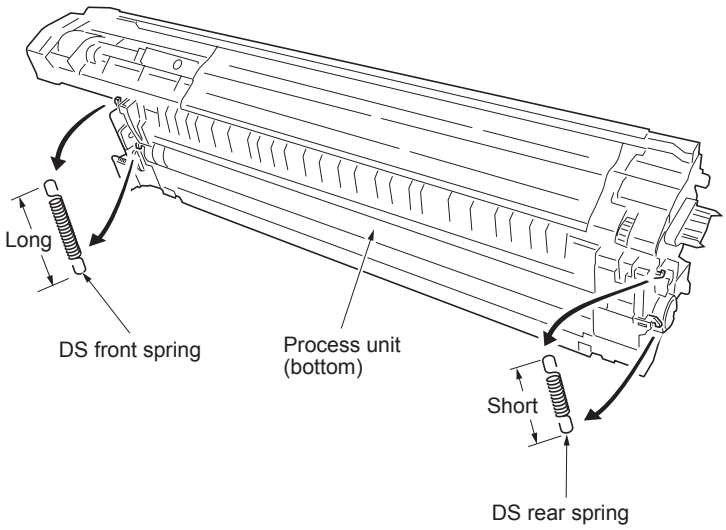


Figure 1-6-22

4. Open the claw and remove the drive joint.
5. Pull out the front boss of the developer from the boss receptacle of the drum unit and then pull out the rear boss from the boss receptacle.
6. Remove one connector and separate the developer and drum unit.

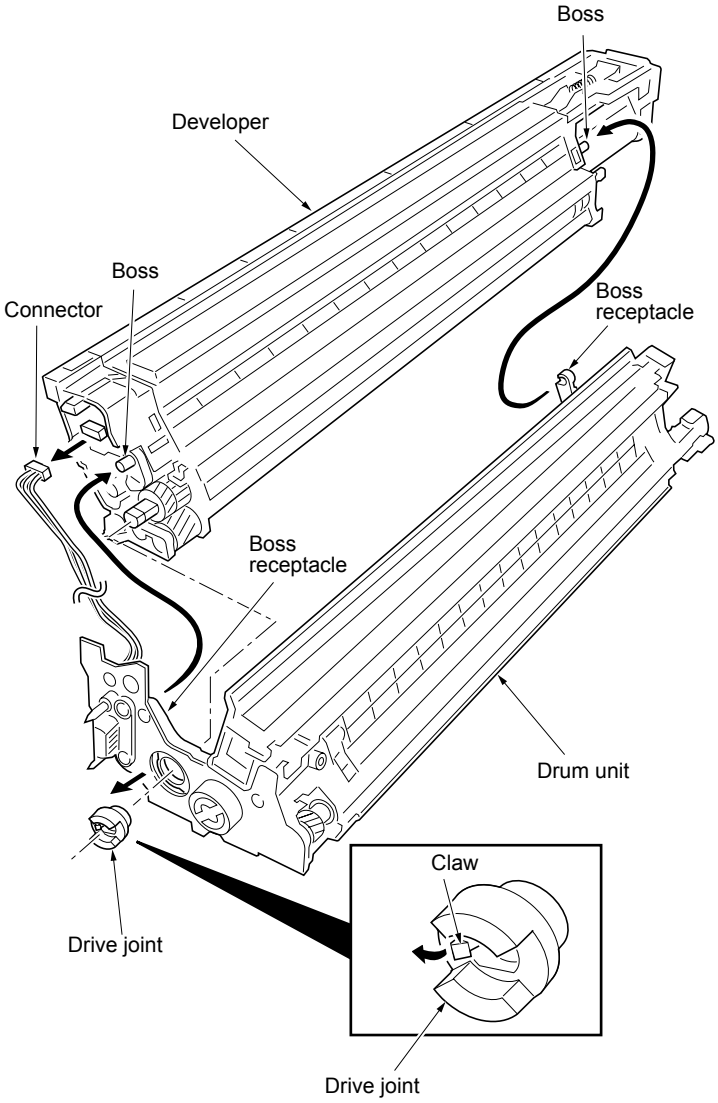


Figure 1-6-23

1-6-7 Fuser unit

(1) Detaching and refitting the fuser unit

<Procedure>

1. Open the left cover.
2. Pull out the fuser unit until stops.
3. While lifting the fuser unit a little, remove it together with the rail.

* To remove only the fuser unit, remove the two pins.

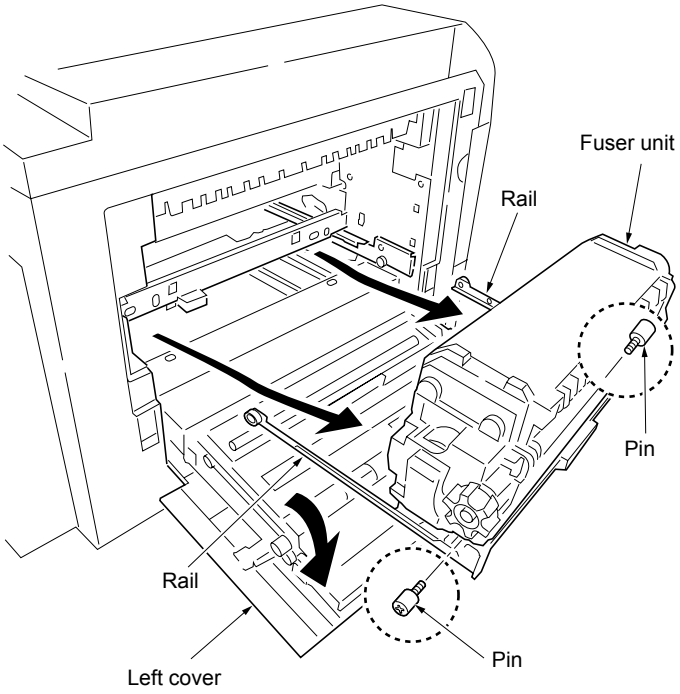


Figure 1-6-24

<120 V (U.S.A.) specifications only>

4. Turn the fuser unit so that its bottom side faces up.
5. Slide the duplex conveying A assembly to the side to release the six hooks.

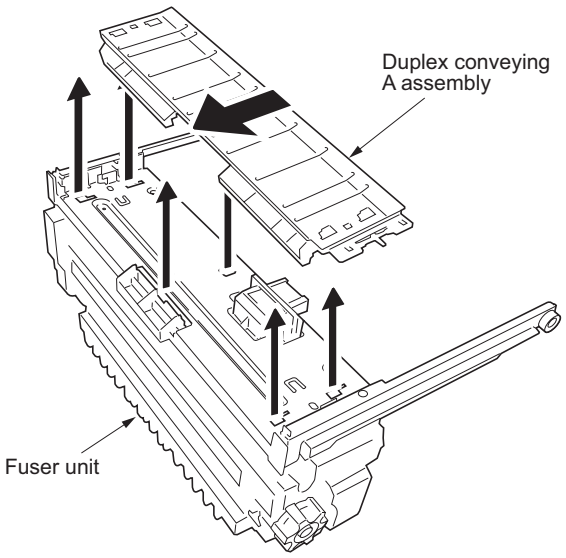


Figure 1-6-24-1

6. Check or replace the fuser unit, and then refit all the removed parts.

<120 V (U.S.A.) specifications only>

7. Turn the fuser unit so that its bottom side faces up.
8. Insert the six hooks of the duplex conveying A assembly into the holes of the fuser unit.
9. Slide the duplex conveying A assembly to the side to secure the hooks.

(2) Detaching and refitting the upper and lower fuser thermistors, upper and lower fuser thermostats, upper and lower fuser heater lamps and upper and lower fuser rollers

<Procedure>

1. Remove the fuser unit (See page previous page).
2. Remove one screw and then remove the fuser handle.
3. Remove two screws and then remove the rear fuser cover.

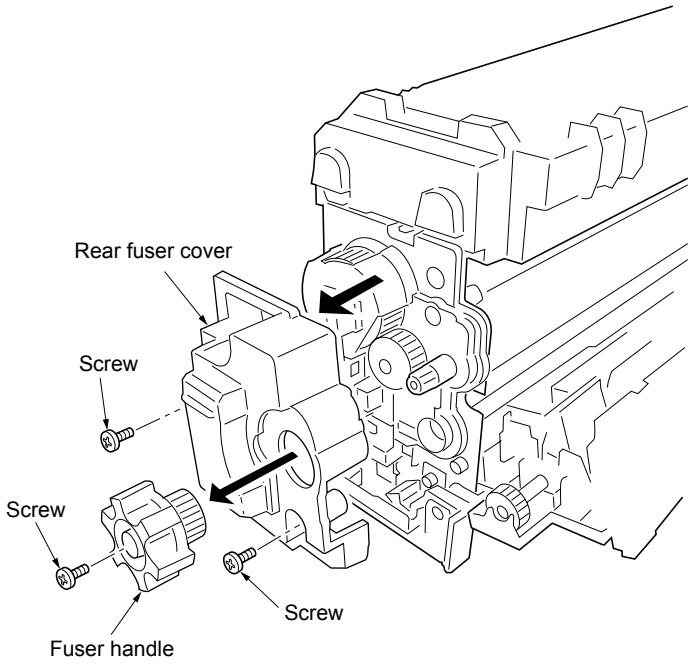


Figure 1-6-25

4. Remove two screws and then remove the front fuser cover.

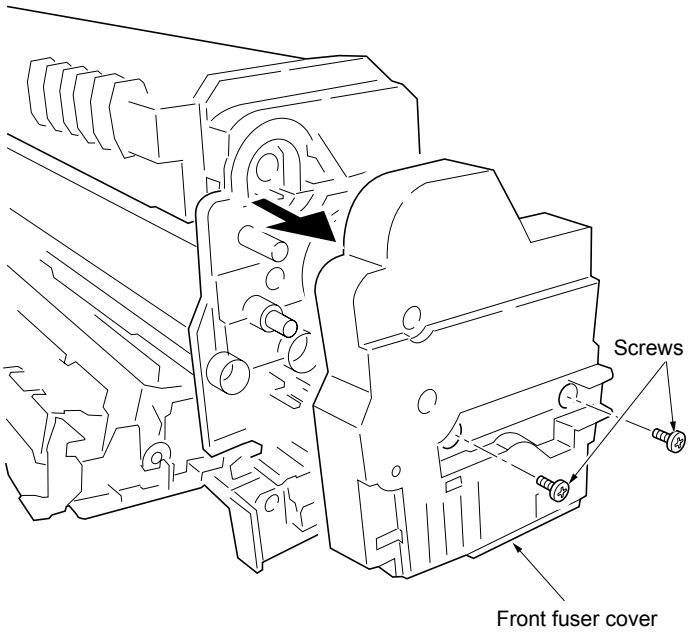


Figure 1-6-26

5. Remove the upper fuser cover.

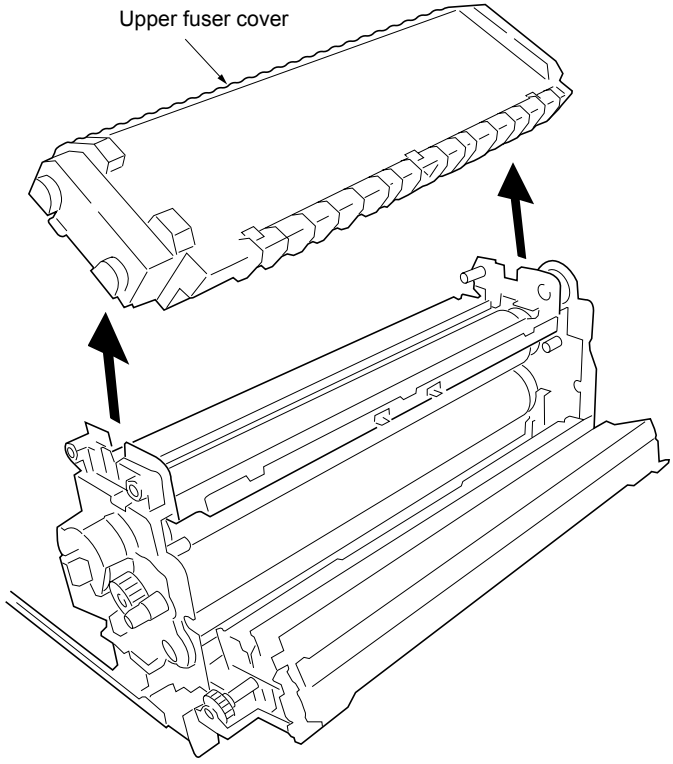


Figure 1-6-27

6. Remove the harness sheet.
7. Remove one tub from the terminal of upper fuser thermistor.
8. Remove one tub from the terminal of lower fuser thermistor.

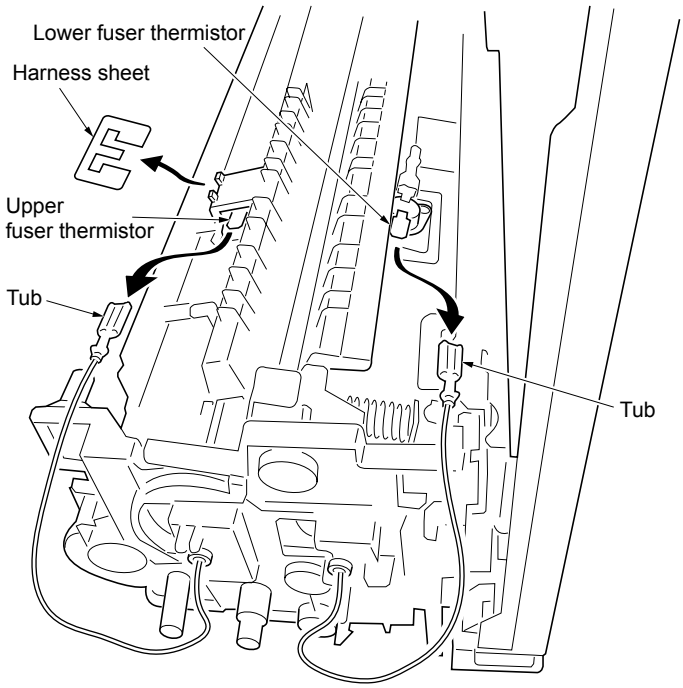


Figure 1-6-28

9. Remove one screw and round terminal from the terminal of upper fuser heater lamp.
10. Remove one screw from the terminal of lower fuser heater lamp.

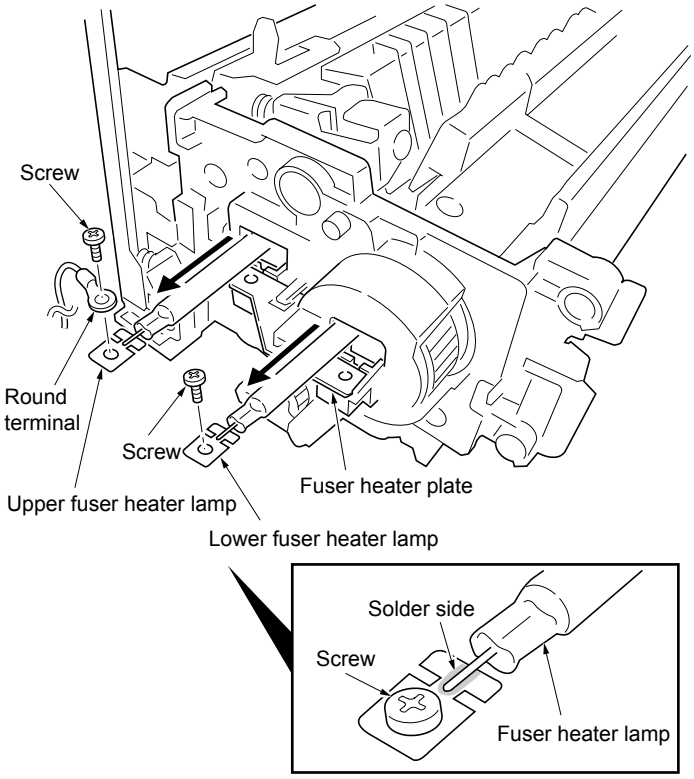


Figure 1-6-29

11. Remove one tub from the terminal of upper fuser thermistor.
12. Remove one connector.

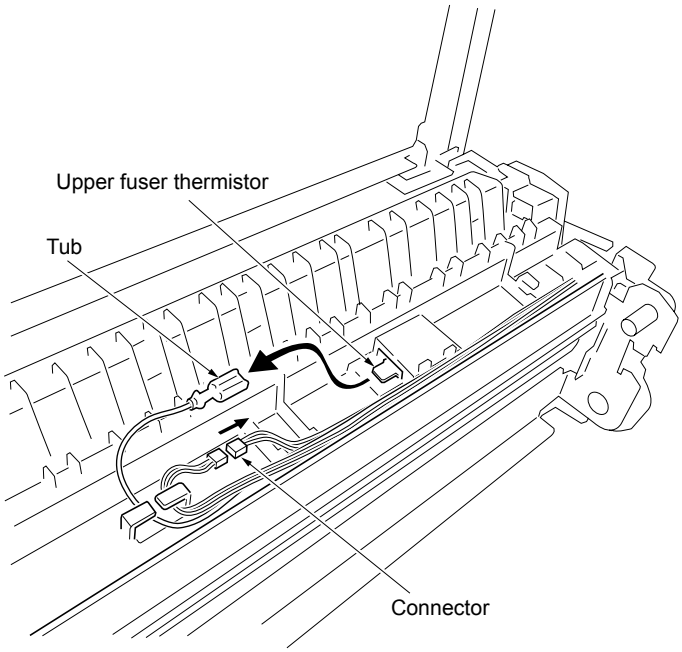


Figure 1-6-30

13. Remove one screw and then remove upper fuser thermistor.
14. Remove two screws and then remove the upper fuser thermostat.
15. Remove one hook and then remove the upper fuser entrance guide.

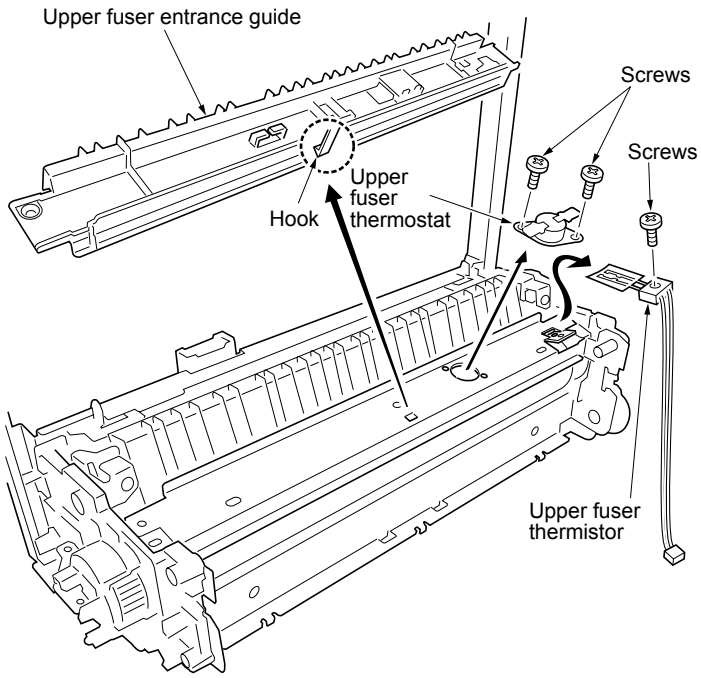


Figure 1-6-31

16. Remove three hooks and then remove the lower fuser entrance guide.

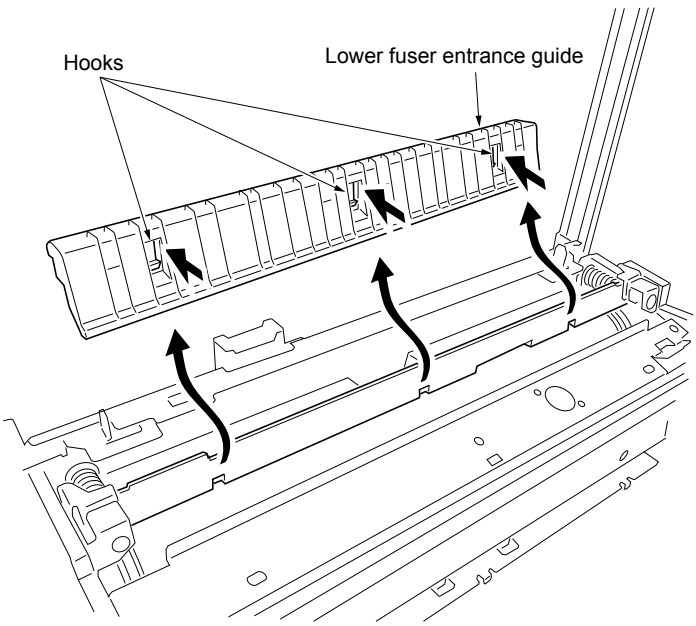


Figure 1-6-32

17. Remove one hook and then remove the rear fuser heater holder.

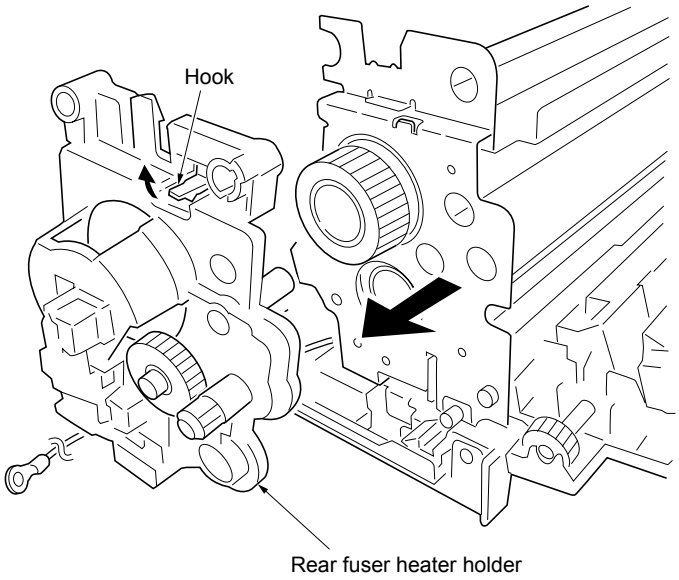


Figure 1-6-33

18. Remove two hooks and then remove the front fuser heater holder.

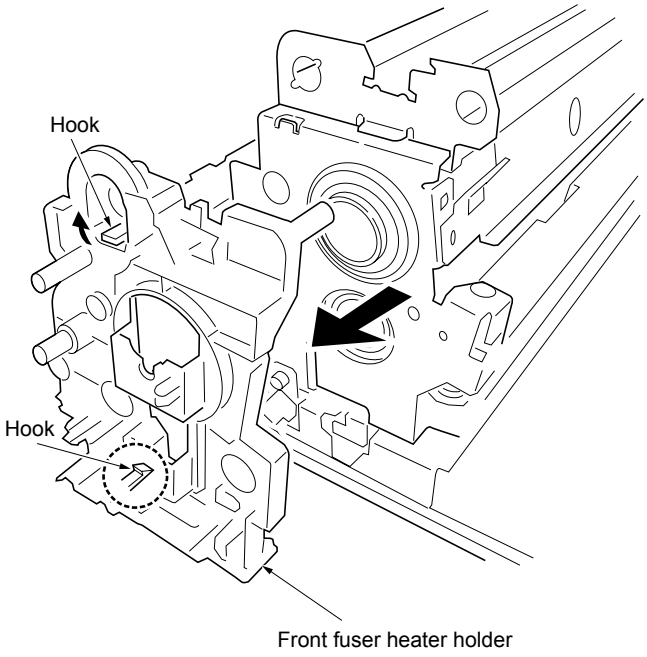


Figure 1-6-34

19. Remove the upper fuser frame.

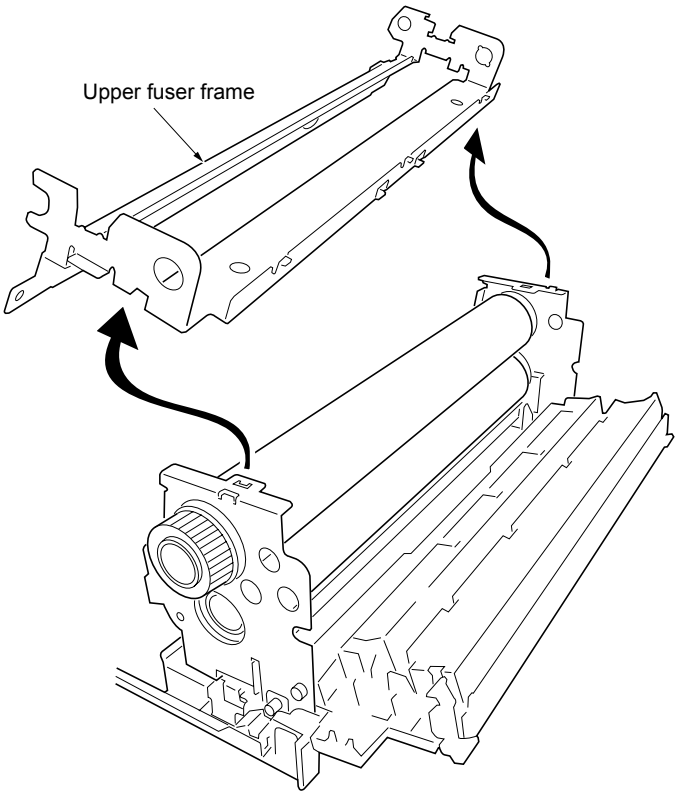


Figure 1-6-35

20. Loosen two fuser press screws.
21. Remove two C-rings.
22. Remove one fuser gear Z38S.
23. Remove two fuser bearings.
24. Remove two fuser bushes.
25. Remove the upper fuser roller.

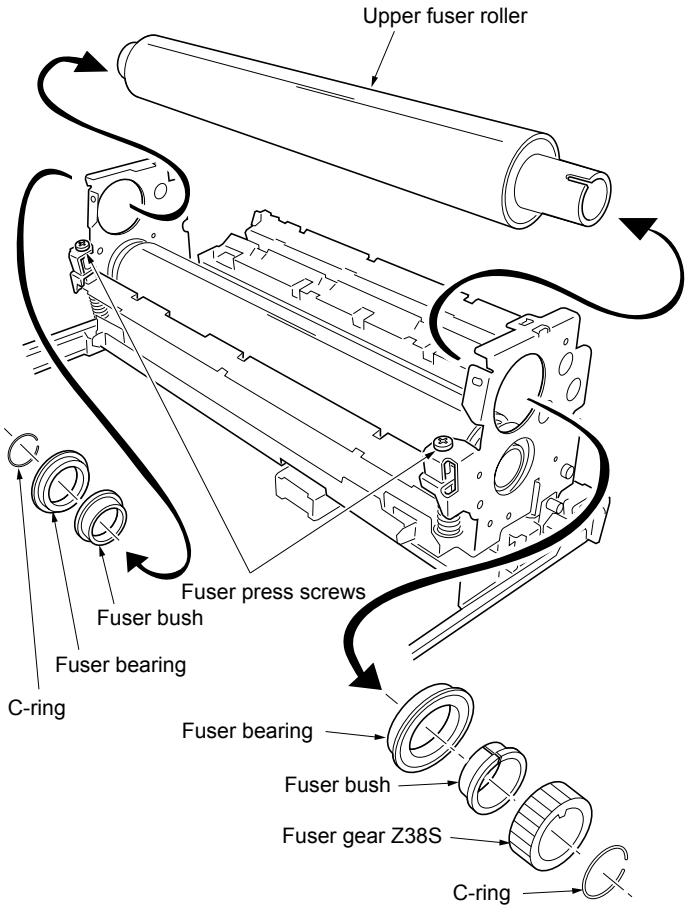


Figure 1-6-36

26. Pull up the lower fuser roller.
27. Remove two fuser bearings, fuser bushes and one C-ring.

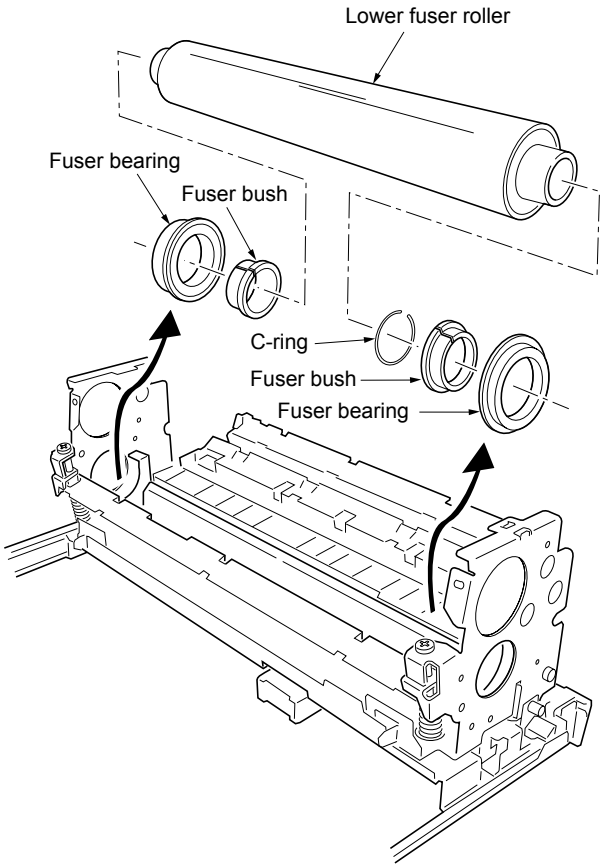


Figure 1-6-37

28. Remove one connector.
29. Remove one screw and then remove the lower fuser thermistor mounting plate.
30. Remove one screw and then remove the lower fuser thermistor.
31. Check or replace the upper and lower fuser thermistors, upper and lower fuser thermostats, upper and lower fuser heater lamps and upper and lower fuser rollers and refit all the removed parts.

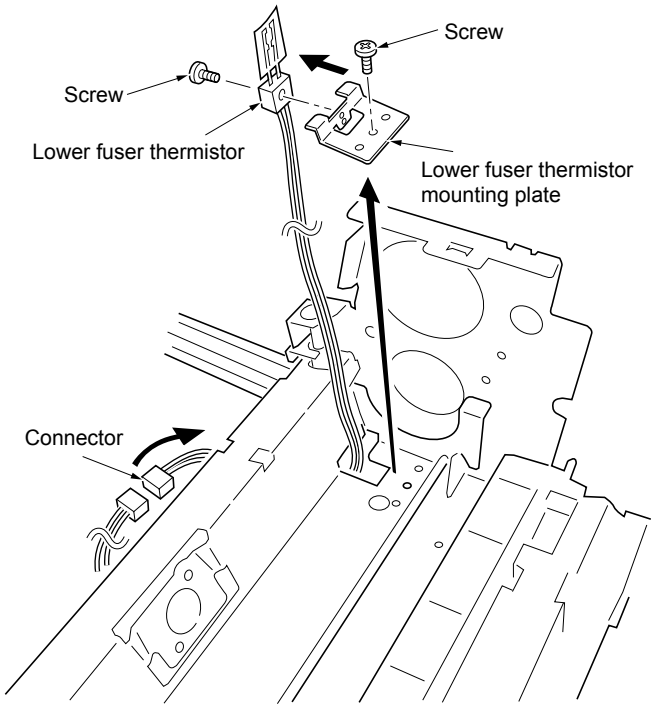


Figure 1-6-38

1-6-8 PWBs

(1) Detaching and refitting the main controller PWB

<Procedure>

1. Turn off the power switch and then remove the power cord.
2. Remove two screws and then remove the main controller PWB.

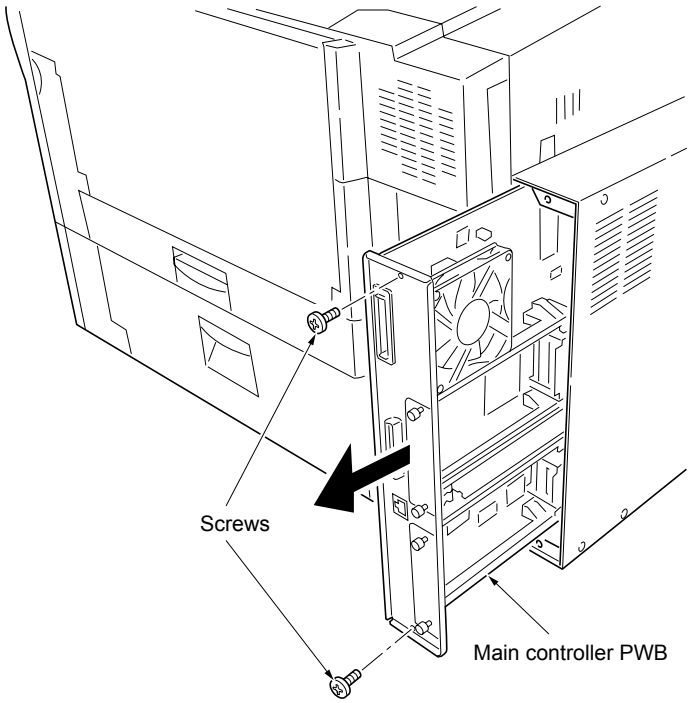


Figure 1-6-39

(2) Detaching and refitting the engine controller PWB

<Procedure>

1. Remove the main controller PWB (See previous page).
2. Remove five connectors.
3. Remove four screws and then remove the main controller box.

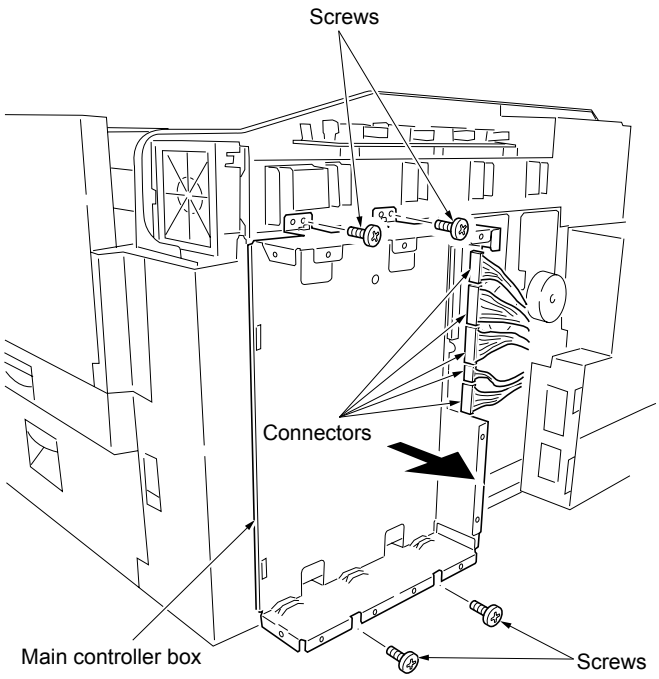


Figure 1-6-40

4. Remove the power supply unit (See page 1-6-27).
5. Remove the all (thirty two) connectors.
6. Remove two screws and then remove the engine controller PWB.
7. Check or replace the engine controller PWB and then refit all the removed parts.

* To replace the engine controller PWB, remove the EEPROM (U20) from the old engine controller PWB and mount it to the new engine controller PWB.

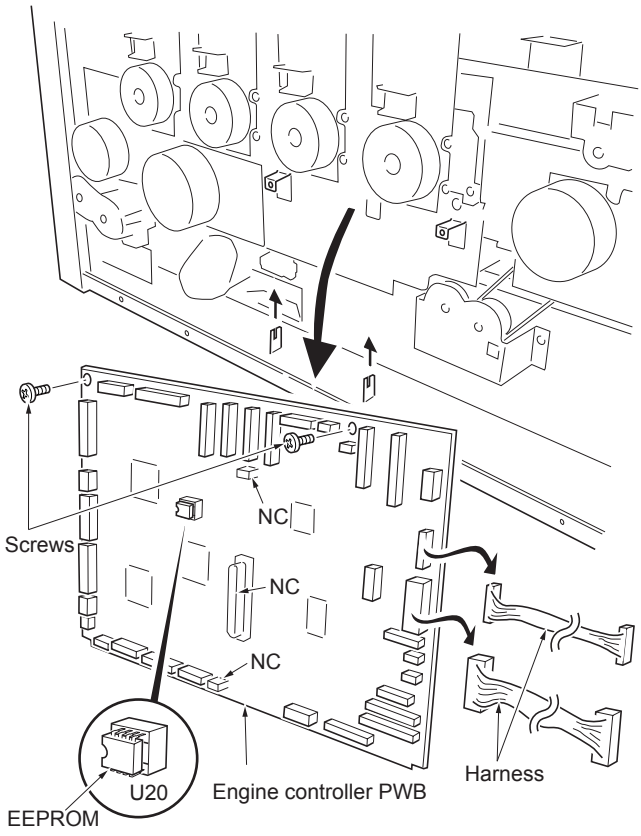


Figure 1-6-41

(3) Detaching and refitting the power supply PWB

<Procedure>

1. Remove the rear cover (See page 1-6-5).
2. Remove seven connectors and two tubs.

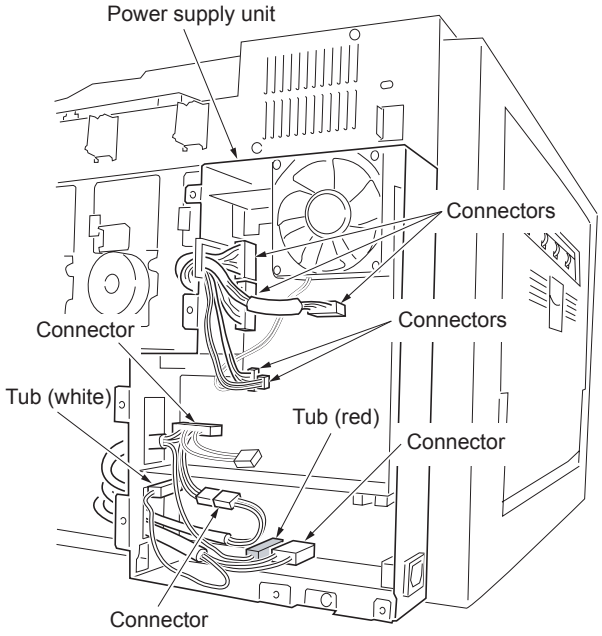


Figure 1-6-42

3. Remove the four screws and then remove the power supply unit.

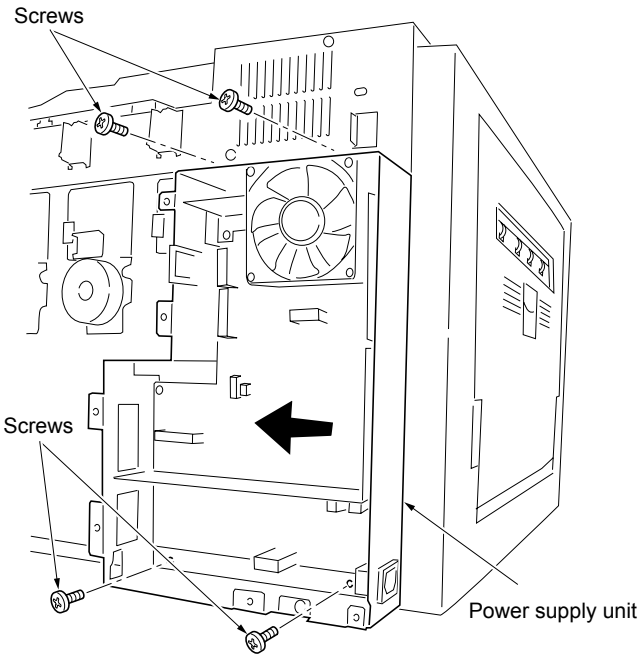


Figure 1-6-43

4. Remove one connector and two screws, and then remove the power supply PWB cooling fan motor.
5. Remove two tubs and seven screws, and then remove the power supply PWB.

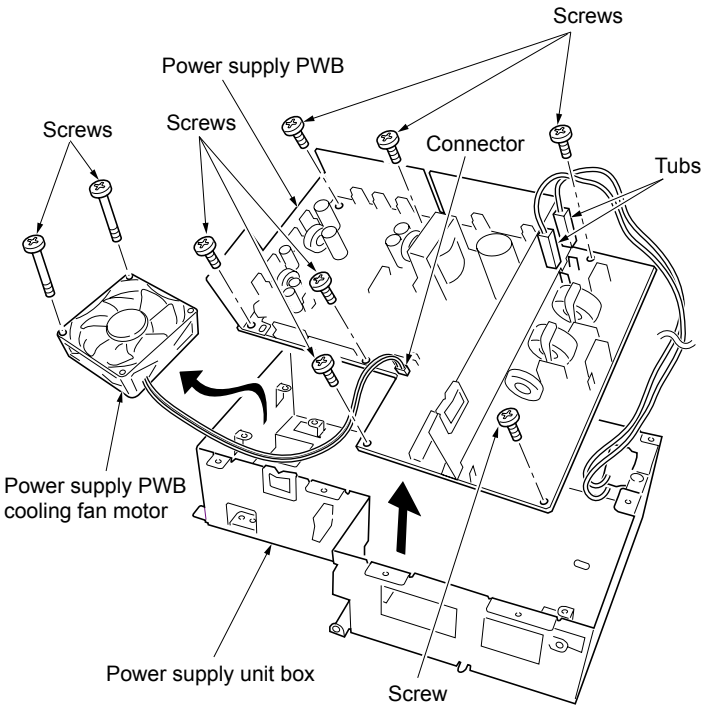


Figure 1-6-44

(4) Detaching and refitting the main high voltage PWB

<Procedure>

1. Remove the top cover (See page 1-6-2).
2. Remove the rear cover (See page 1-6-5).
3. Remove eight tubs and one connector.

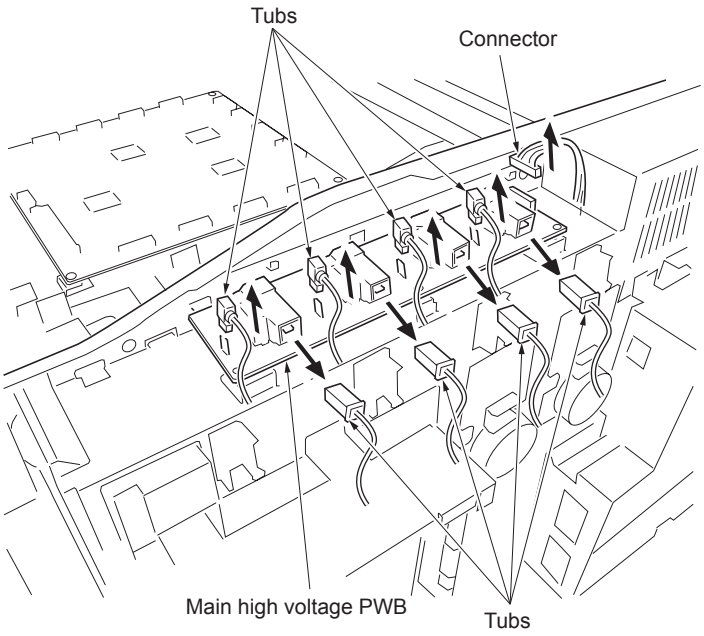


Figure 1-6-45

4. Remove three screws and then remove the main high voltage PWB.
5. Check or replace the main high voltage PWB and then refit all the removed parts.

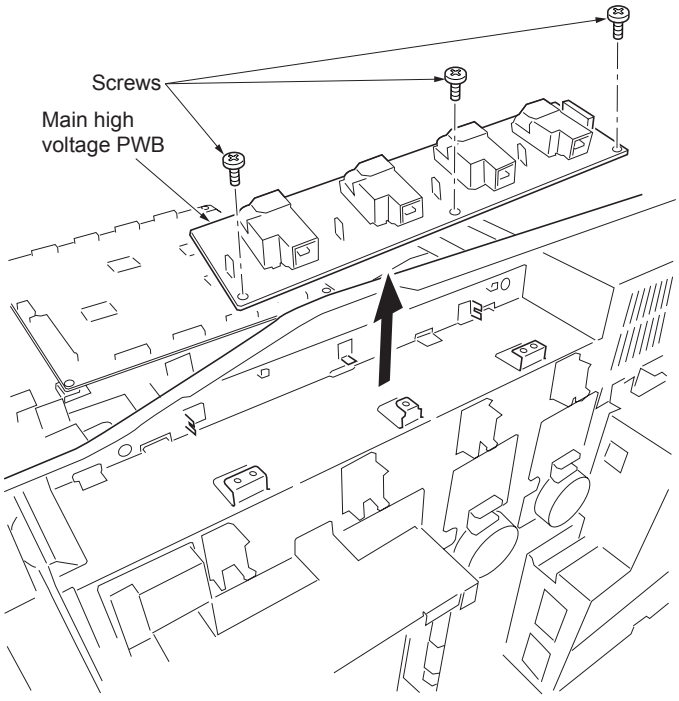


Figure 1-6-46

(5) Detaching and refitting the bias high voltage PWB

<Procedure>

1. Remove the left cover (left cover assembly). (See page 1-6-6.)
2. Remove four tubs and one connector.
3. Remove two screws and then remove the bias high voltage PWB.
4. Check or replace the bias high voltage PWB and then refit all the removed parts.

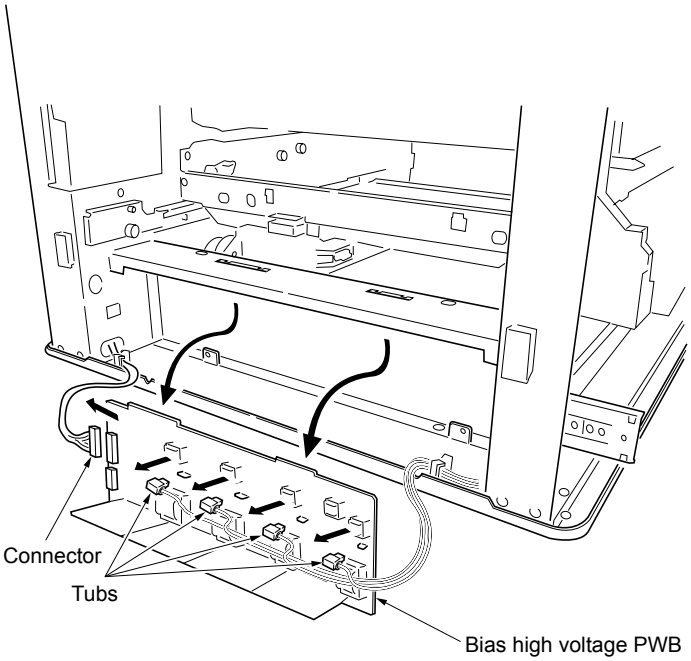


Figure 1-6-47

(6) Detaching and refitting the LPH drive PWB

<Procedure>

1. Remove the top cover (See page 1-6-2).
2. Remove three screws and then remove the LPH drive PWB cover.
3. Remove the all (fourteen) connectors from the LPH drive PWB.
4. Remove four screws and then remove the LPH drive PWB.
5. Check or replace the LPH drive PWB and then refit all the removed parts.

* When replacing the LPH drive PWB, use a general-purpose IC puller (Sunhayato GX-8) to remove the backup memory (U1) from the old LPH drive PWB and mount it to the new LPH drive PWB.

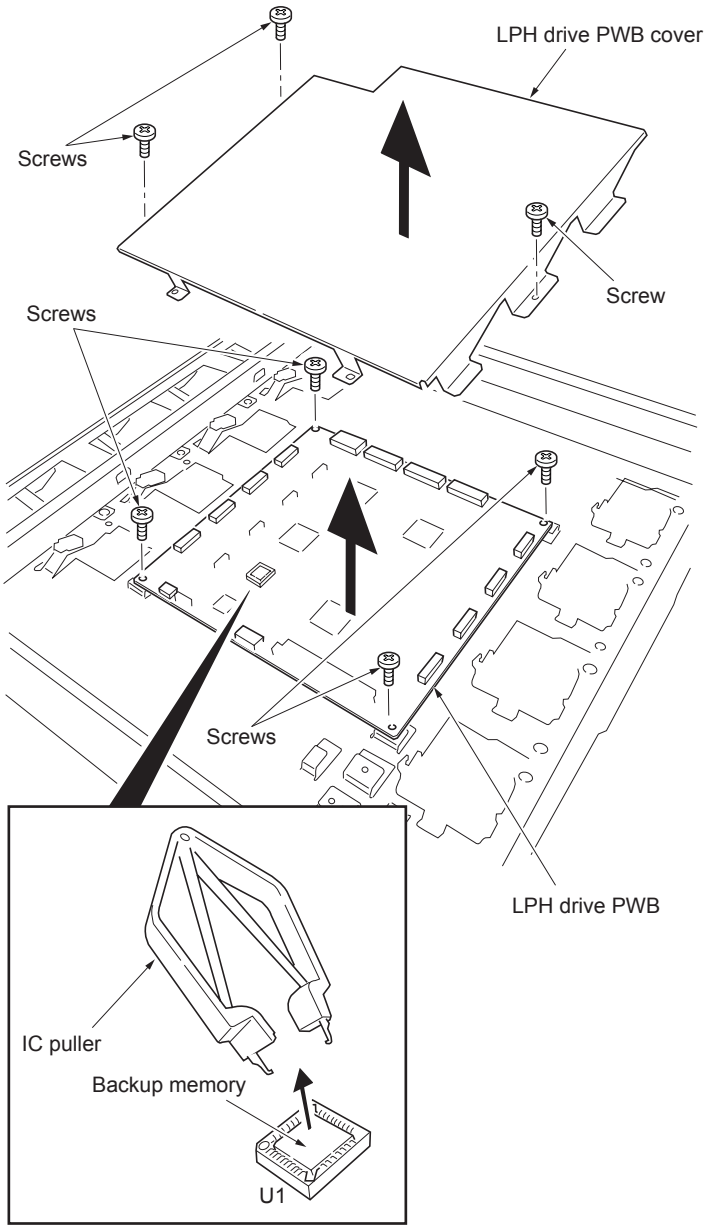


Figure 1-6-48

(7) Detaching and refitting the front relay PWB

<Procedure>

1. Remove two screws and then remove the left inner cover.
2. Remove two screws and then remove the drum cover.

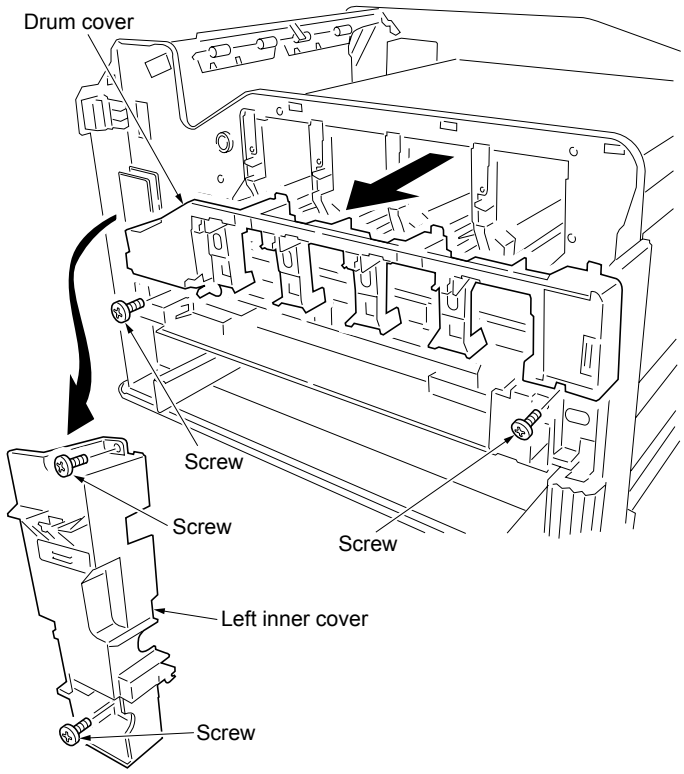


Figure 1-6-49

3. Remove the all (five) connectors from the front relay PWB.
4. Remove one screw and then remove the front relay PWB.
5. Check or replace the front relay PWB and then refit all the removed parts.

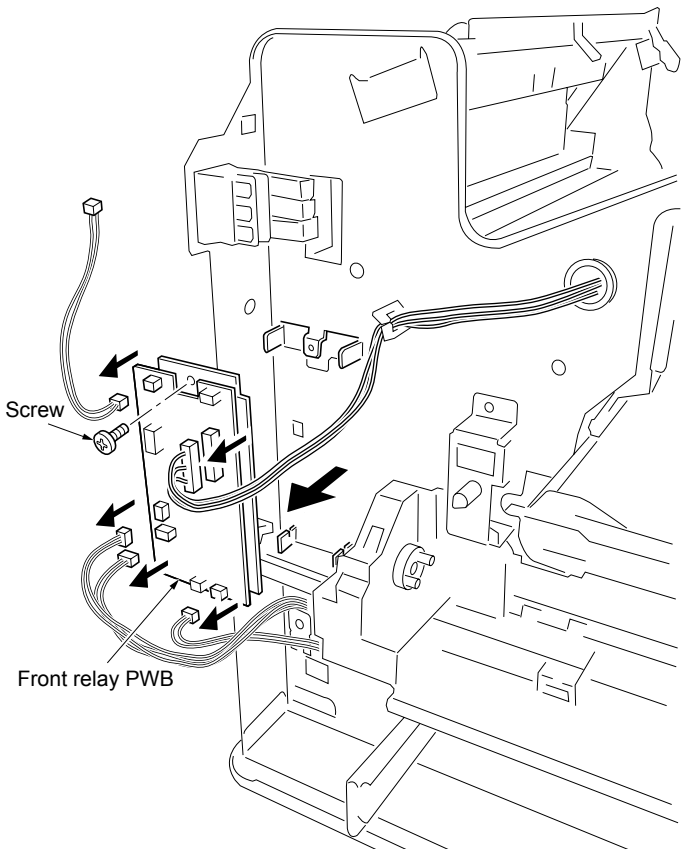


Figure 1-6-50

1-6-9 Others

(1) Detaching and refitting the developing MCY motor

<Procedure>

1. Remove the main controller box (See page 1-6-26).
2. Remove one connector.
3. Remove two screws and then remove the developing MCY motor.
4. Check or replace the developing MCY motor and then refit all the removed parts.

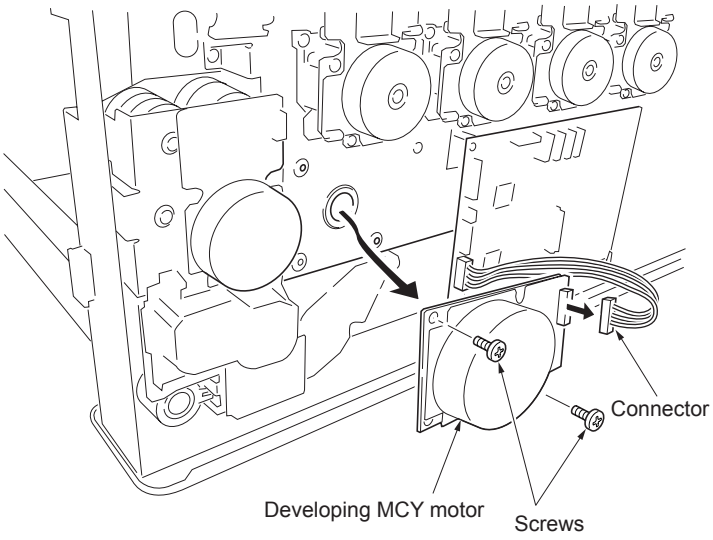


Figure 1-6-51

(2) Detaching and refitting the drum motors K, M, C and Y

<Procedure>

1. Remove the main controller box (See page 1-6-26).
2. Remove one connector.
3. Remove two screws and then remove the drum motor K.
4. Check or replace the drum motor K and then refit all the removed parts.

* Detach and refit the drum motors M, C, and Y in the similar way to drum motor K.

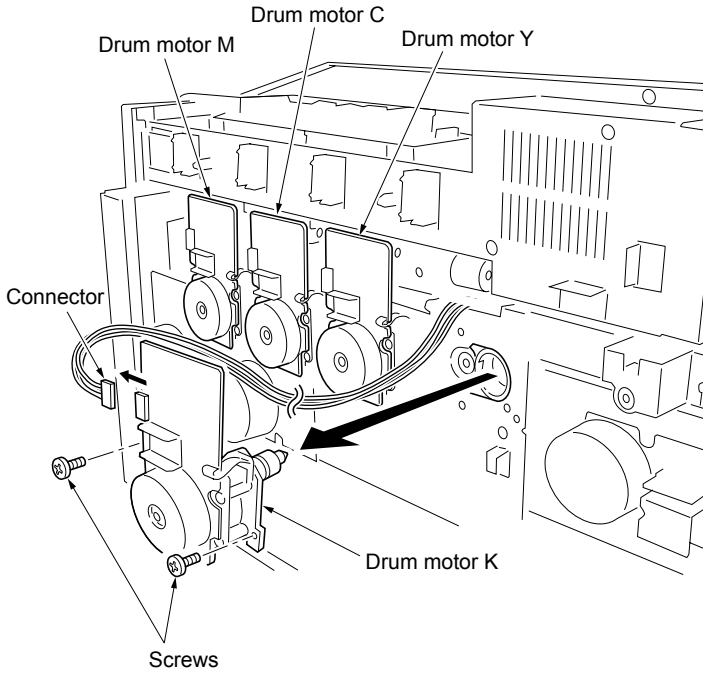


Figure 1-6-52

(3) Detaching and refitting the toner motors K, M, C and Y

<Procedure>

1. Remove the drum motors K, M, C and Y (See previous page).
2. Remove one connector.
3. Remove one screw and then remove the toner motor M.
4. Check or replace the toner motor M and then refit all the removed parts.

* Detach and refit the toner motors M, C, and Y in the similar way to toner motor K.

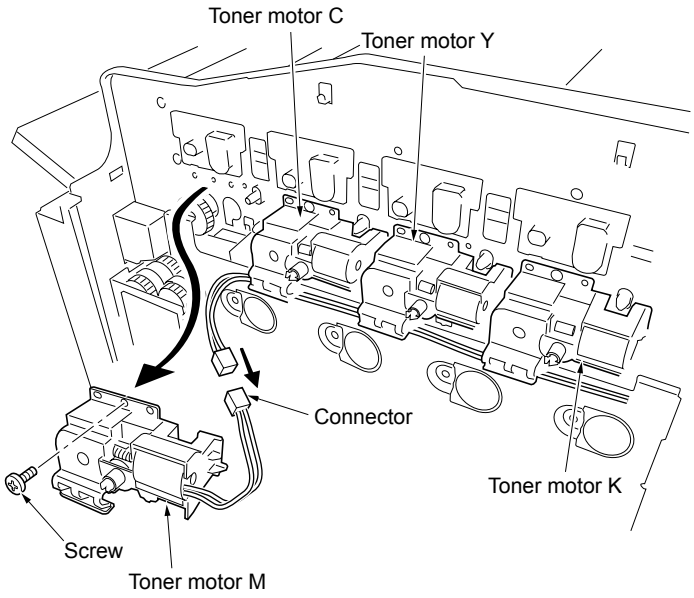


Figure 1-6-53

(4) Detaching and refitting the cassette lift motor

<Procedure>

1. Remove the rear cover (See page 1-6-5).
2. Remove one connector.
3. Remove one screw and then remove the cassette lift motor.
4. Check or replace the cassette lift motor and then refit all the removed parts.

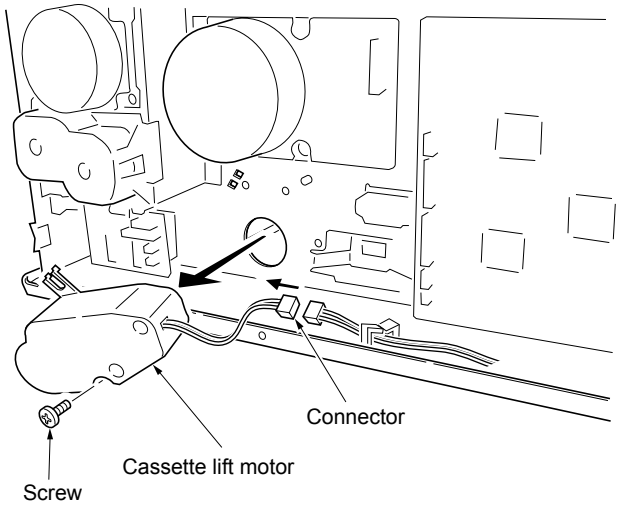


Figure 1-6-54

(5) Detaching and refitting the paper feed motor

<Procedure>

1. Remove the rear cover (See page 1-6-5).
2. Remove one connector.
3. Remove three screws and then remove the paper feed motor.
4. Check or replace the paper feed motor and then refit all the removed parts.

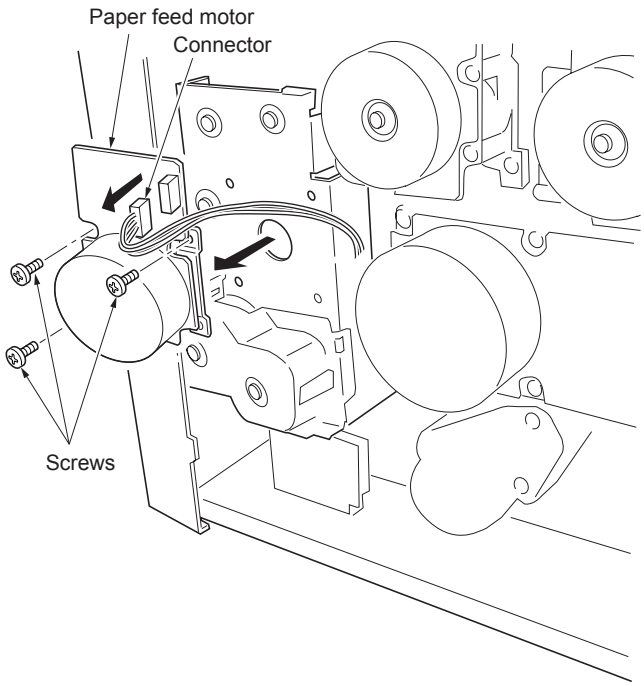


Figure 1-6-55

(6) Detaching and refitting the paper feed drive unit

<Procedure>

1. Remove the main controller box (See page 1-6-26).
2. Remove the right rear cover.
3. Remove one connector.
4. Remove one stopper and then remove the paper feeder feed H clutch.
5. Remove three screws and then remove the paper feed drive unit.
6. Check or replace the paper feed drive unit and then refit all the removed parts.

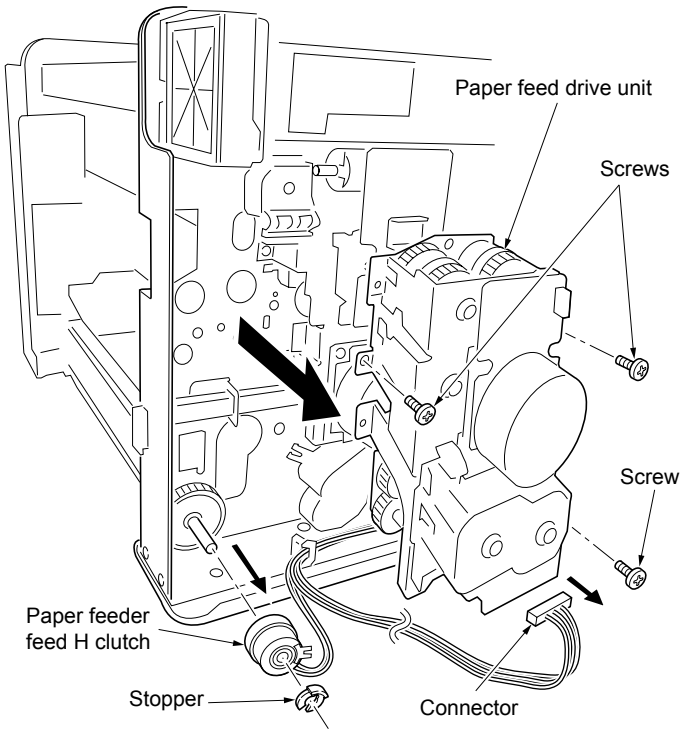


Figure 1-6-56

(7) Detaching and refitting the developing K/fuser motor

<Procedure>

1. Remove the power supply unit (See page 1-6-27).
2. Remove one connector.
3. Remove three screws and then remove the developing K/fuser motor.
4. Check or replace the developing K/fuser motor and then refit all the removed parts.

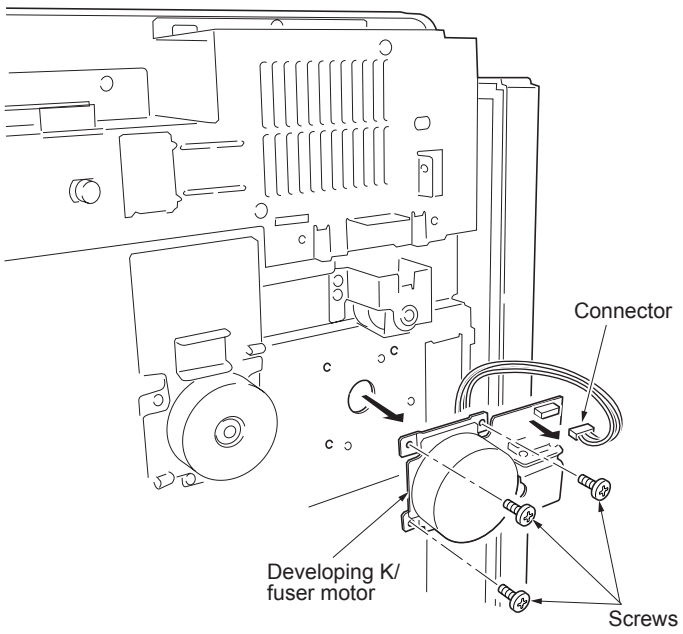


Figure 1-6-57

(8) Detaching and refitting the ozone filter

<Procedure>

1. Push the lever and remove the ozone filter cover.
2. Remove the ozone filter from the ozone filter cover.
3. Check or replace the ozone filter and then refit all the removed parts.

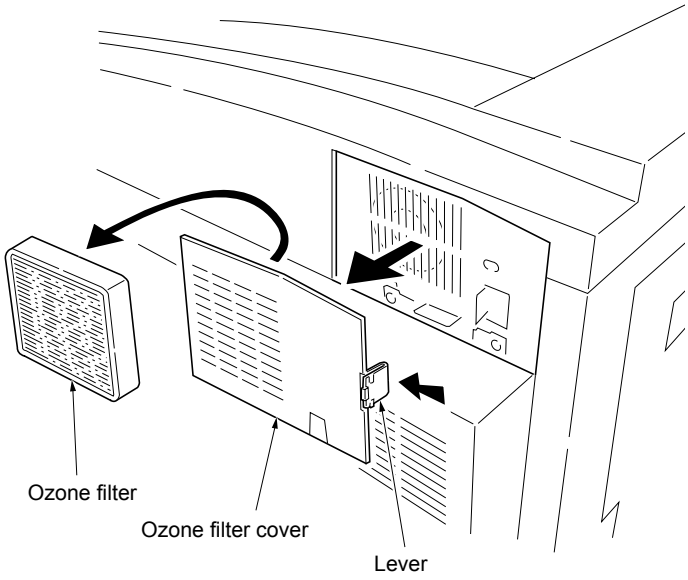


Figure 1-6-58

(9) Detaching and refitting the LED print head

<Procedure>

The procedure for removing the LED print head (LPH) for yellow is described below as an example. Use the same procedure for LPH for the other colors.

1. Remove the top cover (see page 1-6-2).
2. Remove the paper feed unit (transfer unit) (see page 1-6-12).
3. Remove the four process units (see page 1-6-13).
4. Remove the two screws from the drum cover.
5. Remove the connector and then remove the drum cover.

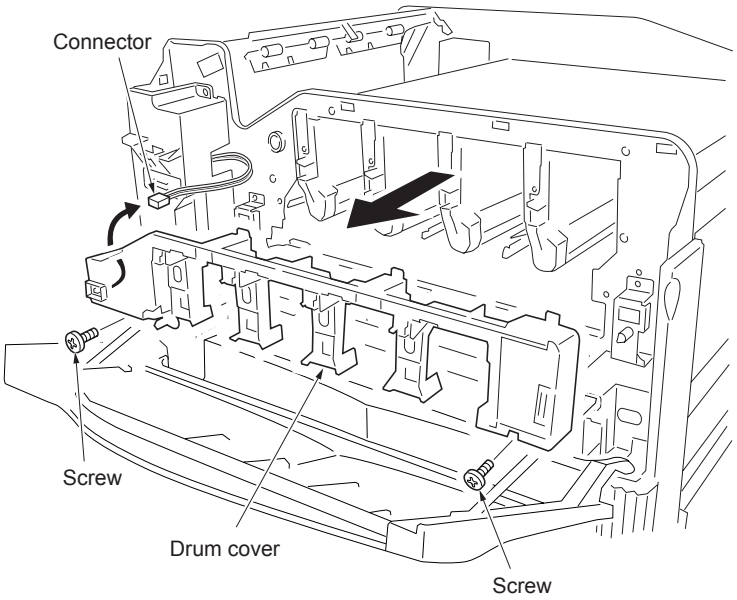


Figure 1-6-59

6. Remove the connector Y from the LPH drive PWB.
7. Remove the connector for the toner empty detection sensor (not provided for LPH assembly K).
8. Remove the screw from the cable clamp.
9. Remove the screw from the LPH stay.

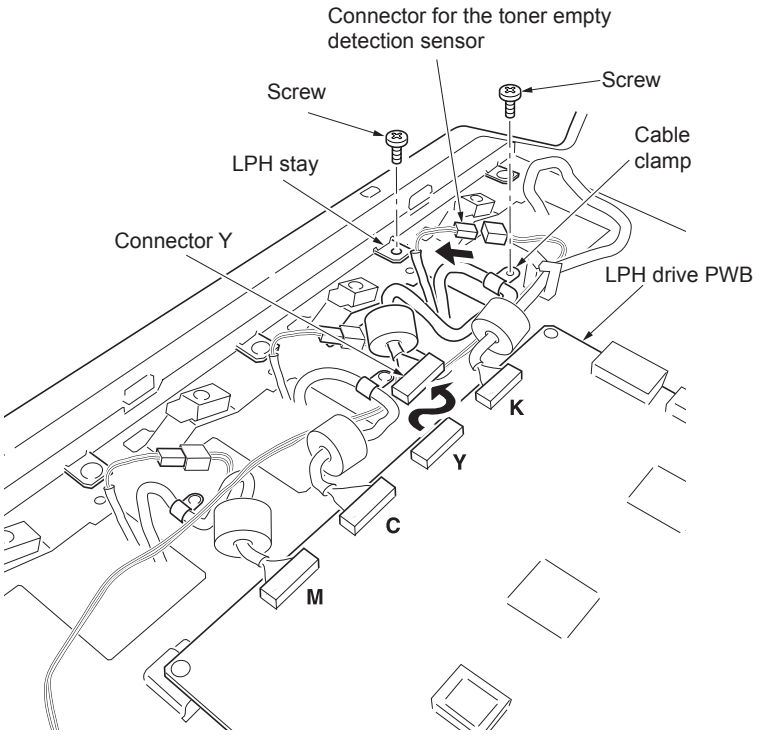


Figure 1-6-60

10. Remove the connector Y from the LPH drive PWB.
11. Remove the screw from the cable clamp.
12. Remove the screw from the rear LPH holder.
13. Remove the screw from the LPH stay.

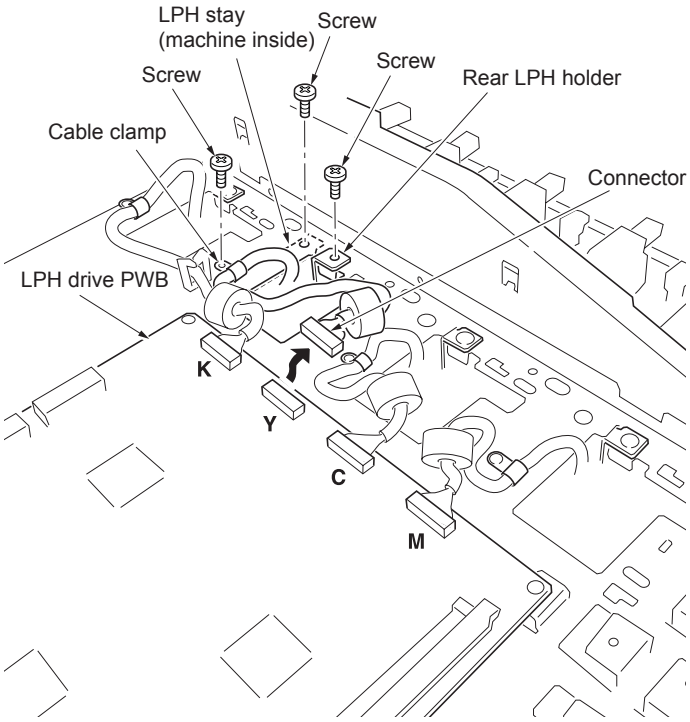


Figure 1-6-61

14. Put the cable of LPH assembly Y into the machine.
15. Lift the rear LPH holder a little and pull out LPH assembly Y until it stops.
16. Slide LPH assembly Y toward the left side of the machine a little to release contact and remove it.

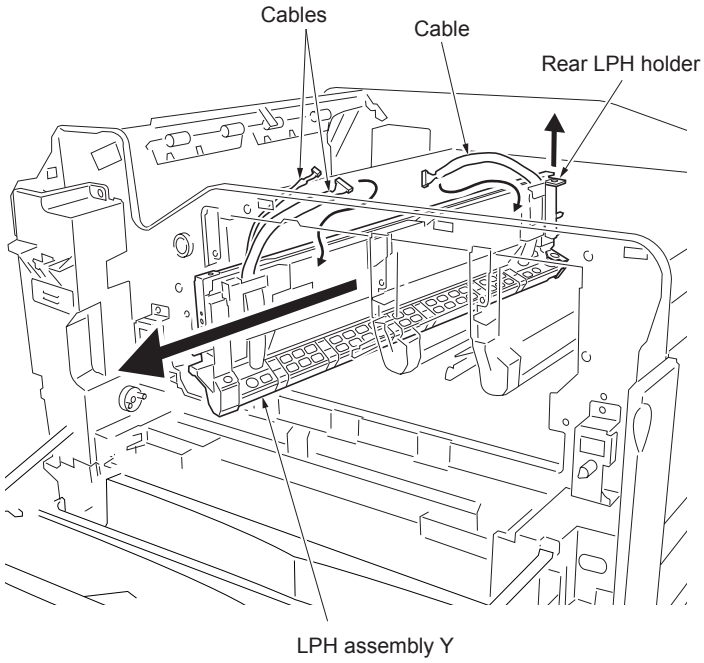


Figure 1-6-62

17. Remove the two spring and LPH from the front and rear LPH holders.
18. Check the LPH and then refit all the removed parts.
19. Adjust the focus of the LED print head (see page 1-6-44).
    If the LPH is replaced with a new one, reattach the parts that have been removed in the procedure to step 6, in the reverse procedure. Then, adjust the focus of the LPH after performing the following procedure.

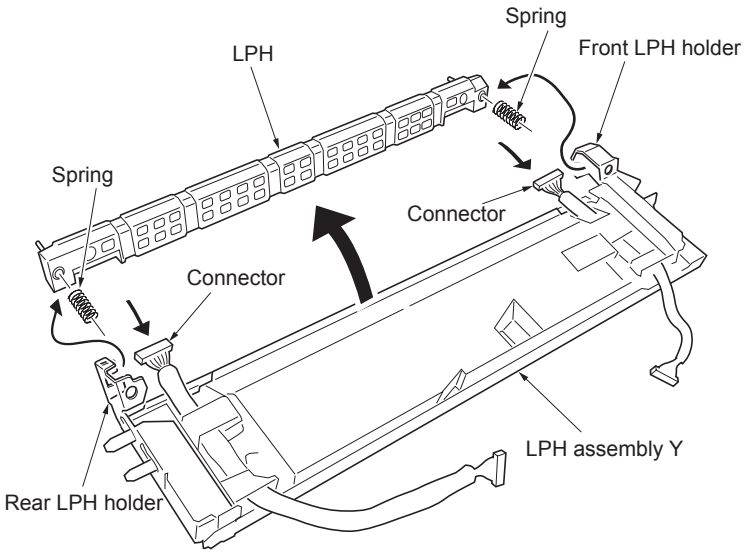


Figure 1-6-63

20. Connect the LPH light quantity correction data ROM PWB supplied with the new LPH to the ROM connector Y of the LPH drive PWB.
21. Connect the power plug and turn the power switch on.
22. Check that LED1 on the LPH drive PWB blinks and then lights up steadily, turn off the power switch, and remove the power plug from the outlet.
23. Remove the LPH light quantity correction data ROM PWB.
24. Reattach the parts that have been removed in steps 5 to 1, in the reverse procedure.
25. Adjust the focus of the LED print head (see page 1-6-44).

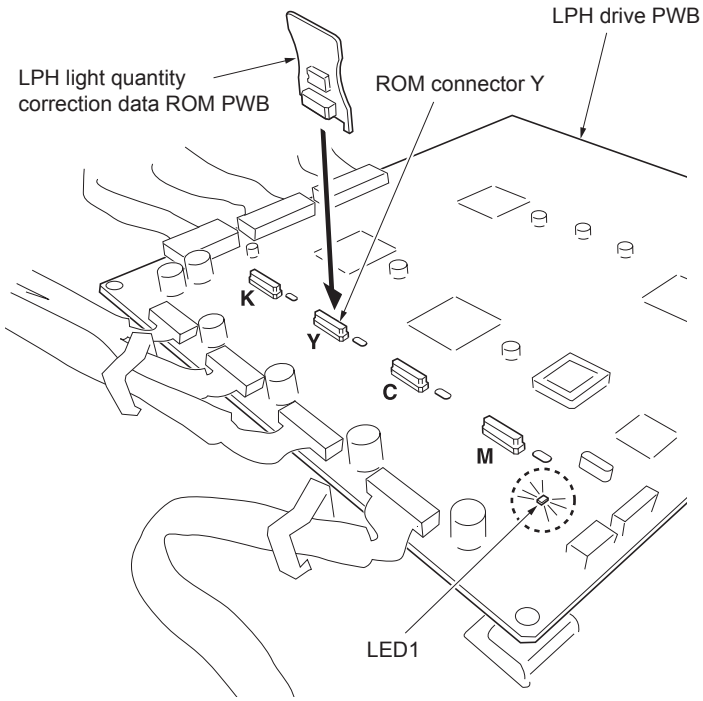


Figure 1-6-64

(10) Adjusting the focus of the LED print head

<Procedure>

1. Set A3/11” x 17” paper on the cassette.
2. Mount the memory card (CF) that includes the PG program for LPH focus adjustment into the memory card slot of the machine.
3. Use the operation panel to output the PG for LPH focus adjustment.
4. Check the focus state using the PG for LPH focus adjustment. (If the focus is proper, the blocks on the front side and the rear side of the PG for LPH focus adjustment can be checked and the density is the same.)
5. If the focus is improper, perform the following procedure.

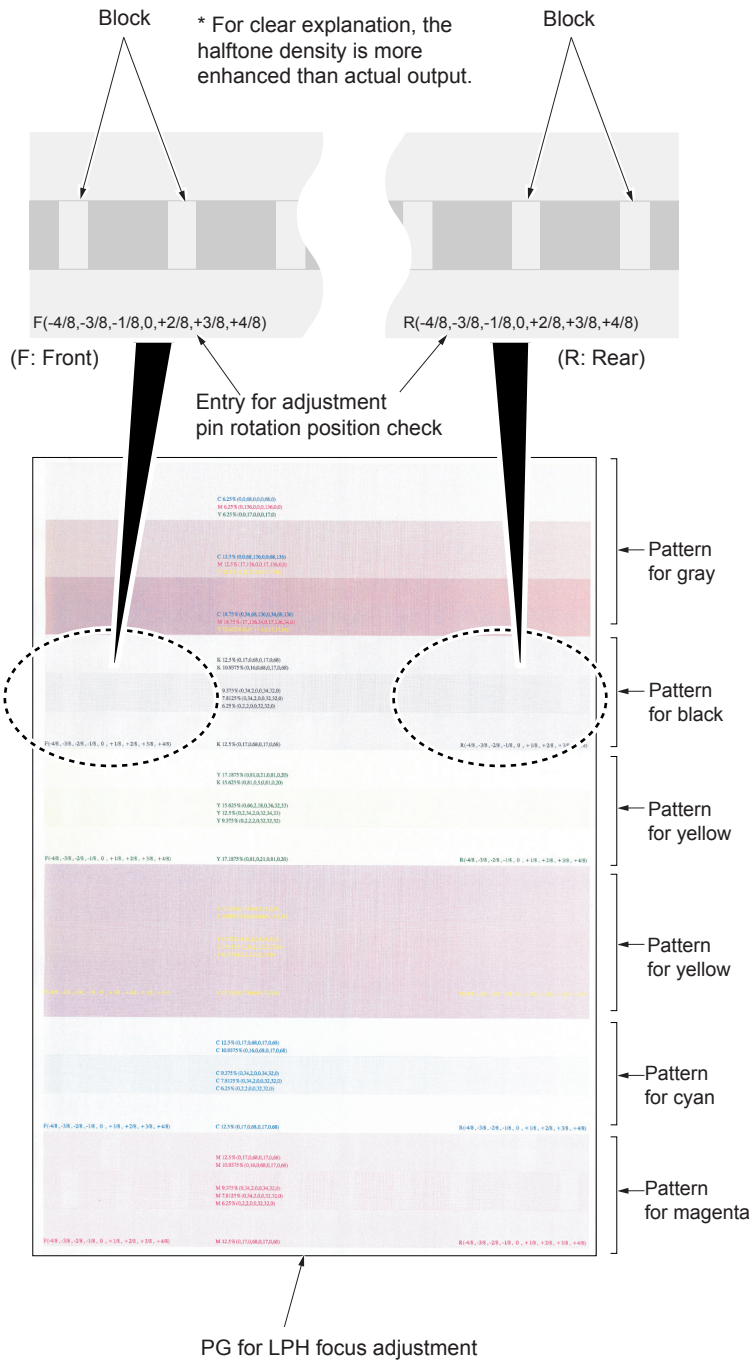


Figure 1-6-65

6. Remove the front and rear top covers.

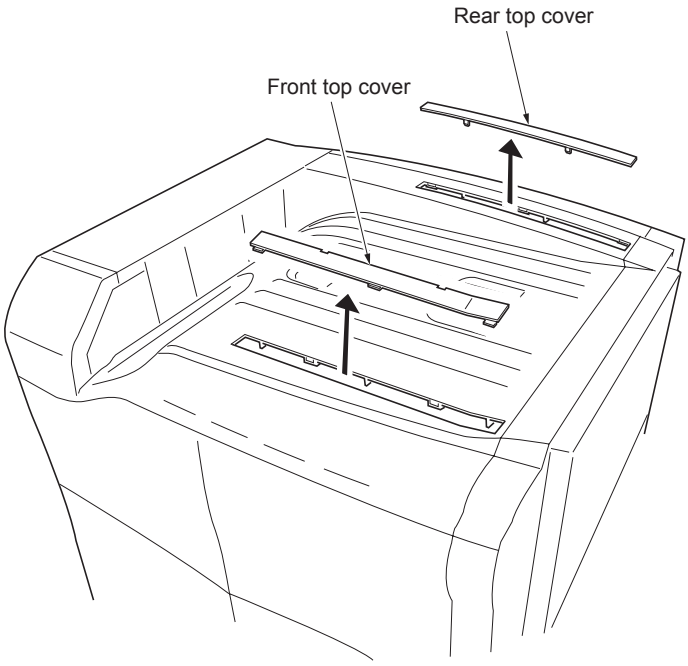


Figure 1-6-66

7. Open the front cover.
8. Open the toner container cover with the same color as the LPH to be adjusted, and remove the toner container.

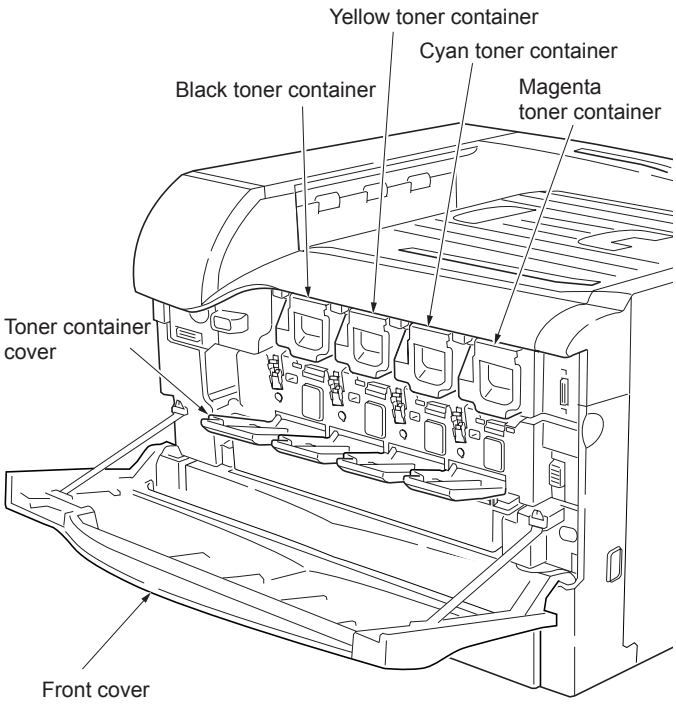
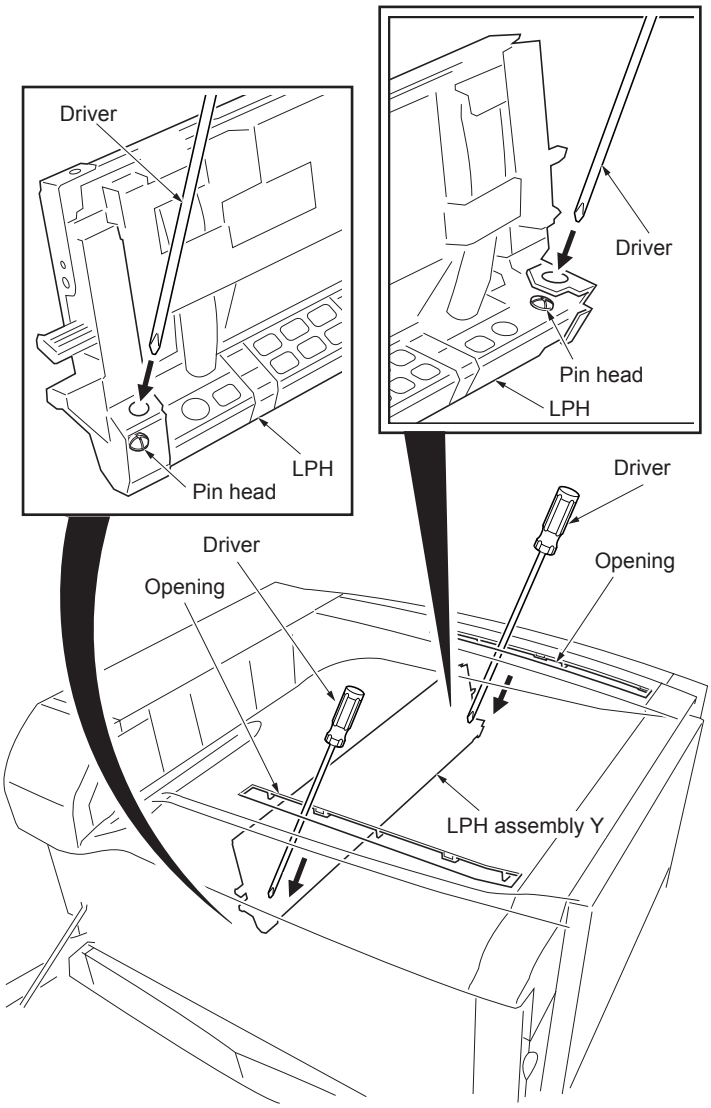
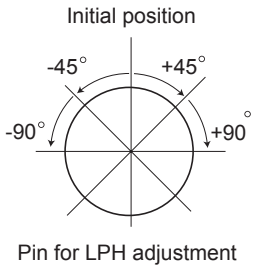


Figure 1-6-67

9. Insert a long screwdriver through the opening on the side to be adjusted into the machine and position the tip of the screwdriver to the pin head of the pin for LPH adjustment.
10. At the first adjustment, turn the screwdriver in either direction by 1/8 turn (45°) to see whether or not the LPH is closer to the drum or to find the direction of deviation of focus. After this, turn the screwdriver by 1/8 turn (45°) and do not turn more than ± 1/2 turn (180°) from the initial position.
11. Pull out the screwdriver, attach the toner container, and close the toner container cover and the front cover.
12. Output the PG pattern for focus adjustment and check the state of focus (see page 1-6-41).
    If the deviation of focus becomes larger, the turning direction of the screwdriver in step 10 was not proper. Turn the screwdriver in the reverse direction in step 10 next time. If the deviation of focus is improved, the turning direction of the screwdriver was proper. Turn the screwdriver in the same direction in step 10 next time.
13. Repeat steps 7 to 12 until the focus becomes proper.





Distance between LPH and drum

Pin for LPH adjustment		Distance between LPH and drum
Turning term	Turning angle	
-2/8	-90°	Farther by 0.12 mm
-1/8	-45°	Farther by 0.06 mm
0	Initial position	-
+1/8	+45°	Closer by 0.06 mm
+2/8	+90°	Closer by 0.12 mm

Figure 1-6-68

2-1-1 Paper feed section

As the paper feed methods, this printer provides paper feed from the paper cassette which can hold 500 sheets of paper, paper feed from the MP tray which can hold 150 sheets of paper (80g/m^2), and, in addition, paper feed from the optional paper feeder.
The Paper feed section is composed of paper cassette, primary paper feed unit, MP tray, MP tray feed unit and paper feed unit.

(1) Paper cassette, primary paper feed unit and paper feeder feed section

The paper cassette is fit underneath the primary paper feed unit. The paper stored in the paper cassette is lifted up so that it is contacted against the forwarding roller as the bottom plate in the paper cassette is raised by the lifter mechanism. The sheet at top is rewound to the forwarding roller and sent to the paper feed roller which forward the paper in the printer. In order to prevent paper misfeed during feeding, the lower paper feed pulley which is positioned face-to-face with the paper feed roller acts to prevent feeding more than one sheet at a turn of the forwarding roller.
The paper feeder feed section feeds paper from the optional paper feeder installed at the lower part of the printer to the paper feed unit through the feed B roller and the feed B pulley.

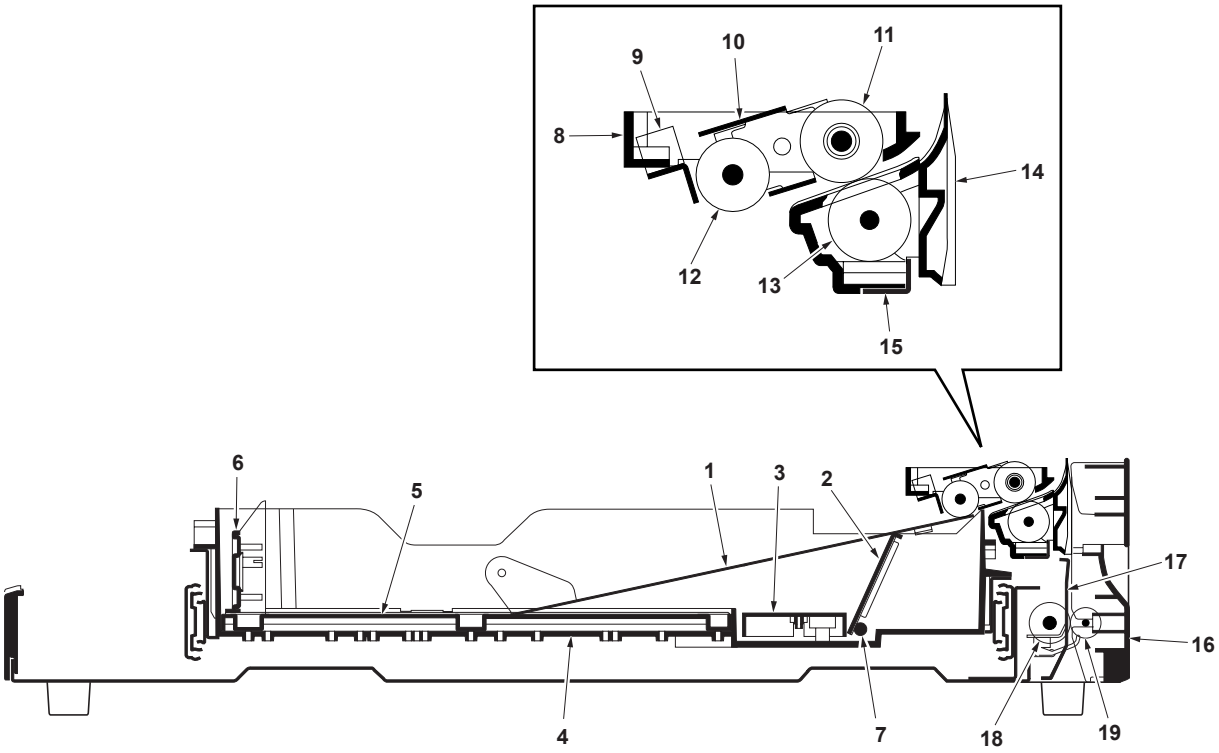


Figure 2-1-1 Paper cassette, primary paper feed unit and paper feeder feed section

(1) Bottom plate
(2) Lift plate
(3) Cursor rail A
(4) Paper cassette
(5) Cursor rail C
(6) Cassette cursor C
(7) Cassette lift shaft
(8) Upper primary paper feed unit housing
(9) Forwarding pulley collar
(10) Forwarding pulley support plate
(11) Paper feed roller
(12) Forwarding roller
(13) Lower paper feed pulley
(14) Junction guide
(15) Housing reinforcing plate
(16) Right cover 2
(17) Lower feed plate
(18) Feed B roller
(19) Feed B pulley

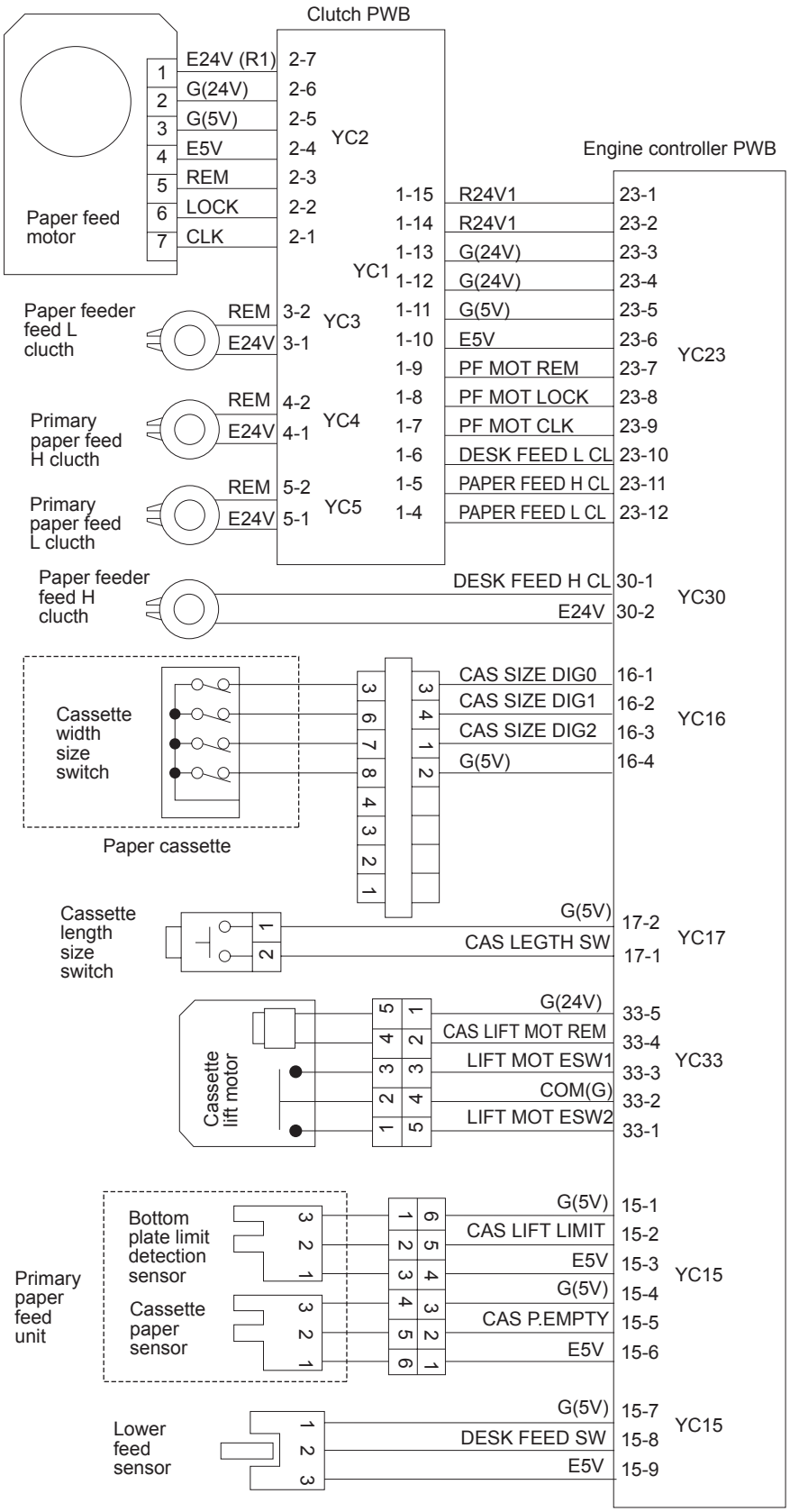


Figure 2-1-2 Paper cassette, primary paper feed unit and paper feeder feed section block diagram

(2) MP tray feed unit and paper feed unit

The MP tray feed unit and the paper feed unit are fitted on the rail as a unit and can be detached from and refitted to the printer.
The MP tray feed unit moves paper loaded in the MP tray with the paper lift mechanism constructed of the lift plate up/down solenoid and the MP tray lift plate so that the paper comes in contact with the MP tray feed roller. The paper is pulled out with rotation of the MP tray feed roller and is fed to the upper registration roller and the lower registration roller of the paper feed unit. In order to prevent paper misfeed during feeding, the MP tray retard roller which is positioned face-to-face with the MP tray feed roller acts to prevent feeding more than one sheet at a turn of the MP tray feed roller.
The paper feed unit detects paper fed from the MP tray, paper cassette or optional paper feeder at the registration sensor and feeds the paper to the transfer belt of the transfer unit through the upper registration roller and the lower registration roller according to the processing timing of the process section.

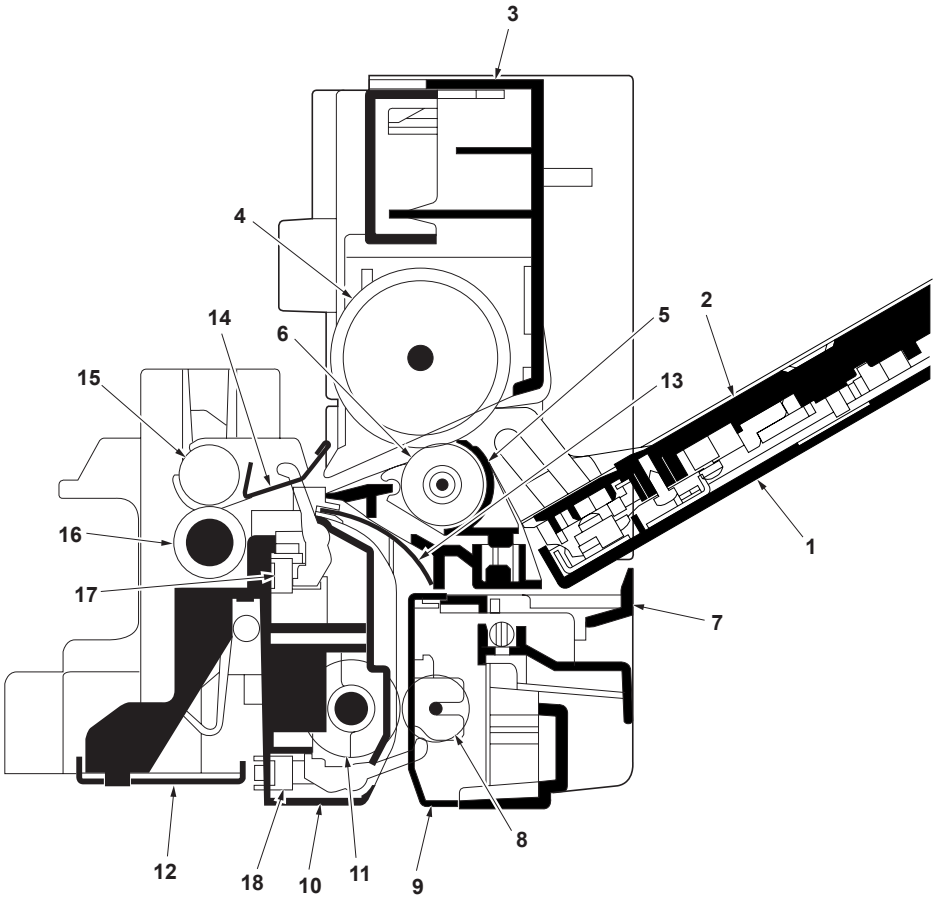


Figure 2-1-3 MP tray feed unit and paper feed unit

(1) MP tray
(2) MP tray lift plate
(3) MP tray feed frame
(4) MP tray feed roller
(5) Retard roller holder
(6) MP tray retard roller
(7) Right cover 1
(8) Paper feed pulley
(9) Lower paper feed guide
(10) Paper feed frame
(11) Feed roller
(12) Lower paper feed plate
(13) Lower registration guide
(14) Upper registration guide
(15) Upper registration roller
(16) Lower registration roller
(17) Registration sensor
(18) Upper feed sensor

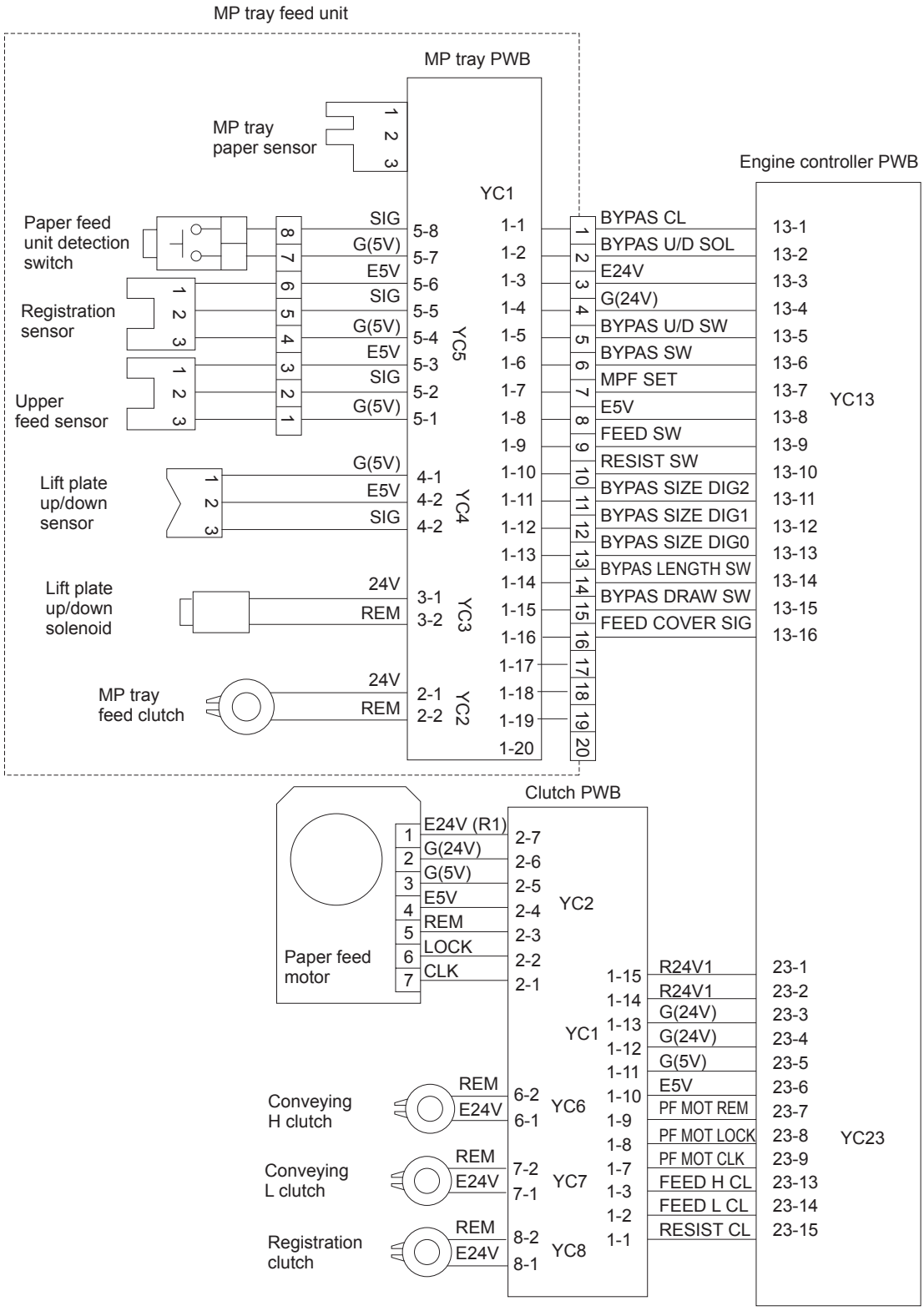


Figure 2-1-4 MP tray feed unit and paper feed unit block diagram

2-1-2 Process section

The process section consists of the developing section, the process units that integrate the drum and cleaning sections, the main charger unit on each process unit that can be detached and refitted, and the LED print head mounted to the printer frame.

(1) Developers and drum unit

The process units have the same shape for four colors: magenta, cyan, yellow, and black. In the process unit, the drum surface is charged with discharge of the main charger wire in the main charger unit and an electrostatic latent image is formed on the drum surface by irradiating LED light (dots) from the LED print head. The electrostatic latent image is processed into a toner image through toner transfer from the developing magnet A roller and then the toner image is transferred to the transfer belt of the transfer unit. For a color image, four color toner images are superposed and transferred. After transfer is complete, toner remaining on the drum surface is chipped off with the drum cleaning blade of the cleaning section and is ejected out of the process unit with the cleaning screw. Also electric charge remaining on the drum surface is eliminated by irradiating the eraser lamp for preparing for next discharge of the main charger wire.

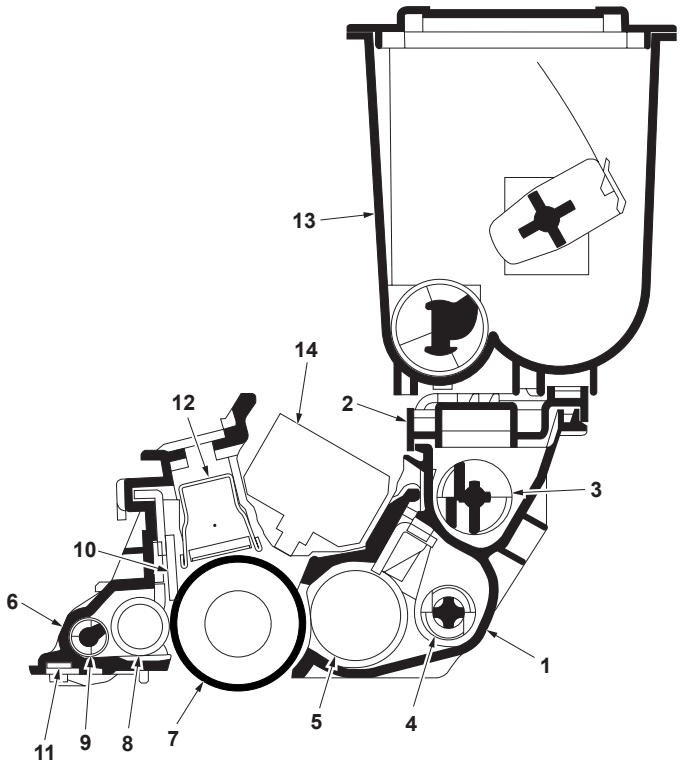


Figure 2-1-5 Process unit and toner container

(1) Developing case
(2) Developing spacer cover
(3) Upper developing screw
(4) Lower developing screw
(5) Magnet A roller
(6) Drum frame
(7) Drum
(8) Cleaning roller
(9) Cleaning screw
(10) Cleaning drum plate
(11) Eraser lamp
(12) Main charger unit
(13) Toner container
(14) LED print head

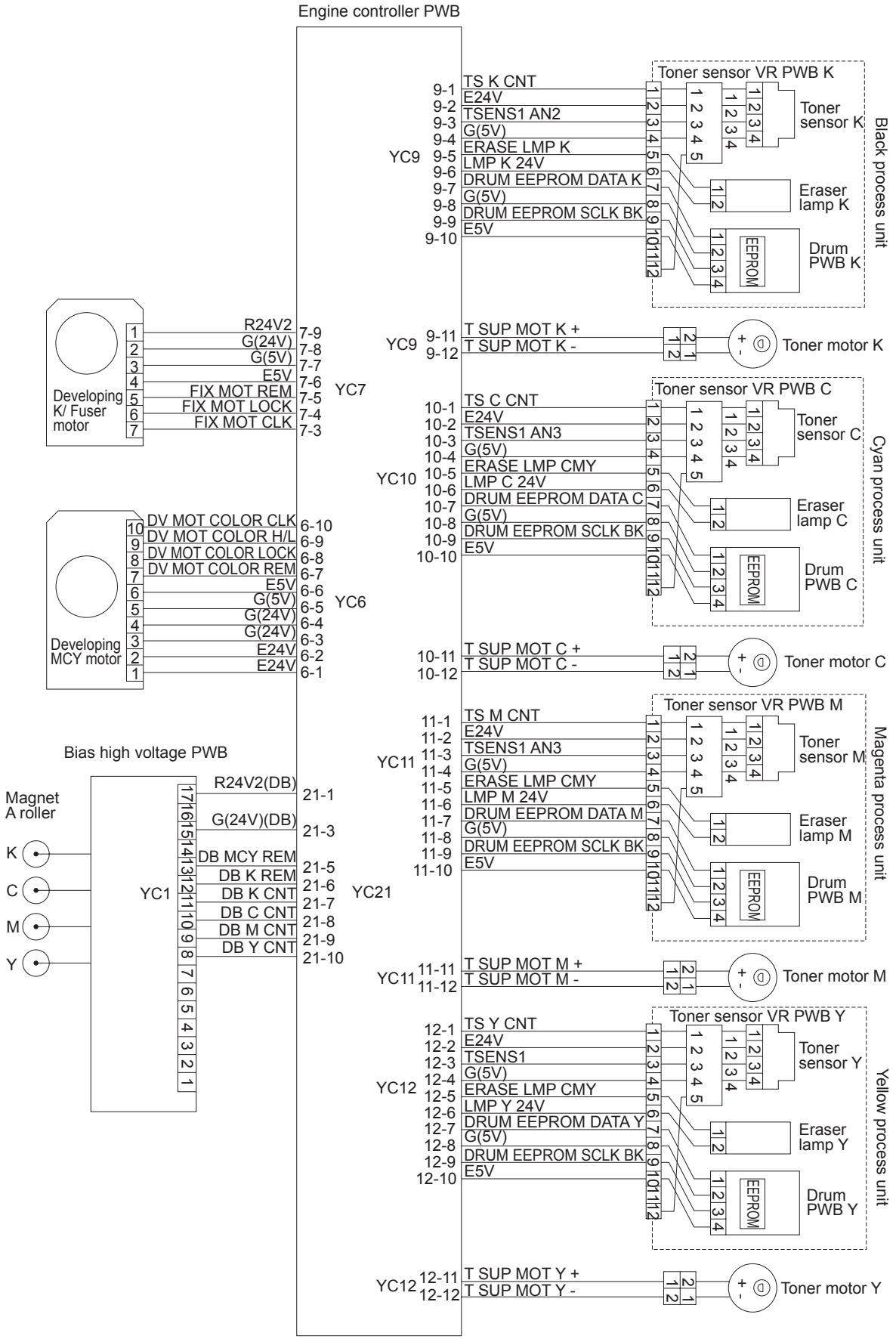


Figure 2-1-6 Process section block diagram

(2) Main charger unit

The main charger units have the same shape for four colors: magenta, cyan, yellow, and black.Main charger unit is comprised of the main charger wire, main charger grid, main charger shield, and the main charger cleaner which are modularized and fitted to the process unit.

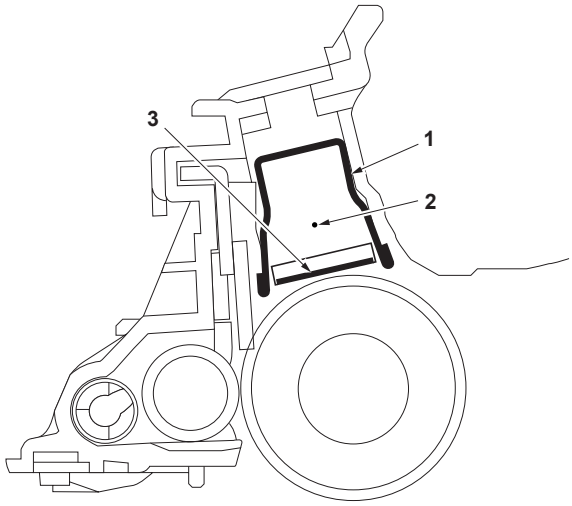


Figure 2-1-7 Main charger unit

(1) Main charger shield
(2) Main charger wire
(3) Main charger grid

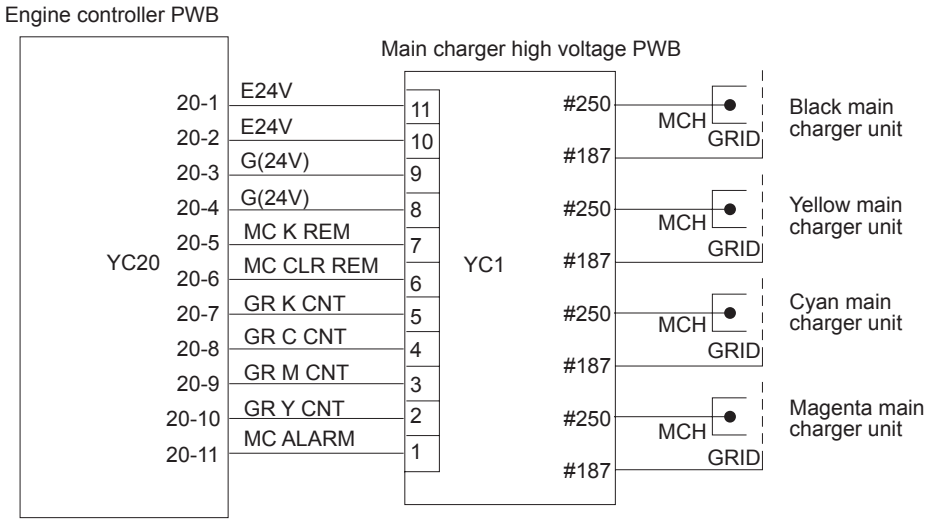


Figure 2-1-8 Main charger output block diagram

(3) LED print head

The LED print head, which has effective printing width of 303.126 mm, consists of 56 LED chips to which 7,168 illuminant (LED) devices in total are mounted, two lines of SELFOC lens arrays, etc. The image data processed on the main controller PWB is transferred to the LPH drive PWB through the engine interface PWB, and each illuminant (LED) device on/off drive is controlled on the LPH drive PWB based on the image data to output LED light dots onto the drum surface.

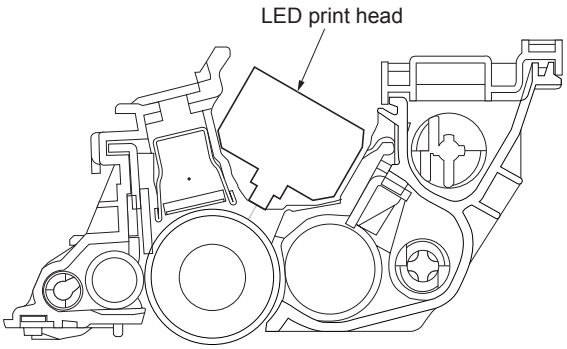


Figure 2-1-9 LED print head

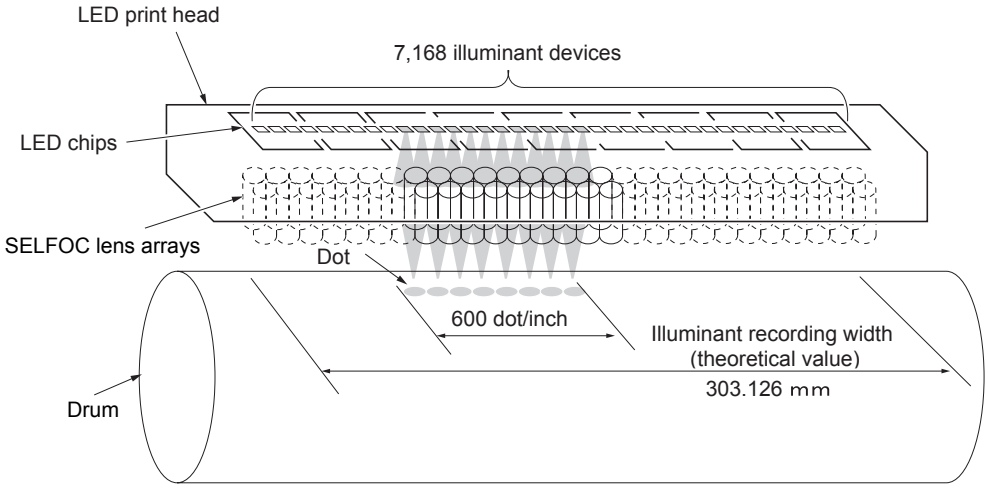


Figure 2-1-10 LED print head

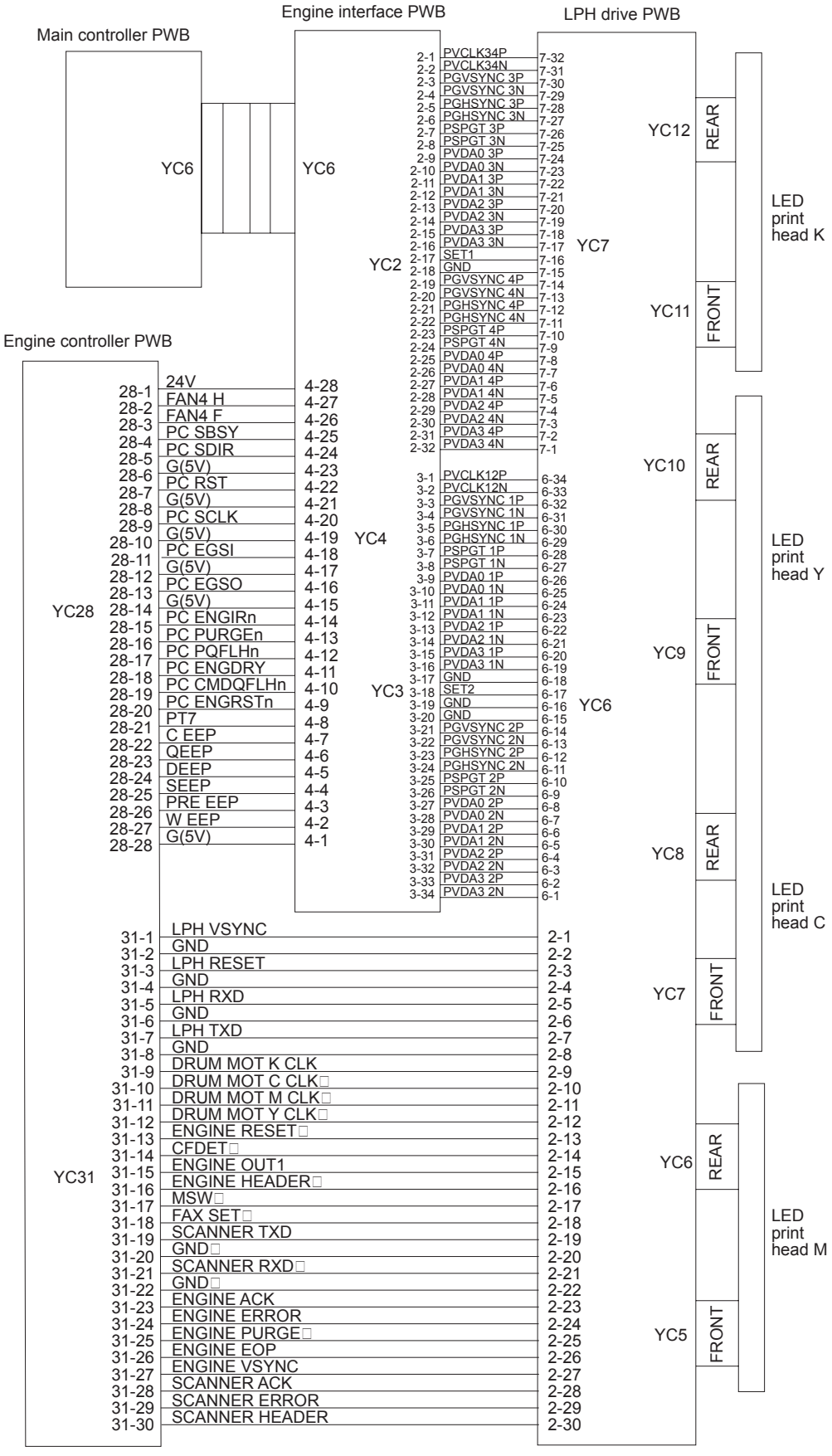


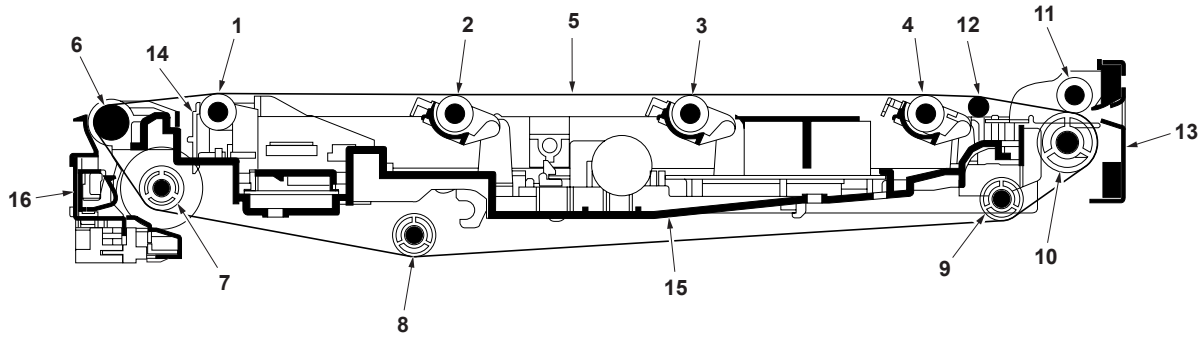
Figure 2-1-11 LED print head section block diagram

2-1-3 Transfer section

The transfer section includes the transfer belt, four transfer rollers opposed to the color drums of the process units, transfer high voltage PWB, etc. and is configured as a transfer unit. The transfer unit is connected to the paper feed section mounted to the rail and can be pulled out from the printer.

(1) Transfer unit

Paper fed from the paper feed unit is conveyed by adsorbing to the transfer belt with the adsorption roller to which bias is applied. The bias voltage applied to the adsorption roller is controlled depending on the paper type and the paper interval. For the transfer belt, an ionic conductor belt made of PCDF (fluorochemical resin) is used. Inside the transfer belt, four transfer rollers opposed to the four color drums are incorporated, and toner is transferred from the drum to the paper with the action of the applied transfer bias.
For color printing, each color toner image formed on each color drum is superposed sequentially and transferred to form a full color toner image on paper. For monochrome printing, transfer rollers Y, C, and M and the transfer lift roller are moved away from the transfer belt with the transfer roller lift mechanism, and only transfer roller K that is fixed to a position is used for transfer. The transfer roller lift mechanism slides the transfer lever by rotating the transfer cam with the transfer roller lift motor and moves transfer rollers Y, C, and M away or lifts them by enabling each transfer bearing of transfer rollers Y, C, and M linked to the transfer lever. For separation of paper from the drum or the transfer belt after toner transfer, the self stripping method is used.
At the lower part of the transfer unit, two toner ID sensors are provided for measuring the density of toner transferred directly onto the transfer belt at the time of calibration for correcting print density. The transferred toner is collected by controlling the transfer belt and the yellow drum to half speed and applying reverse bias to the yellow and magenta transfer rollers to draw toner on the transfer belt to the drum for collection.



(1) Transfer roller K
(2) Transfer roller Y
(3) Transfer roller C
(4) Transfer roller M
(5) Transfer belt
(6) Drive roller
(7) Toner ID sensor roller
(8) Transfer idle roller
(9) Tension roller
(10) Idle roller
(11) Adsorption roller
(12) Transfer lift roller
(13) Adsorption roller plate
(14) Eraser bracket
(15) Transfer frame
(16) Sensor plate

Figure 2-1-12 Transfer unit

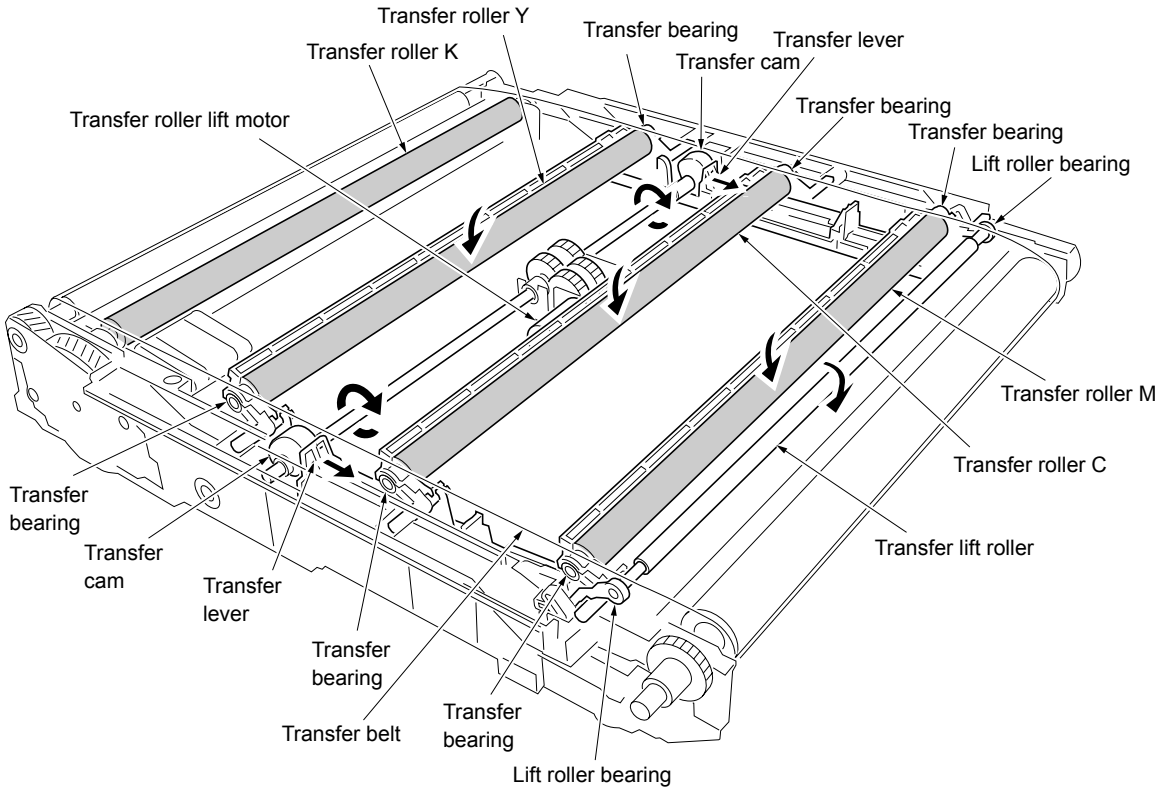


Figure 2-1-13 Transfer rollers Y, C, M lifter mechanism

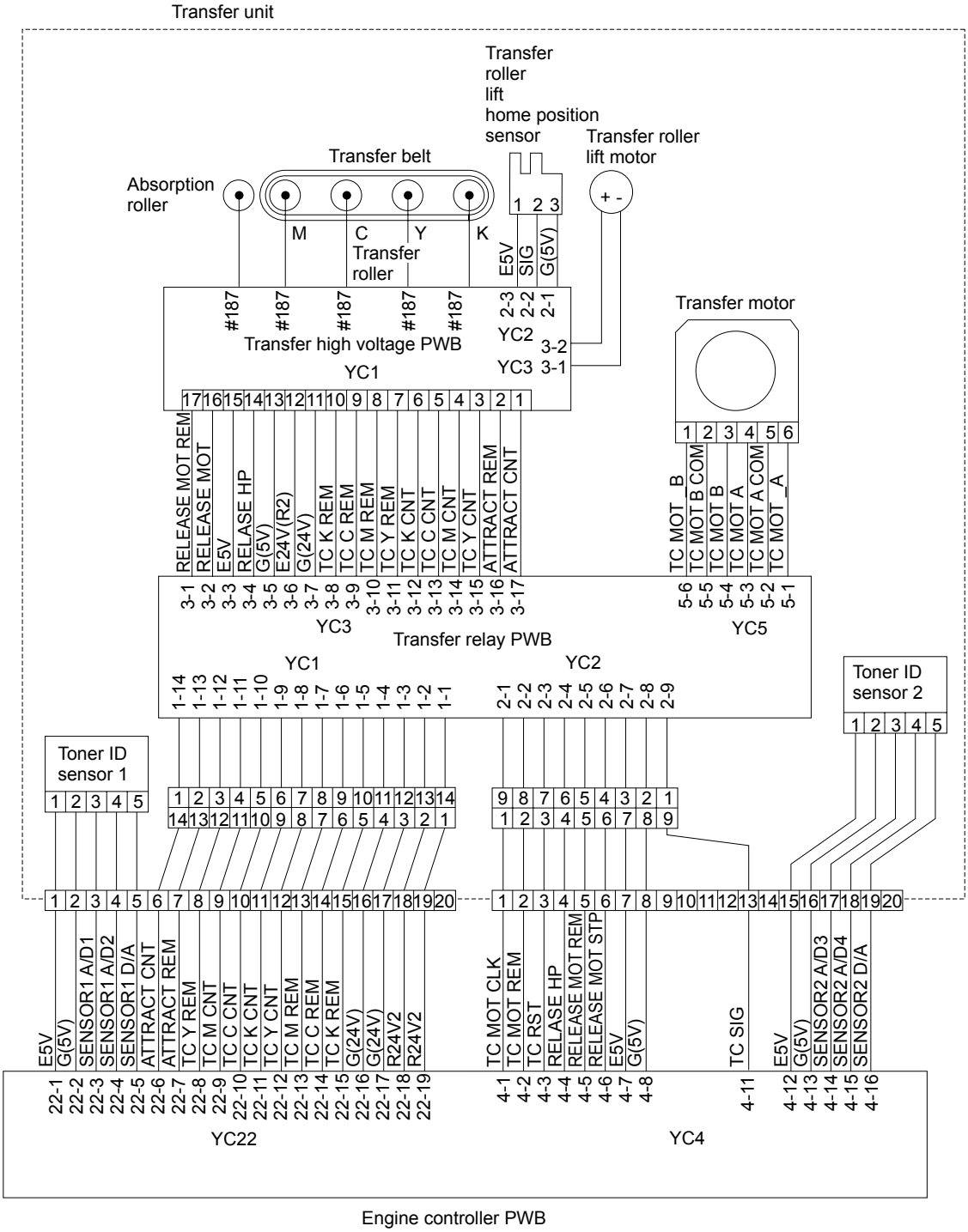


Figure 2-1-14 Transfer section block diagram

A full color image is developed by recoating four colors on the paper which adsorbs into the transfer belt. If the density of each color is not kept constant, the resultant color image will be deteriorated. The two toner ID sensors mounted on the transfer belt maintain the constant color fidelity.
The toner ID sensor includes a LED, deflection beam splitters of BS1 and BS2, photo diode PD2 and PD3 that scale toner density, and associated components.
The deflection beam splitter 1 (BS1) splits the light from the LED to S wave and P wave. S wave oscillates vertically in reference to the entrance plane; whereas, P wave oscillates horizontally in reference to the entrance plane. S wave reaches the photo diode (PD1) and acts to stabilize the luminosity of the LED by means of the feed back circuit. P wave is irradiated to toner, then it produces scattered light wave S and reflection wave P which bounced on the primary transfer belt. They reach the deflection beam splitter 2 (BS2) where they are distinguished as P wave and S wave, respectively, then detected by photo diode 2 (PD2) and photo diode 3 (PD3).

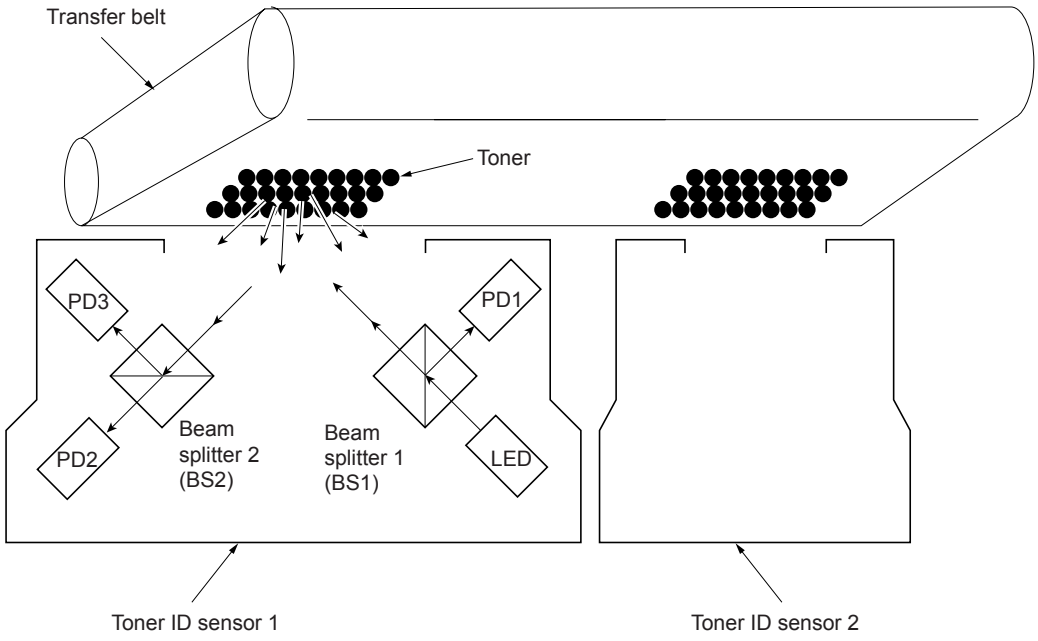


Figure 2-1-15 Toner ID sensor

2-1-4 Fuser section

(1) Fuser unit

The fuser section includes two units of fuser rollers, fuser heater lamps, fuser thermistors, and fuser thermostats respectively and is configured as a fuser unit. Both the upper and lower fuser rollers are of a ϕ45 soft type. The upper fuser roller includes a 600 W fuser heater lamp, and the lower fuser roller includes a 400 W fuser heater lamp.
The fuser unit fixes toner to paper by catching paper fed from the transfer unit on which toner is transferred with the upper and lower fuser rollers and applying heat and pressure to the toner. Then the unit feeds the paper to the eject unit with rotation of the upper exit roller and the lower exit pulley.
On the fuser PWB in the fuser unit, a fuse for discriminating between new and old fuser units is mounted to use fuse cut operation for discriminating between the new and old types of fuse (new and old types of fuser unit).

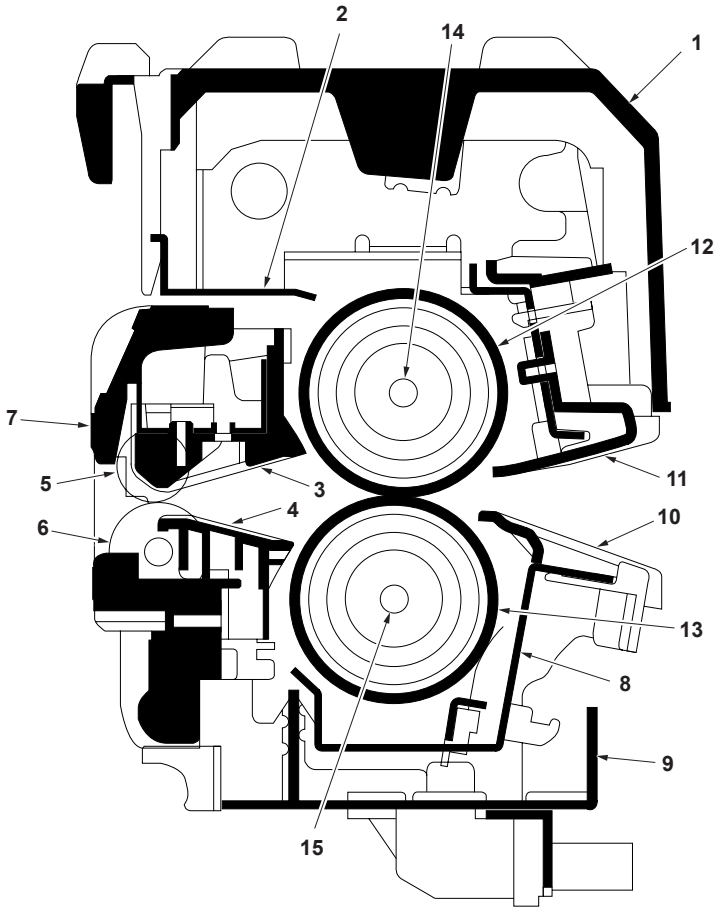


Figure 2-1-16 Fuser unit

(1) Upper fuser cover
(2) Upper fuser frame
(3) Upper exit guide
(4) Lower exit guide
(5) Upper exit roller
(6) Lower exit roller
(7) Exit roller
(8) Lower fuser roller frame
(9) Fuser frame
(10) Lower entrance guide
(11) Upper entrance guide
(12) Upper fuser roller
(13) Lower fuser roller
(14) Upper fuser heater lamp
(15) Lower fuser heater lamp

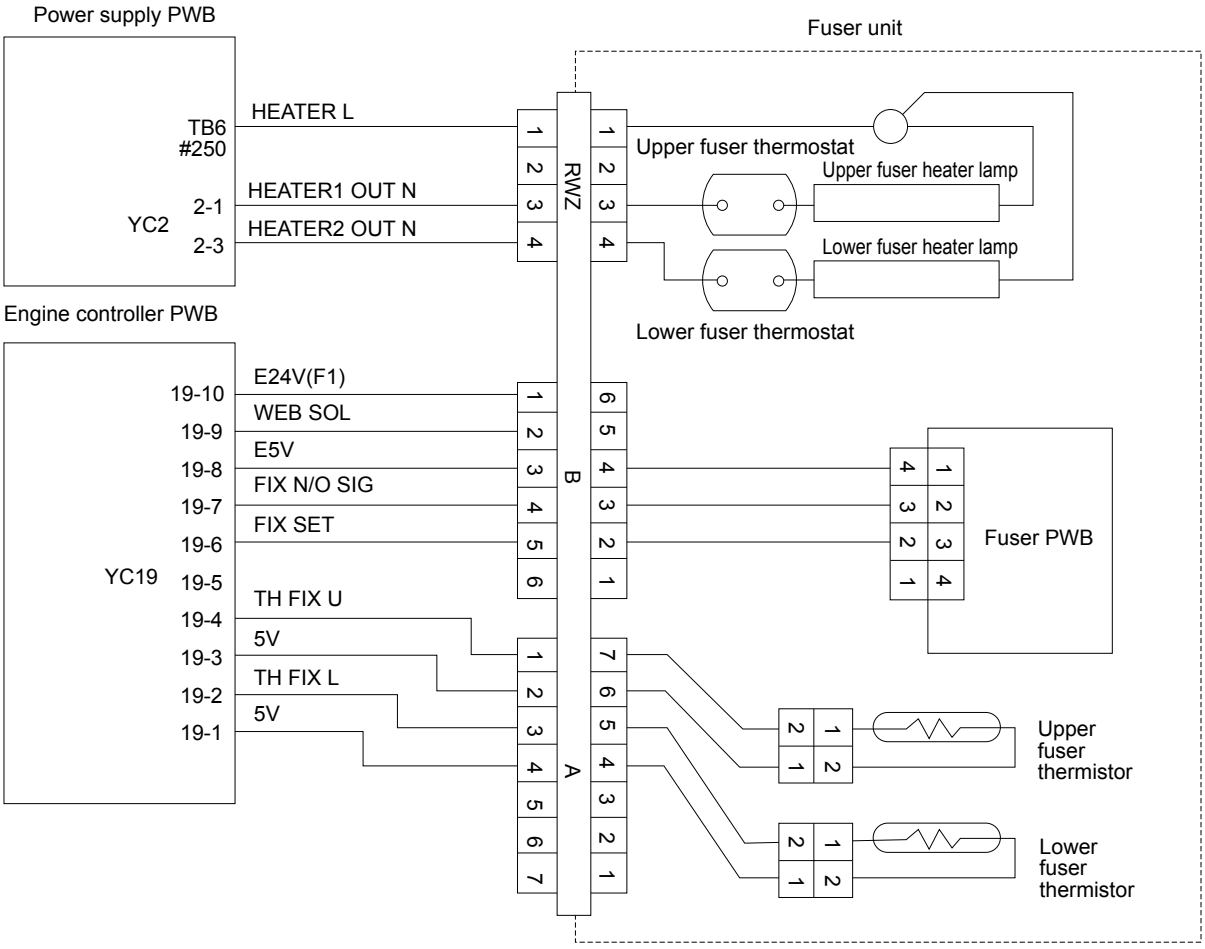


Figure 2-1-17 Fuser section block diagram

2-1-5 Exit section

(1) Eject unit and face-down exit section

The eject unit switches ejection destination for paper that is output from the fuser unit. If the ejection destination is the optional duplex unit*, the duplex change guide is activated. Normally, the duplex change guide does not operate, and paper is fed along the guide upper surface in the vertical direction. In duplex printing, the duplex change guide stands up with activation of the duplex exit solenoid and paper is fed downward (to the optional duplex unit*) along the guide lower surface. If the ejection destination is a face-up ejection section (optional face-up tray or sorter), the face-up change guide is activated. Normally, the face-up change guide does not operate, and paper is fed upward (to the face-down ejection section) in the vertical direction along the guide upper surface. For face-up ejection, the face-up change guide stands up and paper is fed into the face-up ejection section along the guide lower surface for ejection outside the printer. If the ejection destination is the face-down tray, since the duplex change guide or the face-up change guide is not activated, paper that is output from the fuser unit is fed upward in the vertical direction with the exit sponge roller, exit roller C, exit roller B, and exit pulley and then ejected to the face-down tray with exit roller A and the face-down exit pulley.

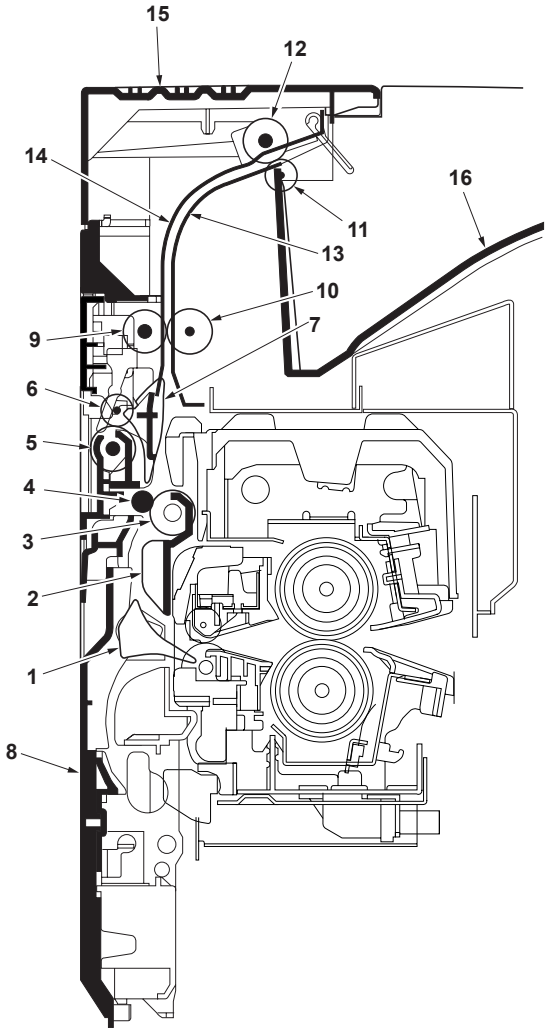


Figure 2-1-18 Eject unit and face-down exit section

(1) Duplex change guide
(2) Exit guide
(3) Exit sponge roller
(4) Exit roller E
(5) Exit roller C
(6) Face-up exit pulley
(7) Face-up change guide
(8) Exit cover
(9) Exit roller B
(10) Exit pulley
(11) Face-down exit pulley
(12) Exit roller A
(13) Exit plate A
(14) Exit plate B
(15) Left top cover
(16) Face-down tray

*Duplex unit is standard equipment for 120 V (U.S.A.) specifications.

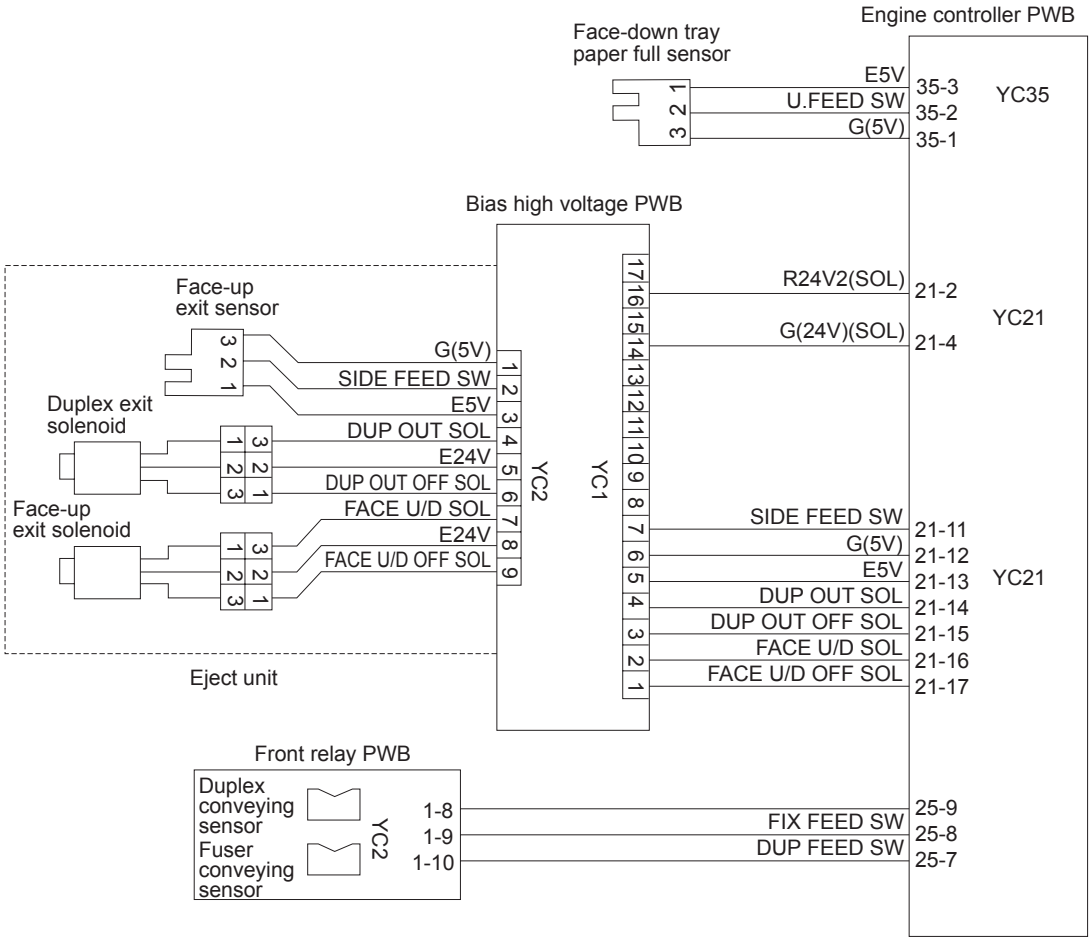


Figure 2-1-19 Eject unit and face-down exit section block diagram

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2-2-1 Electrical parts layout

(1) Main front, upper, left, inner and paper cassette

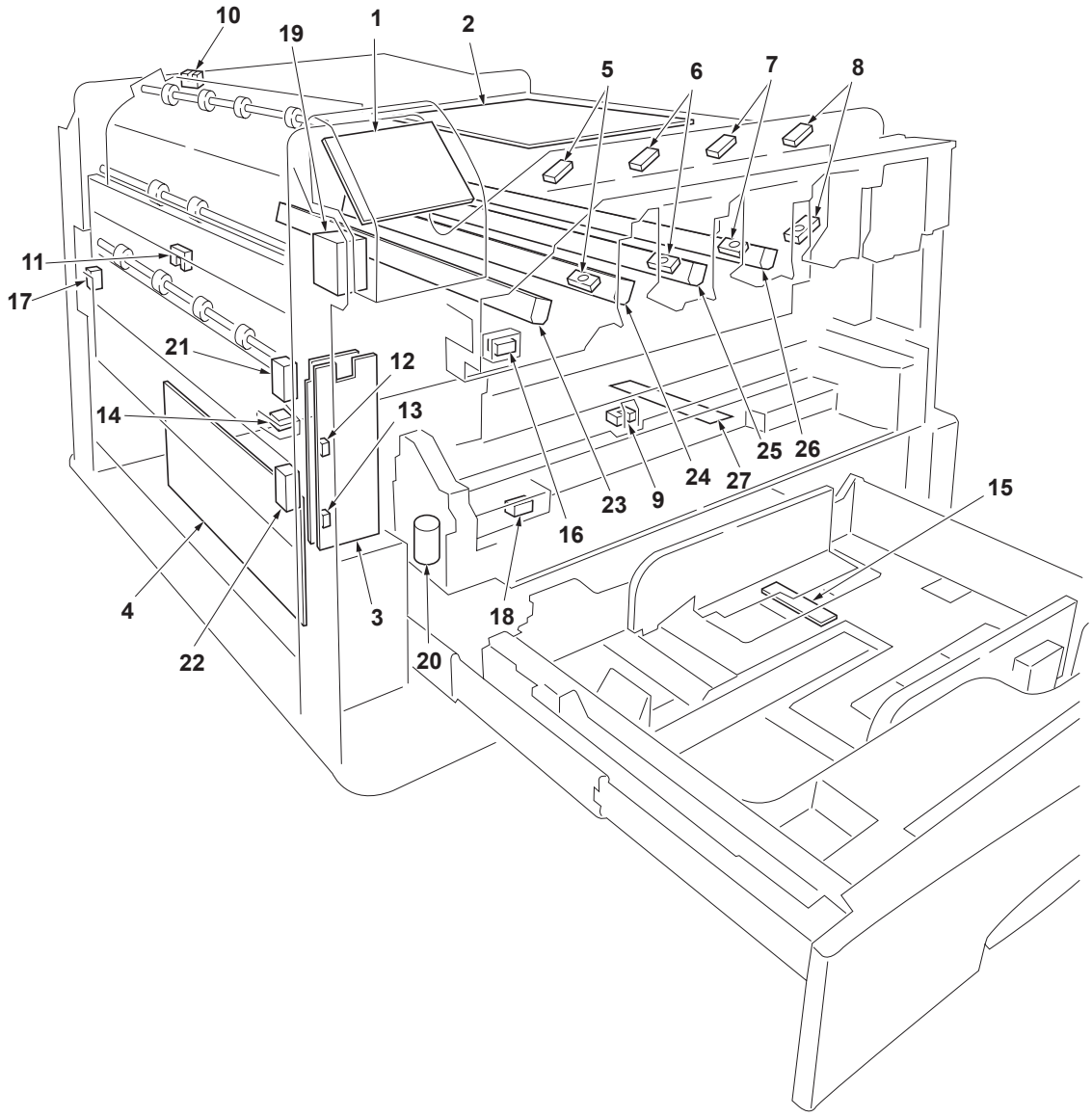

Figure 2-2-1 Main front, upper, left, inner and paper cassette

1. Operator panel PWB ..... Indicates the LCD message display and LED indicators. Controls key inputs.
2. LED drive PWB ..... Consists the LED print head control circuit and wiring relay circuit between engine controller PWB and drum units.
3. Front relay PWB..... Consists the fuser feed sensor, duplex feed sensor and wiring relay circuit.
4. Bias high voltage PWB ..... Generates the developing bias.
5. Toner empty detection sensor K ..... Measures toner in the black toner container.
6. Toner empty detection sensor Y ..... Measures toner in the yellow toner container.
7. Toner empty detection sensor C ..... Measures toner in the cyan toner container.
8. Toner empty detection sensor M..... Measures toner in the magenta toner container.
9. Waste toner full sensor PWB ..... Detects the waste toner box being full.
10. Face-down tray paper full sensor..... Detects whether the face-down tray is full.
11. Face-up exit sensor ..... Detects paper jam at the face-up exit section.
12. Fuser conveying sensor..... Detects paper jam at the fuser unit.

13. Duplex conveying sensor ..... Detects paper jam at the outlet for the duplex unit.
14. Cassette length size switch ..... Detects paper length in the paper cassette.
15. Cassette width size switch ..... Detects paper width in the paper cassette.
16. Front cover open/close switch ..... Detects the front cover is open.
17. Left cover safety switch ..... Monitors whether the left cover is open and cuts off the 24 V DC power source.
18. Waste toner box detection switch ..... Detects the waste toner box is installed.
19. Power switch ..... Turns ON/OFF the AC power source.
20. Waste toner box motor ..... Equalizes the accumulation of the waste toner inside the waste toner box.
21. Face-up exit solenoid ..... Switches the face-up change guide for face-up ejection path.
22. Duplex exit solenoid ..... Switches the duplex change guide for duplex unit conveying path.
23. LED print head K ..... Outputs the black image data to the black drum due to LED dot light.
24. LED print head Y ..... Outputs the yellow image data to the yellow drum due to LED dot light.
25. LED print head C ..... Outputs the cyan image data to the cyan drum due to LED dot light.
26. LED print head M ..... Outputs the magenta image data to the magenta drum due to LED dot light.
27. Dehumidifier heater (Optional) ..... Dehumidification of the paper in a cassette.

(2) Main rear

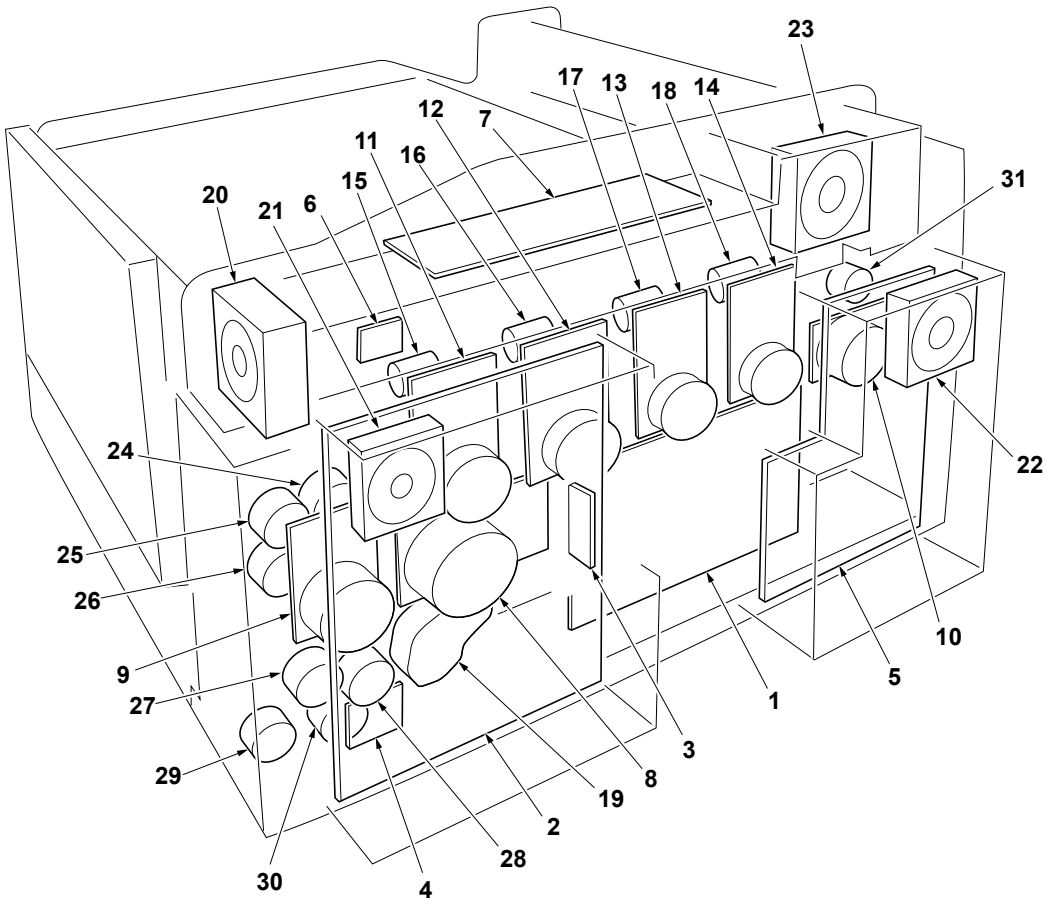

Figure 2-2-2 Main rear

1. Engine controller PWB ..... Controls printer hardware such as high voltage/bias output control, paper conveying system control, and fuser temperature control, etc.
2. Main controller PWB ..... Controls the software such as the print data processing, interface with PC and the network, etc.
3. Code ROM PWB ..... System program (firmware).
4. Clutch PWB ..... Drives the registration clutch, conveying H clutch, conveying L clutch, primary paper feed H clutch, primary paper feed L clutch and paper feeder feed clutch L.
5. Power supply PWB ..... After full-wave rectification of AC power supply input, switching for converting to 24 V DC, 5 V DC, and 3.3 V DC for output.
6. Temperature /humidity sensor PWB ..... Detects the ambient temperature and humidity.
7. Main high voltage PWB ..... Generates the main charger high voltage.
8. Developing MCY motor ..... Drives the developer units of magenta/cyan/yellow process units.
9. Paper feed motor ..... Drives the paper feed section.
10. Developing K/fuser motor ..... Drives the developer unit of black process unit, fuser unit, paper exit section and paper conveying section.
11. Drum motor M ..... Drives the magenta drum unit of the magenta process unit.
12. Drum motor C ..... Drives the cyan drum unit of the cyan process unit.
13. Drum motor Y ..... Drives the yellow drum unit of the yellow process unit.
14. Drum motor K ..... Drives the black drum unit of the black process unit.
15. Toner motor M ..... Drives the toner feed section of the magenta toner container.
16. Toner motor C ..... Drives the toner feed section of the cyan toner container.
17. Toner motor Y ..... Drives the toner feed section of the yellow toner container.
18. Toner motor K ..... Drives the toner feed section of the black toner container.
19. Cassette lift motor ..... Operates the cassette operation plate inside the paper cassette.
20. Main charger fan motor ..... Sweeps out ozone generated in the main charger unit.

21. Main controller PWB cooling fan motor..... Dissipates heat from the main controller PWB.
22. Power supply PWB cooling fan motor..... Dissipates heat from the power supply PWB.
23. Main cooling fan motor..... Dissipates air for cooling the inside of the machine and ozone generated in the main charger unit.
24. Registration clutch ..... Controls the primary paper feed.
25. Conveying H clutch ..... Controls the drive of paper feed unit.
26. Conveying L clutch..... Controls the drive of paper feed unit.
27. Primary paper feed L clutch ..... Controls the drive of primary paper feed unit.
28. Primary paper feed H clutch ..... Controls the drive of primary paper feed unit.
29. Paper feeder feed H clutch ..... Controls the drive of paper feed from the paper feeder.
30. Paper feeder feed L clutch..... Controls the drive of paper feed from the paper feeder.
31. Fuser clutch ..... Controls the drive of fuser unit and exit unit.

(3) Main right and primary paper feed unit

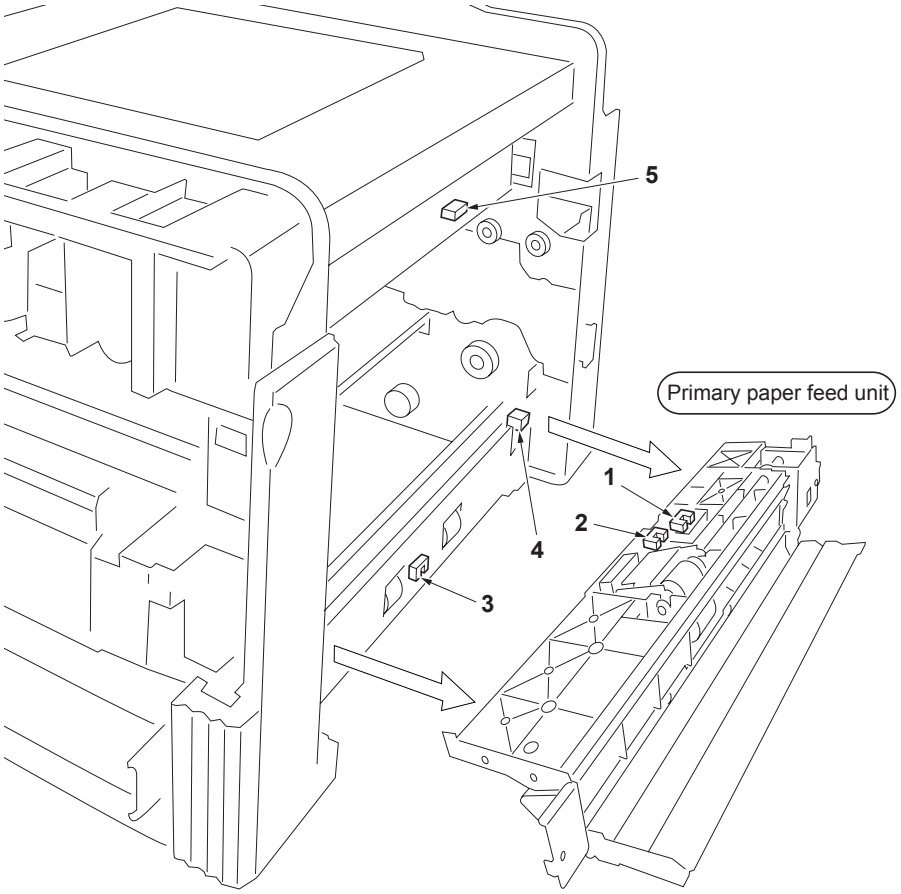

Figure 2-2-3 Main right and primary paper feed unit

1. Cassette paper sensor ..... Detects paper in the paper cassette.
2. Bottom plate limit detection sensor ..... Detects activation of upper limit of the bottom plate in the paper cassette.
3. Lower feed sensor ..... Detects paper jam feeding from optional paper feeder.
4. Right cover open/close switch 2 ..... Detects right cover 2 is open.
5. Paper feed unit detection switch ..... Detects the paper feed unit (transfer unit) is installed.

(4) Paper feed unit, MP tray unit and transfer unit

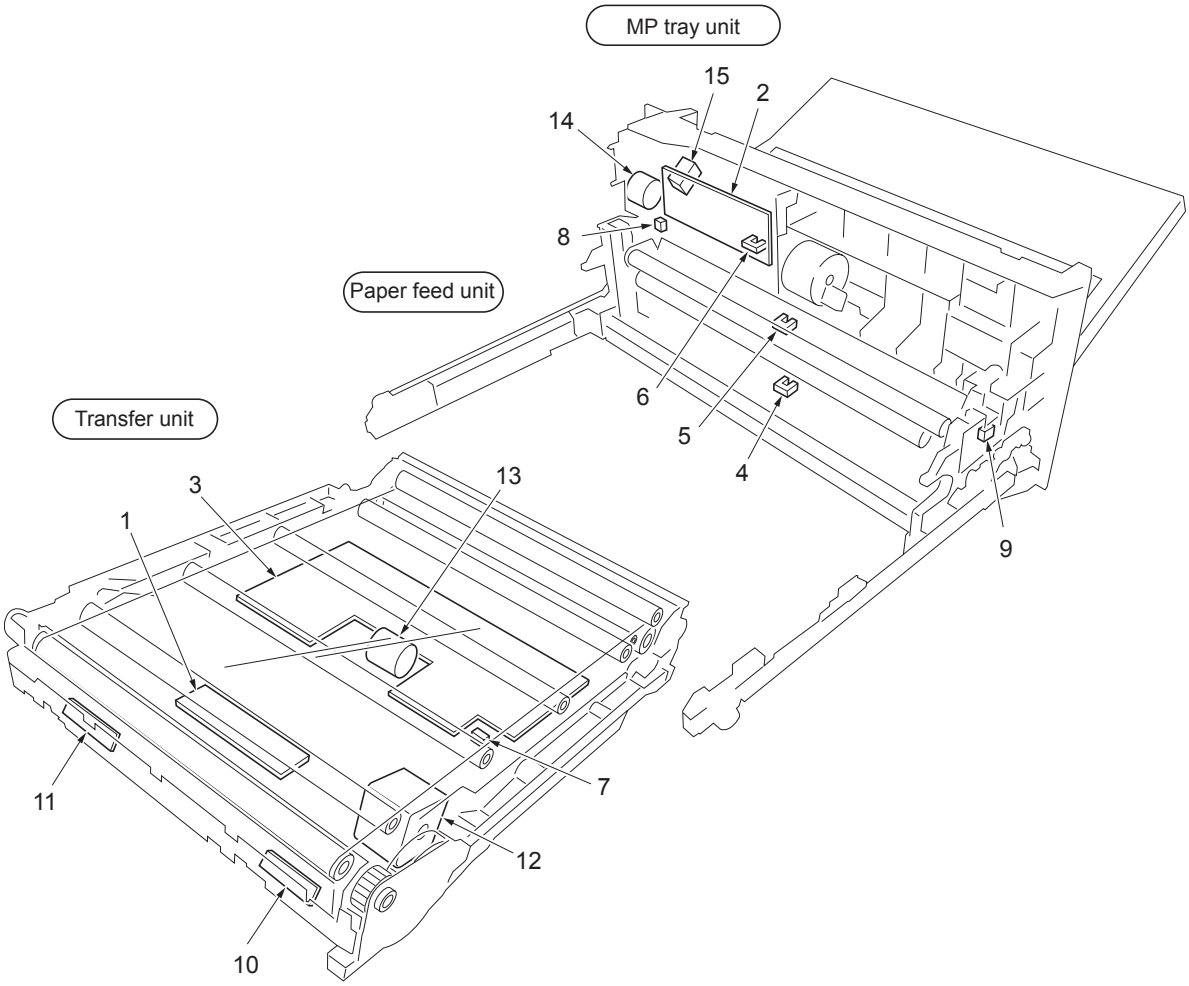

Figure 2-2-4 Paper feed unit, MP tray unit and transfer unit

1. Transfer relay PWB..... Consists the wiring relay circuit of the engine controller PWB.
2. MP tray PWB ..... Consists the MP tray paper sensor and the wiring relay circuit.
3. Transfer high voltage PWB ..... Generates the transfer bias.
4. Upper feed sensor ..... Detects paper jam in the paper feed unit.
5. Registration sensor ..... Detects the timing of primary feeding and paper jam.
6. MP tray paper sensor..... Detects paper on the MP tray.
7. Transfer roller lift home position sensor ..... Detects of home position for lift/moving away operation of transfer rollers M, C, and Y.
8. Bottom plate up/down sensor ..... Detects the operation position of the MP tray bottom plate on the MP tray.
9. Right cover open/close switch 1 ..... Detects right cover 1 is open.
10. Toner ID sensor 1..... Measures image density for color calibration.
11. Toner ID sensor 2..... Measures image density for color calibration.
12. Transfer motor..... Drives the transfer belt.
13. Transfer roller lift motor ..... Drives for lift/moving away operation of transfer rollers M, C, and Y.
14. MP tray feed clutch ..... Controls paper feed from the MP tray.
15. Lift plate up/down solenoid ..... Controls drive of MP tray lift plate up/down.

(5) Process unit and fuser unit

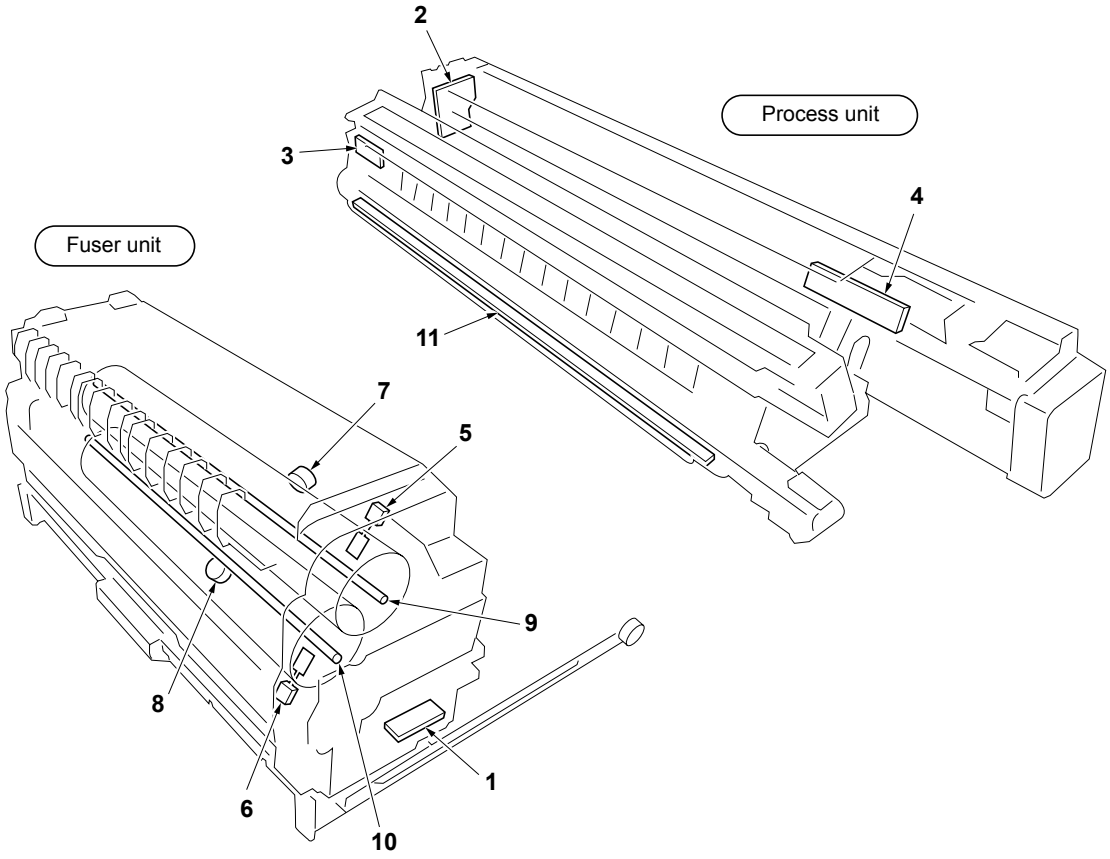

Figure 2-2-5 Process unit and fuser unit

1. Fuser PWB..... Consists fuse for discriminating between new and old fuser units.
2. Toner sensor VR PWB K, C, M, Y..... Consists VR for adjusting toner sensor in each color process unit.
3. Drum PWB K, C, M, Y..... Consists EEPROM for storage of individual drum information on each color drum.
4. Toner sensor K, C, M, Y..... Measures toner in the each process unit.
5. Upper fuser thermistor ..... Measures the upper heat roller temperature.
6. Lower fuser thermistor ..... Measures the lower heat roller temperature.
7. Upper fuser thermostat ..... Disable power for the upper heater lamp in emergency.
8. Lower fuser thermostat ..... Disable power for the lower heater lamp in emergency.
9. Upper fuser heater lamp ..... Energize the upper heat roller.
10. Lower fuser heater lamp ..... Energize the lower heat roller.
11. Eraser lamp K, C, M, Y ..... Eliminates the residual electrostatic charge on the each drum.

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2-3-1 Power supply PWB

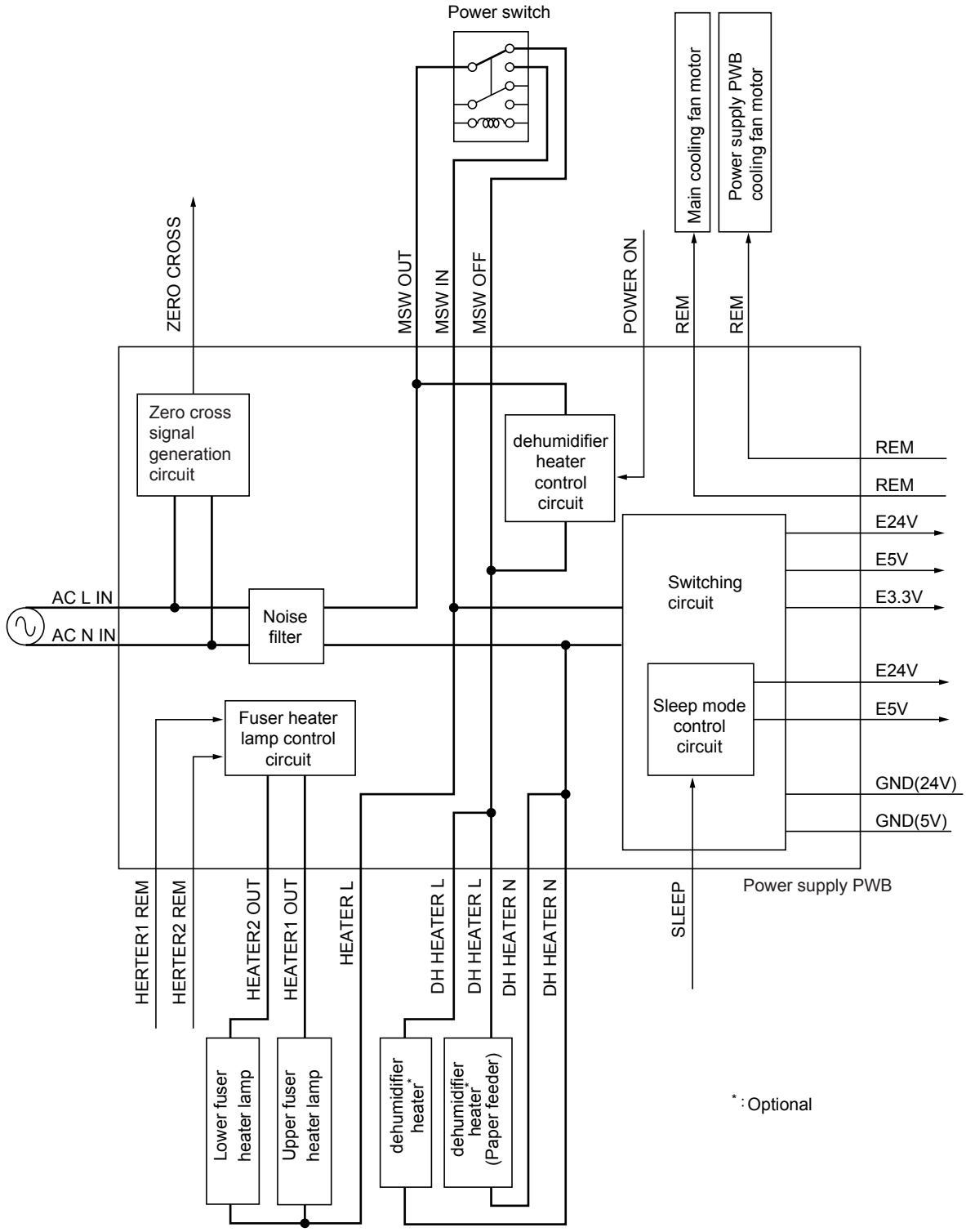

Figure 2-3-1 Power supply PWB block diagram

The power supply PWB is a switching regulator that turns on the AC power and coverts the output to 3.3 V DC, 5 V DC or 24 V DC through a switching circuit. It is composed of a fuser heater lamp control circuit, dehumidifier heater control circuit, zero cross signal generation circuit, and sleep mode control circuit, among other parts, and is constructed as a peripheral circuit. The fuser heater lamp control circuit and the dehumidifier heater control circuit turn on and off the parts of the AC electrical system such as the fuser heater lamp and the dehumidifier heater, etc., based on the control signals (HEATER1 REM, HEATER2 REM, POWER ON) that are output from the engine controller PWB. The zero cross signal generation circuit generates the zero cross signal (ZERO CROSS) which is the basis for the On/Off control timing of the fuser heater lamp, and outputs this to the engine controller PWB. The sleep mode control circuit halts the 5 V DC and 24 V DC output, and energy savings is achieved based on the control signal (SLEEP) which is output by the engine controller PWB during the sleep mode.

Connector	Pin No.	Signal	I/O	Voltage	Description
TB Connected to the AC inlet, fuser upper heater lamp, lower fuser heater lamp, and dehumidifier heater*	1	AC L IN	I	220 - 240 V AC 120 V AC	AC power input
	2	AC N IN	I	220 - 240 V AC 120 V AC	AC power input
	6	HEATER L	O	220 - 240 V AC 120 V AC	Power supply for upper and lower fuser heater lamp
	7	MSW OFF	O	220 - 240 V AC 120 V AC	Power supply for dehumidifier heater, [power switch OFF] Power supply for dehumidifier heater (optional paper feeder), [power switch OFF]
YC1 Connected to the power switch	1	MSW OUT	O	220 - 240 V AC 120 V AC	AC power output
	2	MSW IN	I	220 - 240 V AC 120 V AC	AC power input (via power switch)
YC2 Connected to the upper fuser heater lamp, lower fuser heater lamp, upper fuser thermostat, lower fuser thermostat, and dehumidifier heater*	1	HEATER1 OUT N	O	220 - 240 V AC 120 V AC	Power supply for upper fuser heater lamp, (On/Off)
	2	NC	-	220 - 240 V AC 120 V AC	Not used
	3	HEATER2 OUT N	O	220 - 240 V AC 120 V AC	Power supply for lower fuser heater lamp, (On/Off)
	4	NC	-	220 - 240 V AC 120 V AC	Not used
	5	DH HEATER L	O	220 - 240 V AC 120 V AC	Power supply for dehumidifier heater (optional paper feeder), (On/Off)
	6	DH HEATER L	O	220 - 240 V AC 120 V AC	Power supply for dehumidifier heater, (On/Off)
	7	NC	-	220 - 240 V AC 120 V AC	Not used
	8	DH HEATER N	O	220 - 240 V AC 120 V AC	Power supply for dehumidifier heater (optional paper feeder), common
	9	DH HEATER N	O	220 - 240 V AC 120 V AC	Power supply for dehumidifier heater
YC3	1	E24V	O	24 V DC	24 V DC power output
Connected to the engine controller PWB	2	E24V	O	24 V DC	24 V DC power output
	3	G(24V)	-	-	Ground (power)
	3	G(24V)	-	-	Ground (power)
	5	G(5V)	-	-	Ground (signal)
	6	E5V	O	5 V DC	5 V DC power output
YC4	1	E5V	O	5 V DC	5 V DC power output
Connected to the LPH drive PWB	2	E5V	O	5 V DC	5 V DC power output
	3	G(5V)	-	-	Ground (signal)
	4	G(5V)	-	-	Ground (signal)
	5	G(5V)	-	-	Ground (signal)
	6	G(5V)	-	-	Ground (signal)
	7	3.3V	O	3.3 V DC	3.3 V DC power output

Connector	Pin No.	Signal	I/O	Voltage	Description
YC5	1	G(5V)	-	-	Ground (signal)
Connected to the engine controller PWB, and engine interface PWB	2	G(5V)	-	-	Ground (signal)
	3	G(5V)	-	-	Ground (signal)
	4	G(5V)	-	-	Ground (signal)
	5	G(5V)	-	-	Ground (signal)
	6	3.3V	O	3.3 V DC	3.3 V DC power output
	7	3.3V	O	3.3 V DC	3.3 V DC power output
	8	3.3V	O	3.3 V DC	3.3 V DC power output
	9	3.3V	O	3.3 V DC	3.3 V DC power output
	10	5V	O	5 V DC	5 V DC power output
	11	5V	O	5 V DC	5 V DC power output
	12	G(5V)	-	-	Ground (signal)
	13	G(24V)	-	-	Ground (signal)
	14	24V	O	24 V DC	24 V DC power output
YC6	1	POWER ON	I	0/5 V DC	Dehumidifier heater: On/Off Dehumidifier heater (optional paper feeder): On/Off
Connected to the engine controller PWB	2	PH LED	I	5 V DC/0V	Not used
	3	PH KEY	O	0/5 V DC	Not used
	4	SLEEP	I	0/5 V DC	Sleep mode: On/Off
	5	POWER FAN	I	0/5 V DC	Power supply PWB cooling fan motor: On/Off
	6	MAIN FAN	I	0 /24 V DC	Main cooling fan motor: On/Off
	7	ZERO CROSS	O	0/5 V DC (pulse)	Zero cross signal
	8	HEATER2 REM	I	0/5 V DC	Lower fuser heater lamp: On/Off
	9	HEATER1 REM	I	0/5 V DC	Upper fuser heater lamp: On/Off
YC7	1	E24V	O	24 V DC	
Not used	2	-	-	-	
	3	G(24V)	-	-	
YC8	1	24V	O	24 V DC	
Not used	2	G(24V)	-	-	
	3	G(24V)	-	-	
	4	G(24V)	-	-	
	5	G(5V)	-	-	
	6	PH LED	O	5 V DC/0V	
	7	PH KEY	I	0/5 V DC	
YC9	1	G(24V)	-	-	Ground (power)
Connected to the power supply PWB cooling fan motor	2	REM	O	0 /24 V DC	Power supply PWB cooling fan motor: On/Off
YC10	1	G(24V)	-	-	Ground (power)
Connected to the main cooling fan motor	2	REM	O	0 /24 V DC	Main cooling fan motor: On/Off

2-3-2 Engine controller PWB

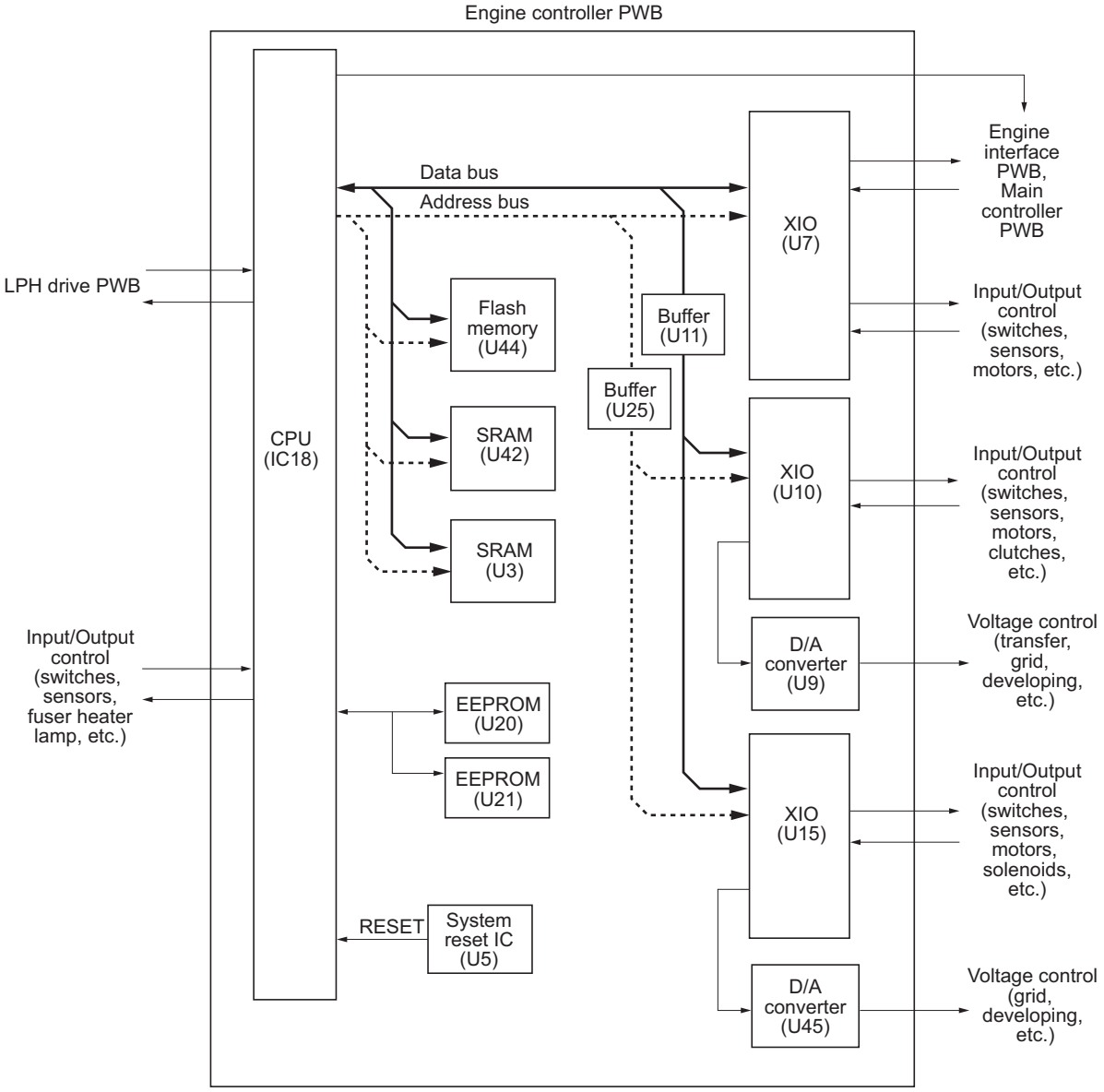

Figure 2-3-2 Engine controller PWB block diagram

The engine controller PWB is centered on the CPU (IC18) and is composed of flash memory (U44), SRAM (U3, U42), XIO (U7, U10, U15), EEPROM (U20, U21), D/A converters (U9, U45), and a system reset IC (U5), among other parts, and it handles control of such functions as the paper feeding mechanism and the developing process, but especially the control of the machine's overall hardware. The CPU (IC18) complies with the program that is stored in the flash memory (U44), refers to the various settings that are stored in the EEPROM (U20, U21), and controls the I/O of electrical parts via the I/O port of the CPU (IC18) itself, the XIO (U7, U10, U15) expanded I/O ports, and the D/A converter (U9, U45), etc. The system reset IC (U5) monitors the power voltage, as well as the operation of the CPU (IC18), and, if an abnormality occurs, it sends a reset signal (RESET) to the CPU (IC18) and the system is reset.

Connector	Pin No.	Signal	I/O	Voltage	Description
YC1	1	5V	I	5 V DC	5 V DC power input
Connected to the power supply PWB	2	G(5V)	-	-	Ground (signal)
	3	G(24V)	-	-	Ground (power)
	4	24V	I	24 V DC	24 V DC power input
YC2	9	HEATER1 REM	O	0/5 V DC	Upper fuser heater lamp: On/Off
Connected to the power supply PWB	8	HEATER2 REM	O	0/5 V DC	Lower fuser heater lamp: On/Off
	7	ZERO CROSS	I	0/5 V DC (pulse)	Zero cross signal
	6	MAIN FAN	O	0 /24 V DC	Main cooling fan motor: On/Off
	5	POWER FAN	O	0/5 V DC	Power supply PWB cooling fan motor: On/Off
	4	SLEEP	O	0/5 V DC	Sleep mode: On/Off
	3	PH KEY	I	0/5 V DC	Not used
	2	PH LED	O	5 V DC/0V	Not used
	1	POWER ON	O	0/5 V DC	Dehumidifier heater: On/Off Dehumidifier heater (optional paper feeder): On/Off
YC3	1	E24V	I	24 V DC	24 V DC power input
Connected to the power supply PWB	2	E24V	I	24 V DC	24 V DC power input
	3	G(24V)	-	-	Ground (power)
	3	G(24V)	-	-	Ground (power)
	5	G(5V)	-	-	Ground (signal)
	6	E5V	I	5 V DC	5 V DC power input
YC4	1	TC MOT CLK	O	0/5 V DC (pulse)	Transfer motor drive clock signal
Connected to the transfer relay PWB, and toner ID sensor 2	2	TC MOT REM	O	0/5 V DC	Transfer motor: On/Off
	3	TC RST	O	0/5 V DC	Transfer motor drive reset signal
	4	RELEASE HP	I	0/5 V DC	Transfer roller lift home position sensor: On/Off
	5	RELEASE MOT REM	O	0/5 V DC	Transfer roller lift motor: On/Off
	6	RELEASE MOT STP	O	0/5 V DC	Transfer roller lift motor stop signal
	7	E5V	O	5 V DC	5 V DC power output
	8	G(5V)	-	-	Ground (signal)
	11	TC SIG	I	0/5 V DC	Not used
	12	E5V	O	5 V DC	5 V DC power output
	13	G(5V)	-	-	Ground (signal)
	14	SENSOR2 A/D3	I	Analog	Toner ID sensor 2 detection input
	15	SENSOR2 A/D4	I	Analog	toner ID sensor 2 detection input
	16	SENSOR2 A/D	O	Analog	toner ID sensor 2 control voltage

Connector	Pin No.	Signal	I/O	Voltage	Description
YC5	1	E24V	O	24 V DC	24 V DC power output
Connected to the drum motor C, drum motor M, drum motor Y, and drum motor K	2	G(24V)	-	-	Ground (power)
	3	E5V	O	5 V DC	5 V DC power output
	4	G(5V)	-	-	Ground (signal)
	5	DRUM MOT C REM	O	0/5 V DC	Drum motor C: On/Off
	6	DRUM MOT C CLK	O	0/5 V DC (pulse)	Drum motor C drive clock signal
	7	DRUM MOT C LOCK	I	0/5 V DC	Drum motor C lock detection signal
	8	DRUM MOT C H/L	O	0/5 V DC	Drum motor C speed change signal
	9	E24V	O	24 V DC	24 V DC power output
	10	G(24V)	-	-	Ground (power)
	11	E5V	O	5 V DC	5 V DC power output
	12	G(5V)	-	-	Ground (signal)
	13	DRUM MOT M REM	O	0/5 V DC	drum motor M: On/Off
	14	DRUM MOT M CLK	O	0/5 V DC (pulse)	Drum motor M drive clock signal
	15	DRUM MOT M LOCK	I	0/5 V DC	Drum motor M lock detection signal
	16	DRUM MOT M H/L	O	0/5 V DC	Drum motor M speed change signal
	17	E24V	O	24 V DC	24 V DC power output
	18	G(24V)	-	-	Ground (power)
	19	E5V	O	5 V DC	5 V DC power output
	20	G(5V)	-	-	Ground (signal)
	21	DRUM MOT Y REM	O	0/5 V DC	Drum motor Y: On/Off
	22	DRUM MOT Y CLK	O	0/5 V DC (pulse)	Drum motor Y drive clock signal
	23	DRUM MOT Y LOCK	I	0/5 V DC	Drum motor Y lock detection signal
	24	DRUM MOT Y H/L	O	0/5 V DC	Drum motor Y speed change signal
	25	E24V	O	24 V DC	24 V DC power output
	26	G(24V)	-	-	Ground (power)
	27	E5V	O	5 V DC	5 V DC power output
	28	G(5V)	-	-	Ground (signal)
	29	DRUM MOT K REM	O	0/5 V DC	Drum motor K: On/Off
	30	DRUM MOT K CLK	O	0/5 V DC (pulse)	Drum motor K drive clock signal
	31	DRUM MOT K LOCK	I	0/5 V DC	Drum motor K lock detection signal
	32	DRUM MOT K H/L	O	0/5 V DC	Drum motor K speed change signal

Connector	Pin No.	Signal	I/O	Voltage	Description
YC6	1	E24V	O	24 V DC	24 V DC power output
Connected to the developing MCY motor	2	E24V	O	24 V DC	24 V DC power output
	3	G(24V)	-	-	Ground (power)
	4	G(24V)	-	-	Ground (power)
	5	G(5V)	-	-	Ground (signal)
	6	E5V	O	5 V DC	5 V DC power output
	7	DV MOT COLOR REM	O	0/5 V DC	Developing MCY motor: On/Off
	8	DV MOT COLOR LOCK	I	0/5 V DC	Developing MCY motor lock detection signal
	9	DV MOT COLOR H/L	O	0/5 V DC	Developing MCY motor speed change signal
	10	DV MOT COLOR CLK	O	0/5 V DC (pulse)	Developing MCY motor drive clock signal
YC7	1	FIX CL	O	0 /24 V DC	Fuser clutch: On/Off
Connected to the developing K/ fuser motor, Fuser clutch	2	E24V	O	24 V DC	24 V DC power output
	3	CLK	O	0/5 V DC (pulse)	Developing K/fuser motor drive clock signal
	4	LOCK	I	0/5 V DC	Drum motor K lock detection signal
	5	REM	O	0/5 V DC	Developing K/fuser motor: On/Off
	6	E5V	O	5 V DC	5 V DC power output
	7	G(5V)	-	-	Ground (signal)
	8	G(24V)	-	-	Ground (power)
	9	24V(R2)	O	24 V DC	24 V DC power output
YC9	1	CNT K	O	Analog	Toner sensor K control voltage
Connected to the toner sensor K, eraser lamp K, drum PWB K, and toner motor K	2	E24V	O	24 V DC	24 V DC power output
	3	TSENS K	I	Analog	Toner sensor K detection input
	4	G(5V)	-	-	Ground (signal)
	5	ERASE LAMP K	O	0 /24 V DC	Eraser lamp K: On/Off
	6	LAMP K 24V	O	24 V DC	24 V DC power output
	7	EEDATA	I/O	0/5 V DC (pulse)	EEPROM data signal (drum PWB K)
	8	G(5V)	-	-	Ground (signal)
	9	EESCLK	O	0/5 V DC (pulse)	EEPROM clock signal (drum PWB K)
	10	E5V	O	5 V DC	5 V DC power output
	11	TSUPMOT K+	O	0 /24 V DC	Toner motor K: On/Off
	12	TSUPMOT K-	I	Analog	Toner motor K over current detection input
YC10	1	CNT C	O	Analog	Toner sensor C control voltage
Connected to toner sensor C, eraser lamp C, drum PWB C, and toner motor C	2	E24V	O	24 V DC	24 V DC power output
	3	TSENS C	I	Analog	Toner sensor C detection input
	4	G(5V)	-	-	Ground (signal)
	5	ERASE LAMP C	O	0 /24 V DC	Eraser lamp C: On/Off
	6	LAMP C 24V	O	24 V DC	24 V DC power output
	7	EEDATA	I/O	0/5 V DC (pulse)	EEPROM data signal (drum PWB C)
	8	G(5V)	-	-	Ground (signal)
	9	EESCLK	O	0/5 V DC (pulse)	EEPROM clock signal (drum PWB C)
	10	E5V	O	5 V DC	5 V DC power output
	11	TSUPMOT C+	O	0 /24 V DC	Toner motor C: On/Off
	12	TSUPMOT C-	I	Analog	Toner motor C over current detection input

Connector	Pin No.	Signal	I/O	Voltage	Description
YC11	1	CNT M	O	Analog	Toner sensor M control voltage
Connected to the toner sensor M, eraser lamp M, drum PWB M, and toner motor M	2	E24V	O	24 V DC	24 V DC power output
	3	TSENS M	I	Analog	Toner sensor M detection input
	4	G(5V)	-	-	Ground (signal)
	5	ERASE LAMP M	O	0 /24 V DC	Eraser lamp M: On/Off
	6	LAMP M 24V	O	24 V DC	24 V DC power output
	7	EEDATA	I/O	0/5 V DC (pulse)	EEPROM data signal (drum PWB M)
	8	G(5V)	-	-	Ground (signal)
	9	EESCLK	O	0/5 V DC (pulse)	EEPROM clock signal (drum PWB M)
	10	E5V	O	5 V DC	5 V DC power output
	11	TSUPMOT M+	O	0 /24 V DC	Toner motor M: On/Off
	12	TSUPMOT M-	I	Analog	Toner motor M over current detection input
YC12	1	CNT Y	O	Analog	Toner sensor Y control voltage
Connected to the toner sensor Y, eraser lamp Y, drum PWB Y, toner motor Y	2	E24V	O	24 V DC	24 V DC power output
	3	TSENS Y	I	Analog	Toner sensor Y detection input
	4	G(5V)	-	-	Ground (signal)
	5	ERASE LAMP Y	O	0 /24 V DC	Eraser lamp Y: On/Off
	6	LAMP Y 24V	O	24 V DC	24 V DC power output
	7	EEDATA	I/O	0/5 V DC (pulse)	EEPROM data signal (drum PWB Y)
	8	G(5V)	-	-	Ground (signal)
	9	EESCLK	O	0/5 V DC (pulse)	EEPROM clock signal (drum PWB Y)
	10	E5V	O	5 V DC	5 V DC power output
	11	TSUPMOT Y+	O	0 /24 V DC	Toner motor Y: On/Off
	12	TSUPMOT Y-	I	Analog	Toner motor Y over current detection input
YC13	1	BYPASS CL	O	0 /24 V DC	MP tray feed clutch: On/Off
Connected to MP tray PWB, and main charger fan motor	2	BYPASS SOL	O	0 /24 V DC	Lift plate up/down solenoid: On/Off
	3	E24V	O	24 V DC	24 V DC power output
	4	G(24V)	-	-	Ground (power)
	5	BYPASS U/D SW	I	0/5 V DC	Bottom plate up/down sensor: On/Off
	6	BYPASS SW	I	0/5 V DC	MP tray paper sensor: On/Off
	7	MPFSET		0/5 V DC	Paper feed unit installation signal: Installed/Not installed
	8	E5V	O	5 V DC	5 V DC power output
	9	FEED SW	I	0/5 V DC	Upper feed sensor: On/Off
	10	RESIST SW	I	0/5 V DC	Registration sensor: On/Off
	11	BYPASS SIZE DIG2	I	0/5 V DC	Not used
	12	BYPASS SIZE DIG1	I	0/5 V DC	Not used
	13	BYPASS SIZE DIG0	I	0/5 V DC	Not used
	14	BYPASS LENGTH SW	I	0/5 V DC	Not used
	15	BYPASS DRAW SW	I	0/5 V DC	Not used
	16	FEED COVER SIG	I	0/5 V DC	Paper feed unit detection switch: Close/Open
	17	REM	O	0 /24 V DC	Main charger fan motor: On/Off
	18	G(24V)	-	-	Ground (power)

Connector	Pin No.	Signal	I/O	Voltage	Description
YC14	1	FAX RELAY	I	0/5 V DC	
Not used	2	NC	-	-	
	3	NC	-	-	
YC15	1	G(5V)	-	-	Ground (signal)
Connected to the bottom plate limit detection sensor, cassette paper sensor, lower feed sensor, and right cover open/close switch 2	2	LIFT SW	I	0/5 V DC	Bottom plate limit detection sensor: On/Off
	3	E5V	O	5 V DC	5 V DC power output
	4	G(5V)	-	-	Ground (signal)
	5	PESW	I	0/5 V DC	Cassette paper sensor: On/Off
	6	E5V	O	5 V DC	5 V DC power output
	7	G(5V)	-	-	Ground (signal)
	8	DESKFEED SW	I	0/5 V DC	Lower feed sensor: On/Off
	9	E5V	O	5 V DC	5 V DC power output
	10	G(5V)	-	-	Ground (signal)
	11	COVER-FEED SW	I	0/5 V DC	Right cover open/close switch 2: On/Off
YC16	1	CAS SIZE DIG0	I	0/5 V DC	Cassette width size switch (DIG0): On/Off
Connected to the cassette width size switch	2	CAS SIZE DIG1	I	0/5 V DC	Cassette width size switch (DIG0): On/Off
	3	CAS SIZE DIG2	I	0/5 V DC	Cassette width size switch (DIG0): On/Off
	4	G(5V)	-	-	Ground (signal)
YC17	1	SIG	I	0/5 V DC	Cassette length size sensor: On/Off
Connected to the cassette length size sensor	2	G(5V)	-	-	Ground (signal)
YC18	1	G(5V)	-	-	Ground (signal)
Connected to the duplex guide sensor (optional duplex unit*) <*Duplex unit is standard for 120 V (U.S.A.) specifications.>	2	DUP SW1	I	0/5 V DC	Duplex guide sensor: On/Off
	3	E5V	O	5 V DC	5 V DC power output
YC19	1	5V	O	5 V DC	5 V DC power output
Connected to the fuser PWB, upper fuser thermistor, and lower fuser thermistor	2	TH FIX L	I	Analog	Lower fuser thermistor detection input
	3	5V	O	5 V DC	5 V DC power output
	4	TH FIX U	I	Analog	Upper fuser thermistor detection input
	6	FIX SET	I	0/5 V DC	Fuser unit installation signal: Installed/Not installed
	7	FIX N/O REM	O	0 /24 V DC	Fuser unit new/old detecting fuse cut signal
	8	E5V	O	5 V DC	5 V DC power output
	9	-	-	-	Not used
	10	E24V (FUSE)	O	24 V DC	24 V DC power output

Connector	Pin No.	Signal	I/O	Voltage	Description
YC20	1	E24V	O	24 V DC	24 V DC power output
Connected to the main high voltage PWB	2	E24V	O	24 V DC	24 V DC power output
	3	G(24V)	-	-	Ground (power)
	4	G(24V)	-	-	Ground (power)
	5	MC K REM	O	0 /24 V DC	Main charger (K) high voltage output: On/Off
	6	MC CLR REM	O	0 /24 V DC	Main charger (C, M, Y) high voltage output: On/Off
	7	GR K CNT	O	Analog	Main charger (K) grid voltage control signal
	8	GR C CNT	O	Analog	Main charger (C) grid voltage control signal
	9	GR M CNT	O	Analog	Main charger (M) grid voltage control signal
	10	GR Y CNT	O	Analog	Main charger (Y) grid voltage control signal
	11	MC ALARM	I	0/5 V DC	Main charger output alarm signal
YC21	1	E24V	O	24 V DC	24 V DC power output
Connected to the devel-oping bias high voltage PWB	2	E24V	O	24 V DC	24 V DC power output
	3	G(24V)	-	-	Ground (power)
	4	G(24V)	-	-	Ground (power)
	5	DB MCY REM	O	0 /24 V DC	Developing bias (M, C, Y) high voltage output: On/Off
	6	DB K REM	O	0 /24 V DC	Developing bias (K) high voltage output: On/Off
	7	DB K CNT	O	Analog	developing bias (K) output voltage control signal
	8	DB C CNT	O	Analog	Developing bias (C) output voltage control signal
	9	DB M CNT	O	Analog	Developing bias (M) output voltage control signal
	10	DB Y CNT	O	Analog	Developing bias (Y) output voltage control signal
	11	SIDE FEED SW	I	0/5 V DC	Face-up exit sensor: On/Off
	12	G(5V)	-	-	Ground (signal)
	13	E5V	O	5 V DC	5 V DC power output
	14	DUP OUT SOL	O	0 /24 V DC	Duplex exit solenoid (activate): On/Off
	15	DUP OUT OFF SOL	O	0 /24 V DC	Duplex exit solenoid (return): On/Off
	16	FACE U/D SOL	O	0 /24 V DC	Face-up exit solenoid (activate): On/Off
	17	FACE U/D OFF SOL	O	0 /24 V DC	Face-up exit solenoid (return): On/Off
YC22	1	E5V	O	5 V DC	5 V DC power output
Connected to the toner ID sensor 1, and transfer relay PWB	2	G(5V)	-	-	Ground (signal)
	3	SENSOR1 A/D1	I	Analog	Toner ID sensor 1 detection input
	4	SENSOR1 A/D2	I	Analog	Toner ID sensor 1 detection input
	5	SENSOR2 A/D	O	Analog	Toner ID sensor 1 control voltage
	6	ATTRACT CNT	O	Analog	Adsorption roller high voltage output control signal
	7	ATTRACT REM	O	0 /24 V DC	Adsorption roller high voltage output: On/Off
	8	TC Y CNT	O	Analog	Transfer bias (Y) output voltage control signal
	9	TC M CNT	O	Analog	Transfer bias (M) output voltage control signal
	10	TC C CNT	O	Analog	Transfer bias (C) output voltage control signal
	11	TC BK CNT	O	Analog	Transfer bias (K) output voltage control signal
	12	TC-Y REM	O	0 /24 V DC	Transfer bias (Y) output: On/Off
	13	TC-M REM	O	0 /24 V DC	Transfer bias (M) output: On/Off
	14	TC-C REM	O	0 /24 V DC	Transfer bias (C) output: On/Off
	15	TC-BK REM	O	0 /24 V DC	Transfer bias (K) output: On/Off
	16	G(24V)	-	-	Ground (power)
	17	G(24V)	-	-	Ground (power)
	18	E24V(R2)	O	24 V DC	24 V DC power output
	19	E24V(R2)	O	24 V DC	24 V DC power output

Connector	Pin No.	Signal	I/O	Voltage	Description
YC23	1	E24V(R1)	O	24 V DC	24 V DC power output
Connected to the clutch PWB	2	E24V(R1)	O	24 V DC	24 V DC power output
	3	G(24V)	-	-	Ground (power)
	4	G(24V)	-	-	Ground (power)
	5	G(5V)	-	-	Ground (signal)
	6	E5V	O	5 V DC	5 V DC power output
	7	MOTOR REM	O	0/5 V DC	Paper feed motor: On/Off
	8	LOCK	I	0/5 V DC	Paper feed motor lock detection signal
	9	CLK	O	0/5 V DC	Paper feed motor drive clock signal
	10	DESKFEED L CL	O	0/5 V DC	Paper feeder feed L clutch: On/Off
	11	PF H CL	O	0/5 V DC	Primary feeder feed H clutch: On/Off
	12	PF L CL	O	0/5 V DC	Primary feeder feed L clutch: On/Off
	13	FEED H CL	O	0/5 V DC	Conveying H clutch: On/Off
	14	FEED L CL	O	0/5 V DC	Conveying L clutch: On/Off
	15	RESIST CL	O	0/5 V DC	Registration clutch: On/Off
YC24	1	E24V	O	24 V DC	24 V DC power output
Connected to the left cover safety switch	2	E24V	O	24 V DC	24 V DC power output
	3	NC	-	-	Not used
	4	E24V(R2)	I	24 V DC	24 V DC power input (via left cover safety switch)
	5	E24V(R2)	I	24 V DC	24 V DC power input (via left cover safety switch)
YC25	1	E5V	O	5 V DC	5 V DC power output
Connected to the front relay PWB	2	G(5V)	-	-	Ground (signal)
	3	TONER FULL	I	0/5 V DC	Waste toner sensor: On/Off
	4	BOTTLE CHECK SIG	I	0/5 V DC	Waste toner box installation detection: Installed/Not installed
	5	COLLECT MOT REM	O	0/5 V DC	Waste toner box motor: On/Off
	6	COVER FRONT SW	I	0/5 V DC	Front cover open/close switch: Close/Open
	7	DUP FEED SW	I	0/5 V DC	Duplex conveying sensor: On/Off
	8	FIX FEED SW	I	0/5 V DC	Fuser conveying sensor: On/Off
	9	UP FEED SW	I	0/5 V DC	Face-down exit sensor: On/Off
	10	BOTTLE MOT LOCK	I	0/5 V DC	Waste toner box motor drive lock detection signal
	11	FTH SENS	I	0/5 V DC	Not used
	12	MSW REM	O	0 /24 V DC	Power switch shutoff signal
	13	24V	O	24 V DC	24 V DC power output
	14	LED REM	O	0/5 V DC	Waste toner sensor (emitting): On/Off
	15	MSW SIG	I	0 /24 V DC	Main switch ON detection signal
	16	E24V	O	24 V DC	24 V DC power output
YC26	1	POWER OFF	O	0/5 V DC	Finisher power supply unit OFF signal: Off/On
Connected to the finisher (optional)	2	E5V	O	5 V DC	5 V DC power output
	3	FINISHER RXD	I	0/5 V DC (pulse)	Finisher serial communication signal (receive)
	4	G(5V)	-	-	Ground (signal)
	5	FINISHER TXD	O	0/5 V DC (pulse)	Finisher serial communication signal (transmit)
	6	G(5V)	-	-	Ground (signal)
	7	RES FIN-ISHER	O	0/5 V DC	Finisher reset signal
	8	SET FIN-ISHER	I	0/5 V DC	Finisher installation detection signal: Installed/Not installed

Connector	Pin No.	Signal	I/O	Voltage	Description
YC27	1	DESK/ DECK TXD	O	0/5 V DC (pulse)	Paper feeder serial communication signal (transmit)
Connected to the paper feeder (optional)	2	G(5V)	-	-	Ground (signal)
	3	DESK/ DECK RXD	I	0/5 V DC (pulse)	Paper feeder serial communication signal (receive)
	4	G(5V)	-	-	Ground (signal)
	5	RES DECK	O	0/5 V DC	Paper feeder reset signal
	6	E5V	O	5 V DC	5 V DC
	5	RES DECK	O	0/5 V DC	Paper feeder reset signal
	6	E5V	O	5 V DC	5 V DC power output
	7	G(24V)	-	-	Ground (power)
	8	E5V	O	5 V DC	5 V DC power output
	9	G(5V)	-	-	Ground (signal)
	10	DESK FEED SW	I	0/5 V DC	Paper feeder upper feed sensor: On/Off
	11	CASSETTE1	I	0/5 V DC	Paper feeder identification signal 1
	12	CASSETTE 2	I	0/5 V DC	Paper feeder identification signal 2
	13	DESK FEED1 CL X			Paper feeder feed H clutch: On/Off
	14	DESK FEED2 CL X			Paper feeder feed L clutch: On/Off
YC28	1	24V	O	24 V DC	24 V DC power output
Connected to the engine inter-face PWB	2	FAN H/L	O	0/5 V DC	Main controller PWB cooling fan motor: Full speed/ Half speed
	3	FAN REM	O	0/5 V DC	Main controller PWB cooling fan motor: On/Off
	4	PC SBSY	O	0/5 V DC	Control signal (main controller PWB)
	5	PC SDIR	O	0/5 V DC	Control signal (main controller PWB)
	6	G(5V)	-	-	Ground (signal)
	7	PC RST	O	0/5 V DC	Control signal (main controller PWB)
	8	G(5V)	-	-	Ground (signal)
	9	PC SCLK	I	0/5 V DC	Control signal (main controller PWB)
	10	G(5V)	-	-	Ground (signal)
	11	PC EGSI	I	0/5 V DC	Control signal (main controller PWB)
	12	G(5V)	-	-	Ground (signal)
	13	PC EGSO	O	0/5 V DC	Control signal (main controller PWB)
	14	G(5V)	-	-	Ground (signal)
	15	PC ENGIRn	O	0/5 V DC	Control signal (main controller PWB)
	16	PC PUR-GEn	O	0/5 V DC	Control signal (main controller PWB)
	17	PC PQFLHn	O	0/5 V DC	Control signal (main controller PWB)
	18	PC ENGRDY	O	0/5 V DC	Control signal (main controller PWB)
	19	PC CMDQ-FLHn	I	0/5 V DC	Control signal (main controller PWB)
	20	PC ENGRSTn	I	0/5 V DC	Control signal (main controller PWB)
	21	PT7	I	0/5 V DC	Control signal (main controller PWB)
	22	C EEP	I	0/5 V DC	Control signal (main controller PWB)
	23	Q EEP	I	0/5 V DC	Control signal (main controller PWB)
	24	D EEP	I	0/5 V DC	Control signal (main controller PWB)
	25	S EEP	I	0/5 V DC	Control signal (main controller PWB)
	26	PRE EEP	I	0/5 V DC	Control signal (main controller PWB)
	27	W EEP	I	0/5 V DC	Control signal (main controller PWB)
	28	G(5V)	-	-	Ground (signal)

Connector	Pin No.	Signal	I/O	Voltage	Description
YC29	1	DUP P.E SIG	I	0/5 V DC	Duplex paper entrance sensor: On/Off
Connected to the duplex PWB (optional duplex unit*) <*Duplex unit is standard for 120 V (U.S.A.) specifications.>	2	DUP SIDE H.P SIG	I	0/5 V DC	Duplex side registration home position sensor: On/Off
	3	DUP EJECT SIG	I	0/5 V DC	Duplex eject sensor: On/Off
	4	DUP REG-IST SIG	I	0/5 V DC	Duplex registration sensor: On/Off
	5	DUP CON-VEY SIG	I	0/5 V DC	Duplex paper conveying sensor: On/Off
	6	DUP TAP SOL	O	0/5 V DC	Duplex tapping solenoid: On/Off
	7	DUP LEAD SOL	O	0/5 V DC	Duplex forwarding solenoid: On/Off
	8	DUP SIDE MOT B	O	0/5 V DC (pulse)	Duplex side registration motor drive pulse (B)
	9	DUP SIDE MOT _B	O	0/5 V DC (pulse)	Duplex side registration motor drive pulse (_B)
	10	DUP SIDE MOT A	O	0/5 V DC (pulse)	Duplex side registration motor drive pulse (A)
	11	DUP SIDE MOT _A	O	0/5 V DC (pulse)	Duplex side registration motor drive pulse (_A)
	12	DUP SET SIG	I	0/5 V DC	Duplex unit installation signal: Installed/Not installed
	13	DUP1 CL	O	0/5 V DC	Duplex feed clutch: On/Off
	14	NC	O	0/5 V DC	Not used
	15	E24V	O	24 V DC	24 V DC power output
	16	G(24V)	-	-	Ground (power)
	17	E5V	O	5 V DC	5 V DC power output
	18	G(5V)	-	-	Ground (signal)
YC30	1	DESKFEED H CL	O	0 /24 V DC	Paper feeder feed H clutch: On/Off
Connected to the Paper feeder feed H clutch	2	G(5V)	-	-	Ground (signal)

Connector	Pin No.	Signal	I/O	Voltage	Description
YC31	1	VSYNC	I	0/5 V DC (pulse)	LPH drive PWB control horizontal synchronization signal
Connected to the LPH dirve PWB	2	GND	-	-	Ground (signal)
	3	RESET	O	0/5 V DC	LPH drive PWB control reset signal
	4	GND	-	-	Ground (signal)
	5	RXD	I	0/5 V DC (pulse)	LPH drive PWB serial communication signal (receive)
	6	GND	-	-	Ground (signal)
	7	TXD	O	0/5 V DC (pulse)	LPH drive PWB serial communication signal (transmit)
	8	GND	-	-	Ground (signal)
	9	MOTCLK K	I	0/5 V DC (pulse)	Drum motor K drive clock signal
	10	MOTCLK C	I	0/5 V DC (pulse)	Drum motor C drive clock signal
	11	MOTCLK M	I	0/5 V DC (pulse)	Drum motor M drive clock signal
	12	MOTCLK Y	I	0/5 V DC (pulse)	Drum motor Y drive clock signal
	13	ENGINE RESET	O	0/5 V DC	LPH drive PWB reset signal
	14	CFDET	I	0/5 V DC	Not used
	15	ENGINE OUT1	-	-	Not used
	16	ENGINE HEADER	-	-	Not used
	17	MSW	-	-	Not used
	18	FAX SET	I	0/5 V DC	Not used
	19	SCANNER TXD	O	0/5 V DC (pulse)	Not used
	20	GND	-	-	Ground (signal)
	21	SCANNER RXD		0/5 V DC (pulse)	Not used
	22	GND	-	-	Ground (signal)
	23	ENGINE ACK	-	-	Not used
	24	ENGINE ERROR	-	-	Not used
	25	ENGINE PURGE	-	-	Not used
	26	ENIGIE EOP	-	-	Not used
	27	ENGINE VSYNC	-	-	Not used
	28	SCANNER ACK	I	0/5 V DC	Not used
	29	SCANNER ERROR	I	0/5 V DC	Not used
	30	SCANNER HEADER	I	0/5 V DC	Not used
YC32	1	MSW SIG	O	0/5 V DC	
Not used	2	SIG	-	-	
YC33	1	UPLESW2	I	0/5 V DC	Cassette paper gauge signal 2: On/Off
Connected to the cassette lift motor	2	COM(G)	-	-	Ground (signal)
	3	UPLESW1	I	0/5 V DC	Cassette paper gauge signal 1: On/Off
	4	REM	O	0 /24 V DC	Cassette lift motor: On/Off
	5	G(24V)	-	-	Ground (power)
YC34	1	E24V	O	24 V DC	24 V DC power output
Connected to the paper feed unit detection switch	2	NC	-	-	Not used
	3	E24V(R1)	I	24 V DC	24 V DC power input (via paper feed unit detection switch)

Connector	Pin No.	Signal	I/O	Voltage	Description
YC35	1	SIG	-	-	Ground (signal)
Connected to the face-down tray paper full sensor	2	U.EJECT SW	I	0/5 V DC	Face-down tray paper full sensor: On/Off
	3	E5V	O	5 V DC	5 V DC power output
YC36	1	REM	O	-	-
Not used	2	G(24V)	-	-	-
YC38	1	PB REM	I	-	-
Not used	2	PB CNT	I	-	-

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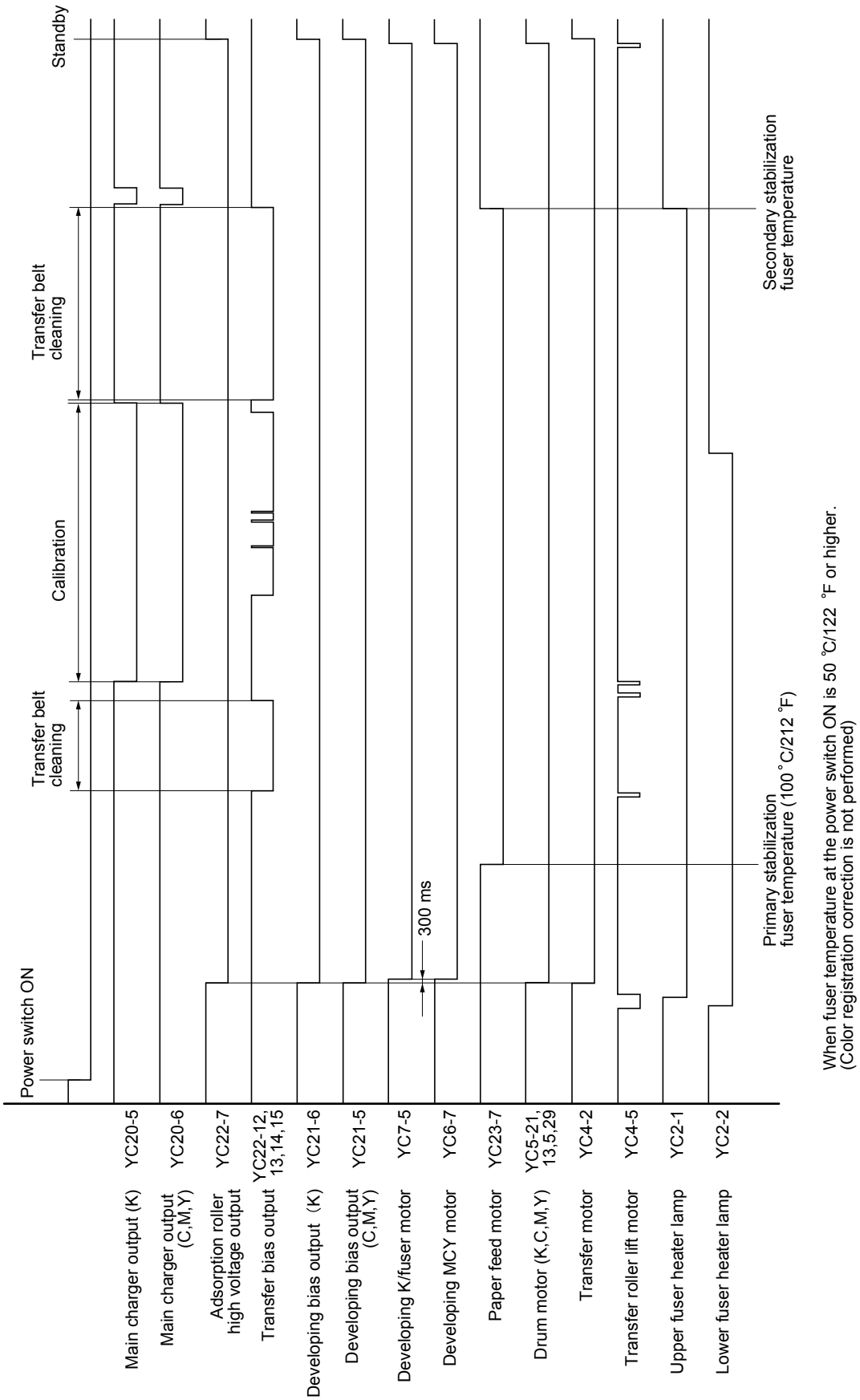
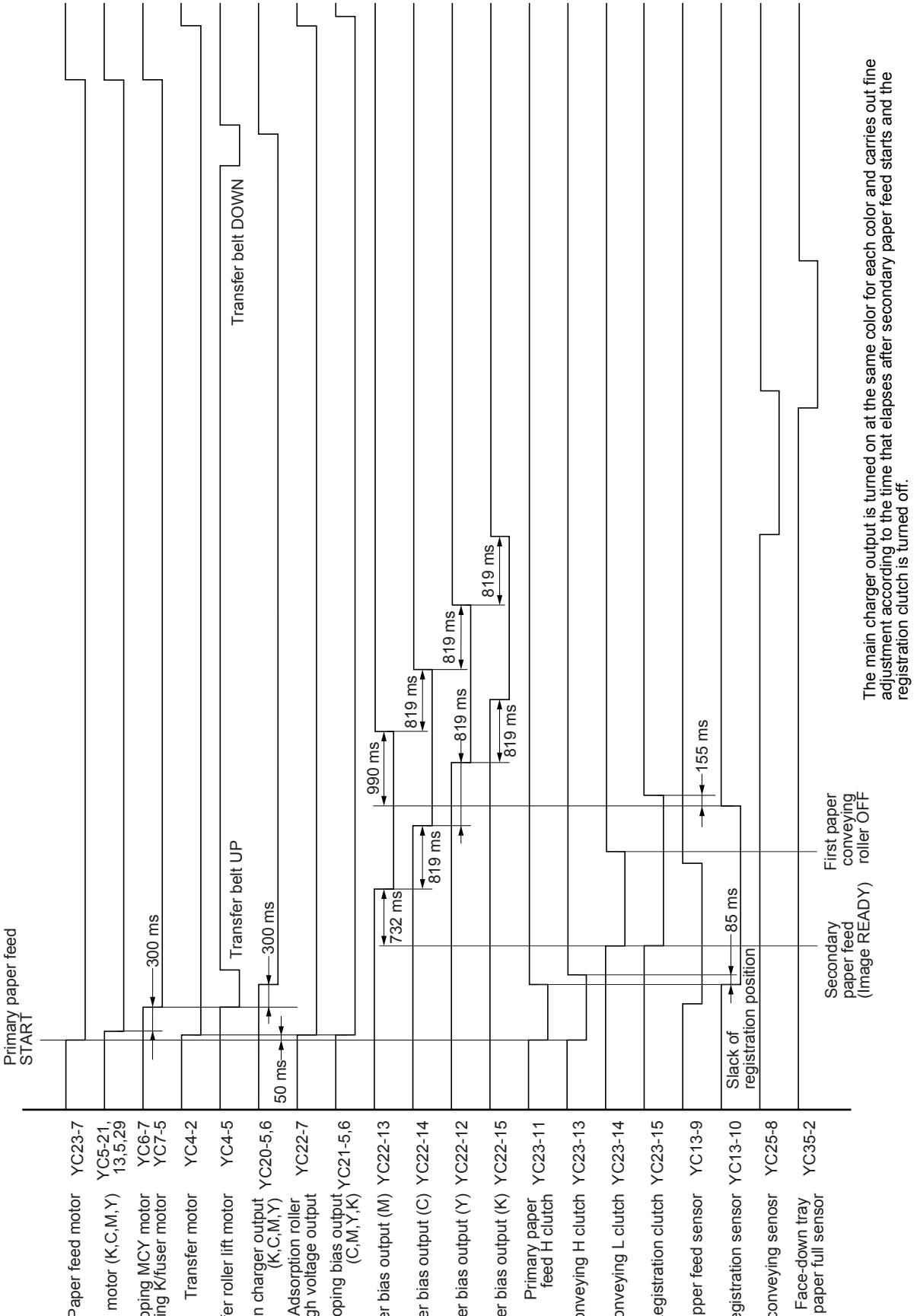
2-4-1 Appendixes

(1) Timing chart No.1 From the power switch turned on to machine stabilization

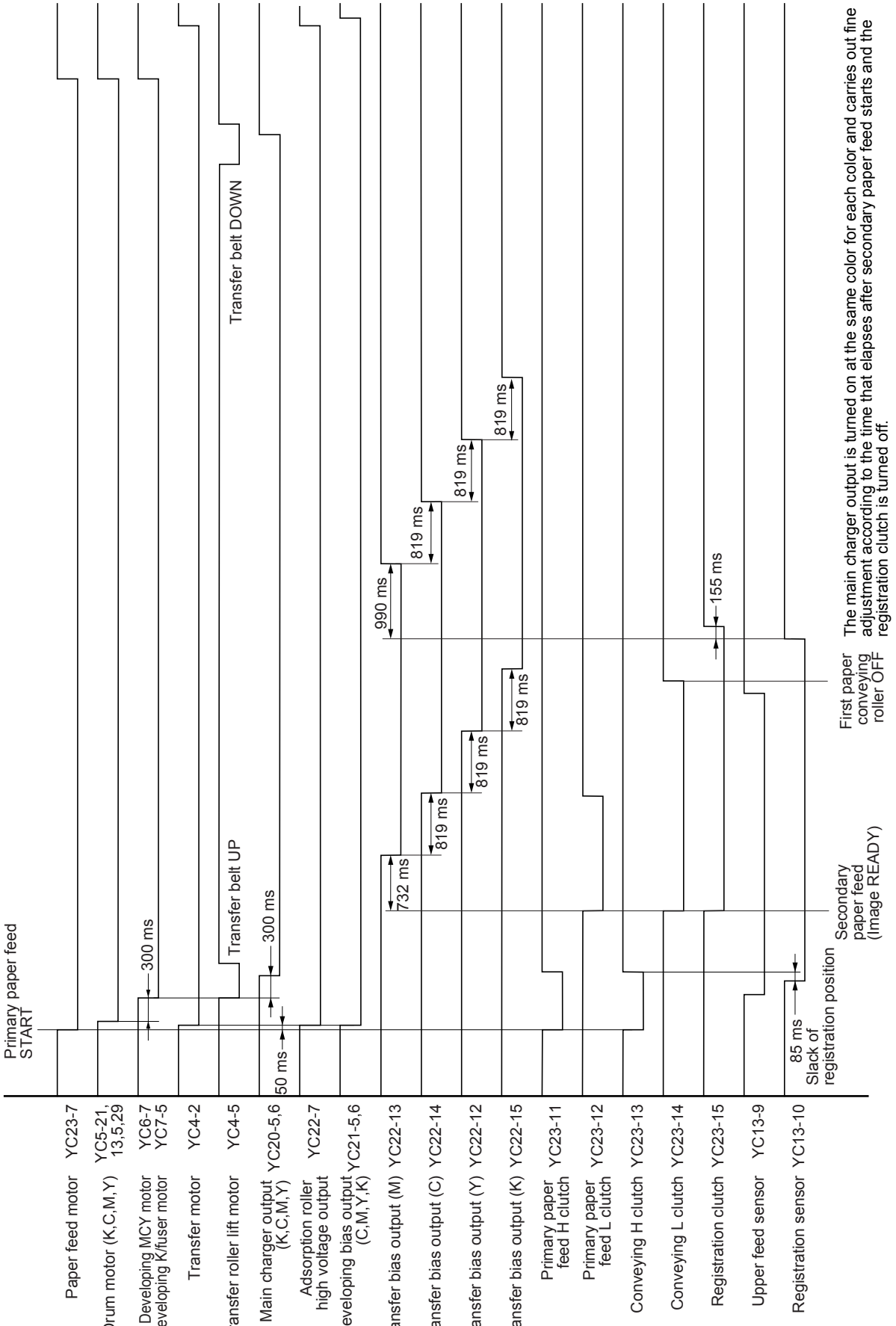


When fuser temperature at the power switch ON is 50 ˚C/122 ˚F or higher.
(Color registration correction is not performed)

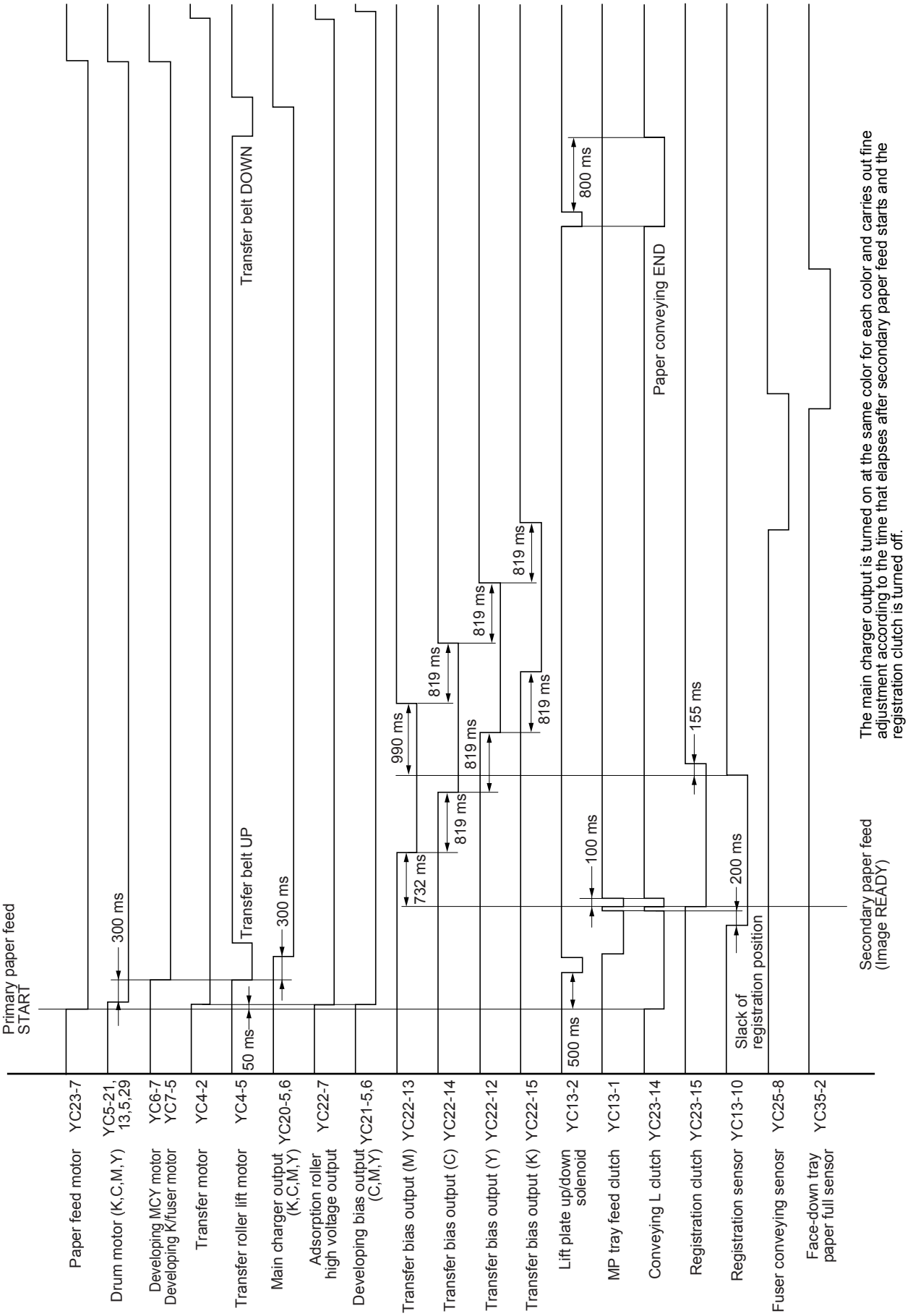
(2) Timing chart No.2 Cassette paper feeding, Color printing, Paper size A4



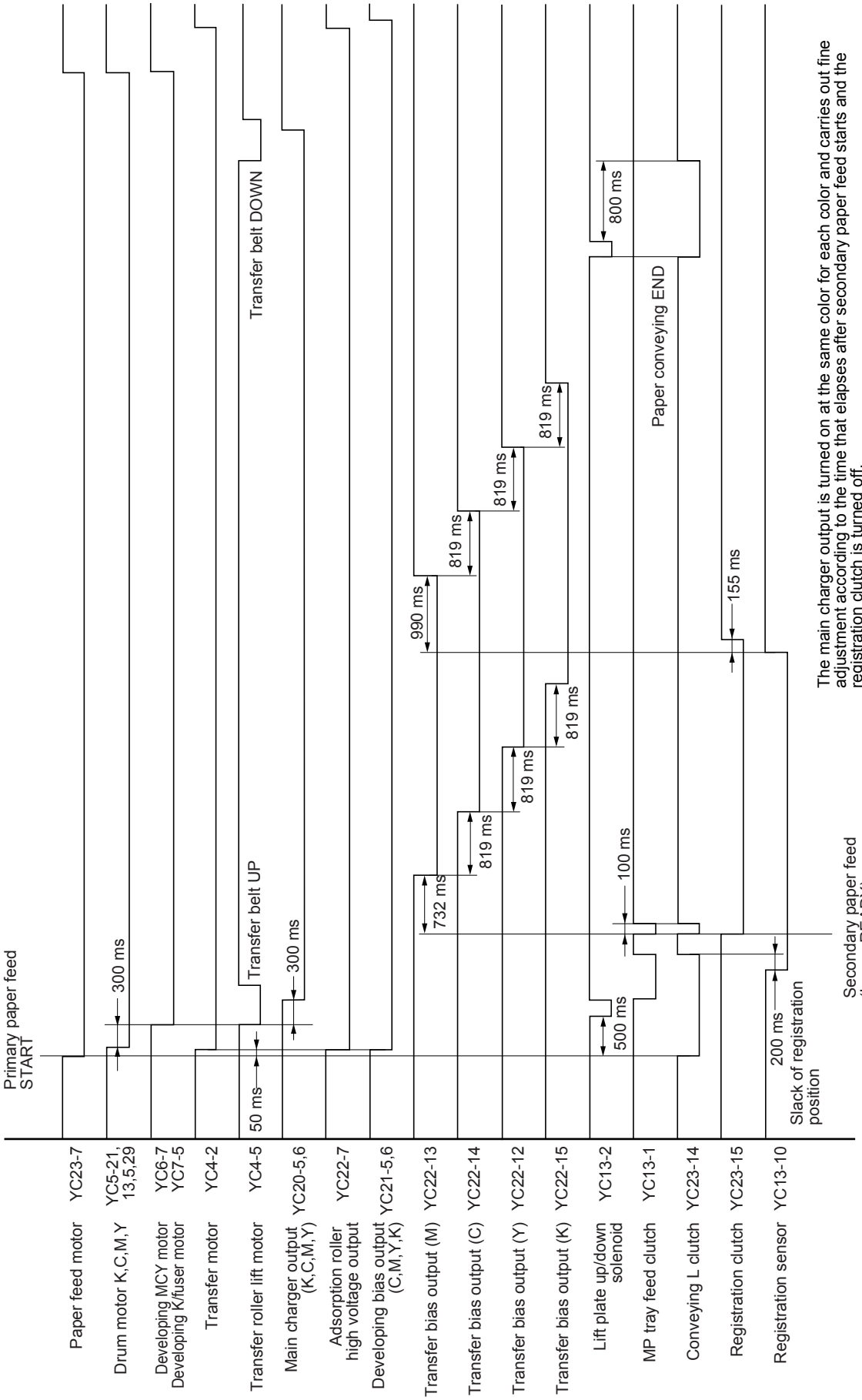
(3) Timing chart No.3 Cassette paper feeding, Color printing, Paper size A3



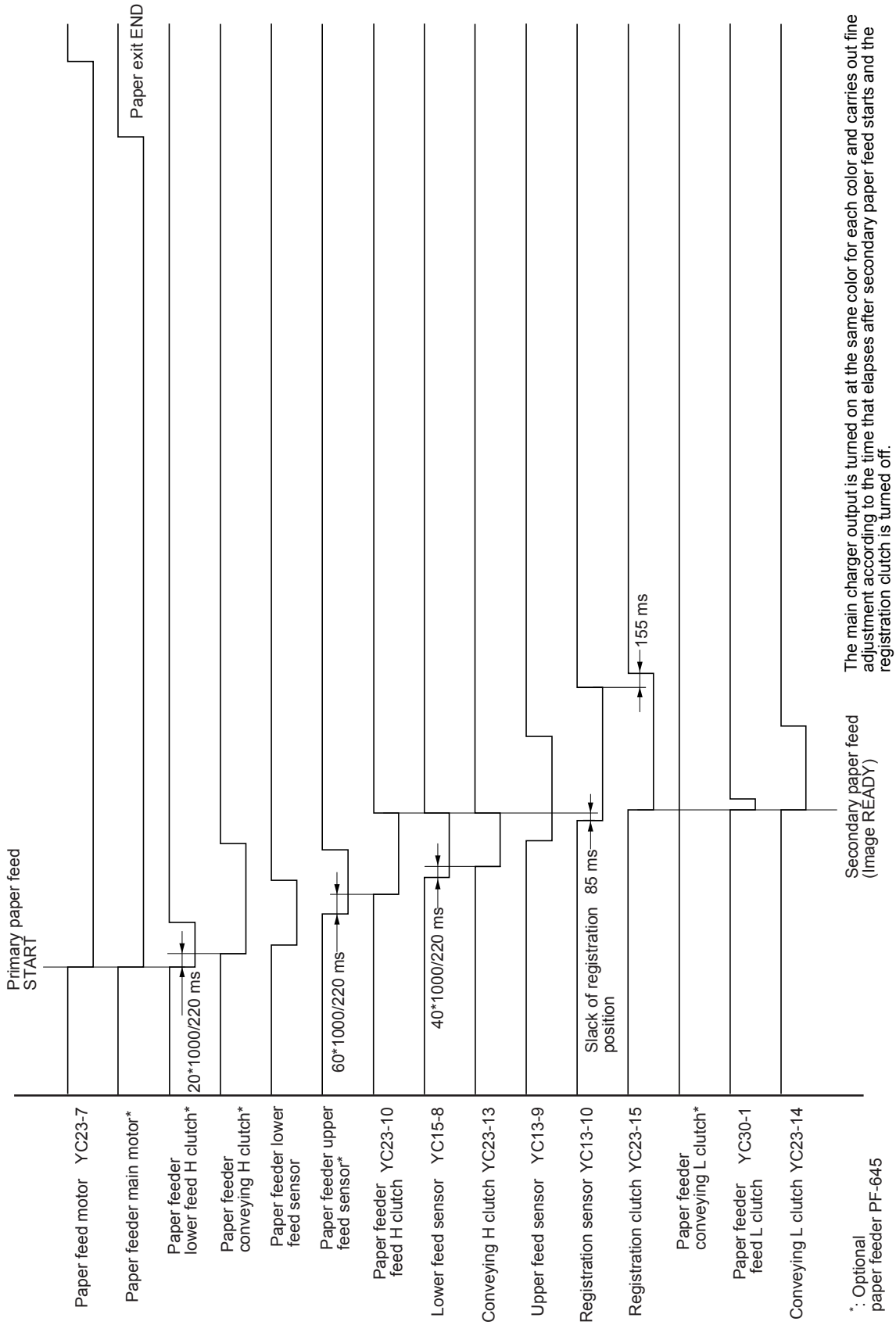
(4) Timing chart No.4 MP tray paper feeding, Color printing, Paper size A4



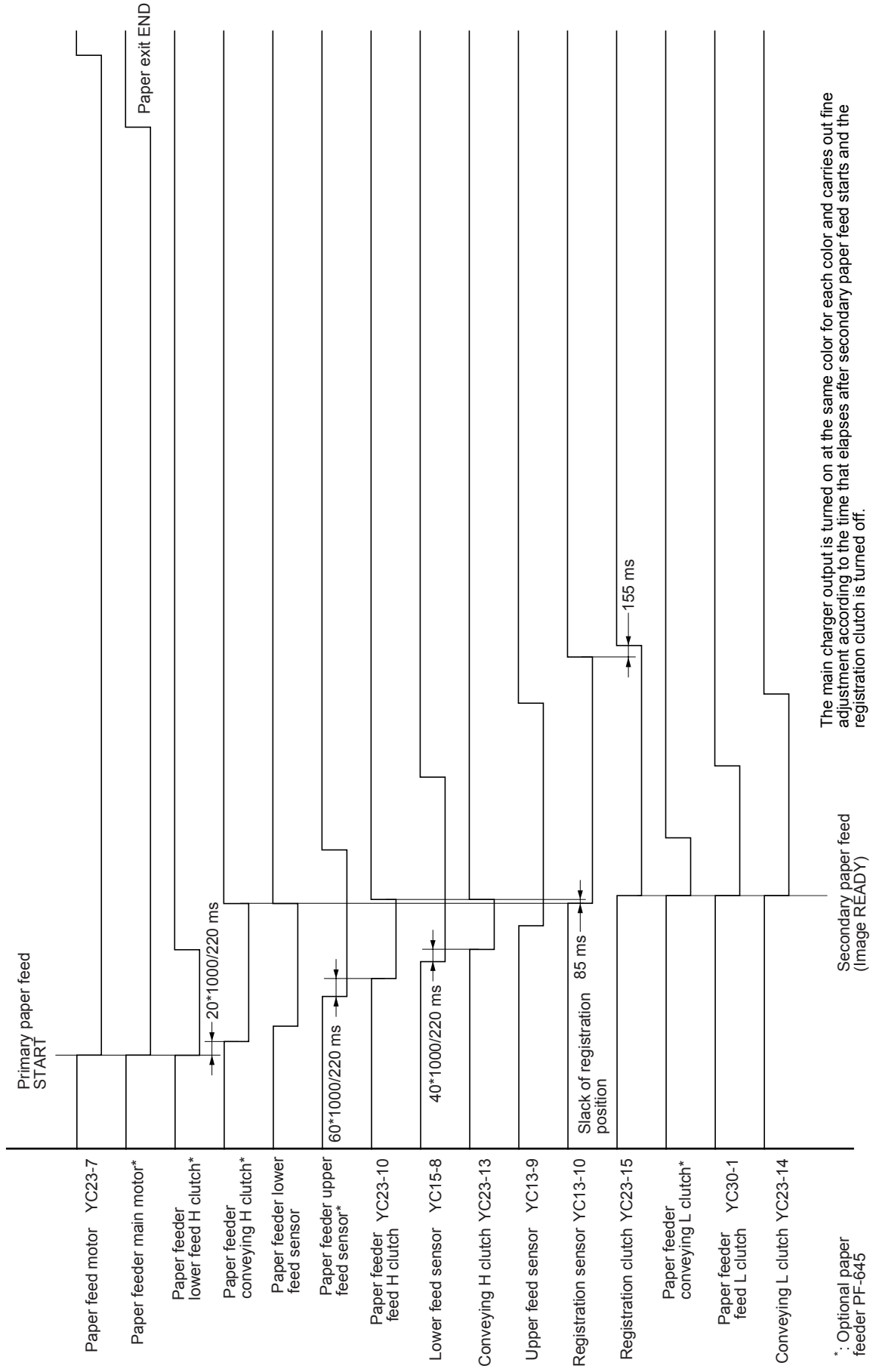
(5) Timing chart No.5 MP tray paper feeding, Color printing, Paper size A3



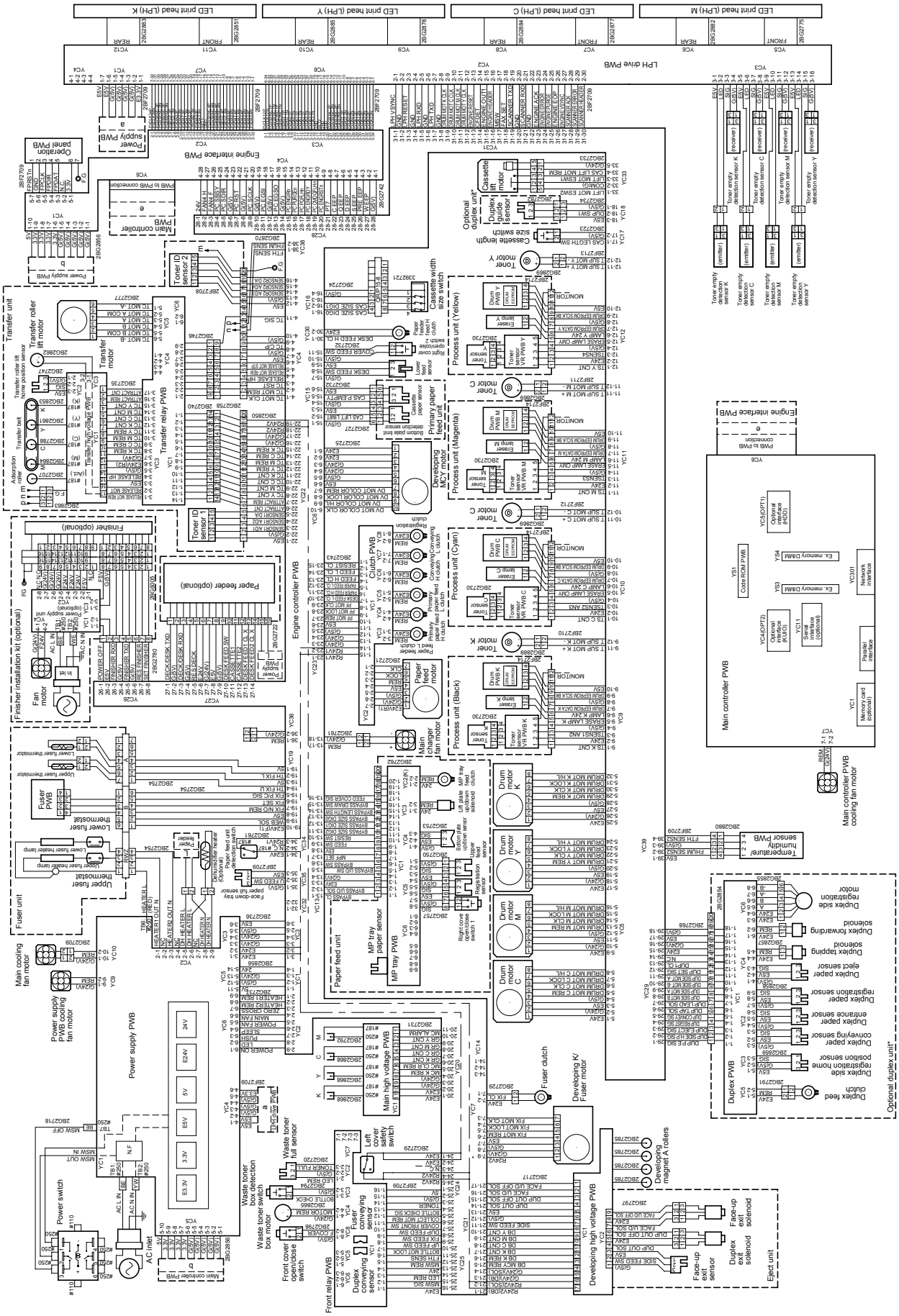
(6) Timing chart No.6 Paper feeder PF-645 lower cassette paper feeding, Color printing, Paper size A4



(7) Timing chart No.7 Paper feeder PF-645 lower cassette paper feeding, Color printing, Paper size A3



(8) Wiring diagram



(9) Maintenance kits

Maintenance kit part name		Part No.
Name used in service manual	**Name**	
<For 120 V specifications>		
Maintenance kit A	MK-810A	2BF82120
• Transfer unit	TR-810	
• Fuser unit	FK-810	
• Ozone filter	OZON FILTER	
Maintenance kit B	MK-810B	2BF82150
• Black developer	DV-810K	
• Black drum unit	DK-810	
• Black main charger unit	MCH UNIT	
Maintenance kit C	MK-810C	2BF82170
• Yellow developer	DV-810Y	
• Magenta developer	DV-810M	
• Cyan developer	DV-810C	
• Yellow drum unit	DK-810	
• Magenta drum unit	DK-810	
• Cyan drum unit	DK-810	
• Yellow main charger unit	MCH UNIT	
• Magenta main charger unit	MCH UNIT	
• Cyan main charger unit	MCH UNIT	
<For 220-240 V specifications>		
Maintenance kit A	MK-810A	2BF82130
• Transfer unit	TR-810	
• Fuser unit	FK-810	
• Ozone filter	OZON FILTER	
Maintenance kit B	MK-810B	2BF82140
• Black developer	DV-810K	
• Black drum unit	DK-810	
• Black main charger unit	MCH UNIT	
Maintenance kit C	MK-810C	2BF82160
• Yellow developer	DV-810Y	
• Magenta developer	DV-810M	
• Cyan developer	DV-810C	
• Yellow drum unit	DK-810	
• Magenta drum unit	DK-810	
• Cyan drum unit	DK-810	
• Yellow main charger unit	MCH UNIT	
• Magenta main charger unit	MCH UNIT	
• Cyan main charger unit	MCH UNIT	

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KYOCERA

Ecosys FS-C8026N
Color Laser Printer

PARTS LIST

Published in February 2008
2BFPL078
842BF128
Rev.8

NOTES

1.Indicate parts number and machine model when placing an order.

e.g.	Parts Number	Parts Name	Machine Model	Cycle	Quantity
	2BF04210	COVER FRONT F	FS-C8026N	50Hz	1
	2BF04210	COVER FRONT F	FS-C8026N	60Hz	1

2.Service calls and freight will be charged separately.

3.Symbols in the "Parts Number" column.

- Parts with "'⊙" indicates the spare parts and the parts without "⊙'" can not be supplied.

- Parts with "•" are component parts or sub-assemblies of the assembly appearing immediately above them.

e.g.	Parts Number	Parts Name	Parts Number	Parts Name
	2BF93112	PARTS,DK-810	•2BG14410	SPRING DS F
			•2BG14420	SPRING DS R

- Parts with "••" are component parts or sub-assembly with "•" appearing immediately above them.

e.g.	Parts Number	Parts Name	Parts Number	Parts Name
	•2BM07400	RETARD ROLL MPF ASSY	••2BM07280	HOLDER RETARD MPF
			••2BM07340	RETARD ROLL ASSY

4.Items indicated in Description column as (OPTION) are supply parts and should be ordered through your Regional Office.

CONTENTS

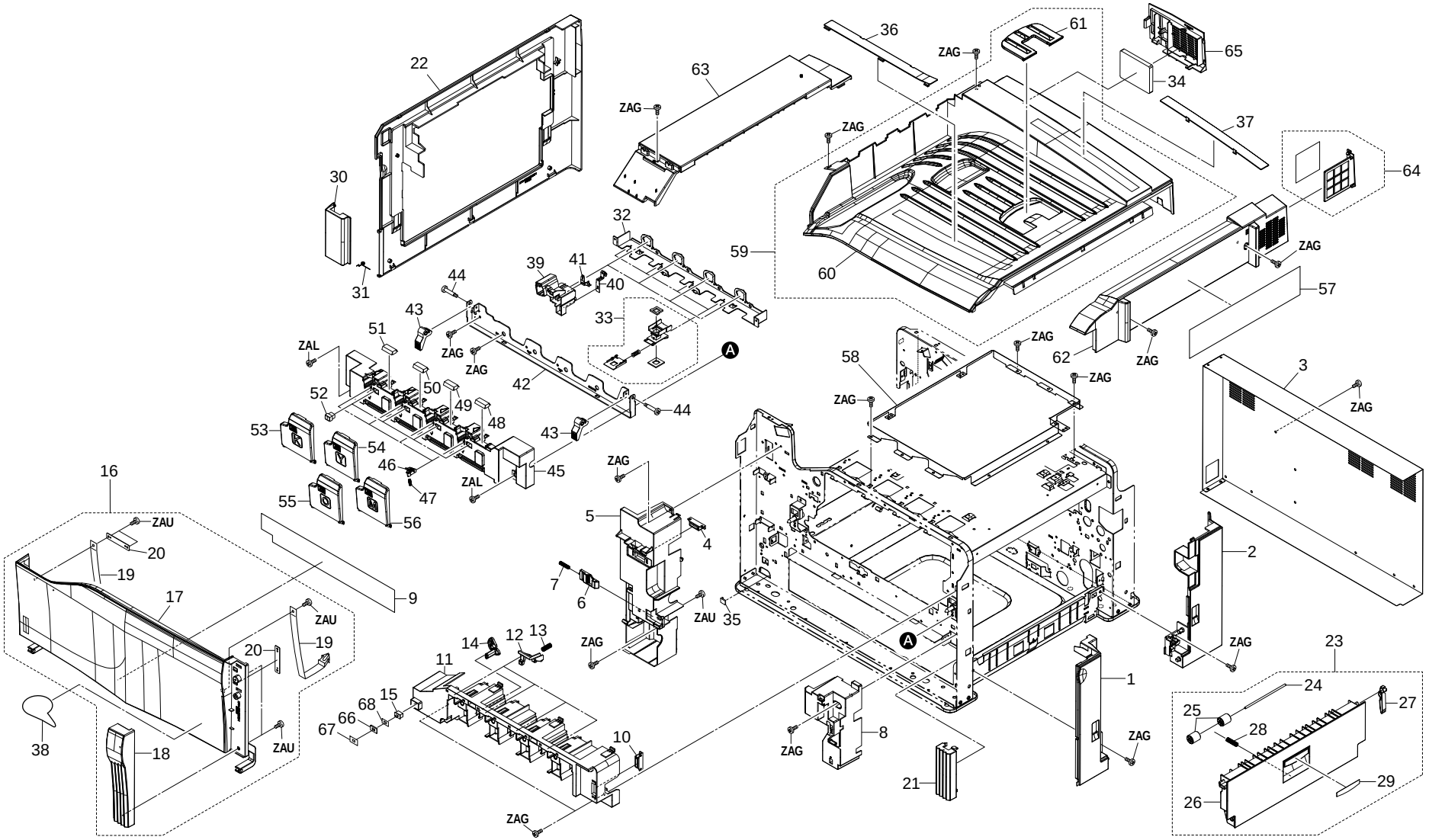
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FIG. 1 Exterior Covers

2BF-3

SP	Ref.No.	Part.No.	Alternative.	Description	Quantity		
					120V	230V	240V
⊙	1	2BG04050		COVER RIGHT F	1	1	1
⊙	2	2BG04060		COVER RIGHT R	1	1	1
⊙	3	2BG04120		COVER REAR	1	1	1
	4	60804120		MAGNET CATCH	1	1	1
⊙	5	2BG04150		COVER INNER LEFT	1	1	1
	6	2BG04160		LEVER LOCK WASTE	1	1	1
	7	2BG04170		SPRING LOCK WASTE	1	1	1
⊙	8	2BG04140		COVER INNER RIGHT	1	1	1
⊙	9	2BG05040		LABEL OPERATION FRONT	1	1	1
	10	2BC04530		FRONT MAGNET,COVER	1	1	1
⊙	11	2BG04130		COVER INNER MIDDLE	1	1	1
	12	302BG09201	2BG09201	LEVER LOCK CONTAINER	4	4	4
	13	2BG09210		SPRING LOCK CONT	4	4	4
	14	2BG09220		STOPPER IMAGE	1	1	1
⊙	15	35927420		SWITCH,SIZE	1	1	1
⊙	16	2BF00170		FRONT COVER ASS'Y F	1	1	1
⊙	17	•2BF04210		COVER FRONT F	1	1	1
⊙	18	•2BG04020		COVER FRONT R	1	1	1
	19	•2BG04310		BAND A	2	2	2
⊙	20	•5MMS626SD003	2BM04100	PLATE MAGCHATCH	2	2	2
⊙	21	2BG04100		COVER CASSETTE R	1	1	1
⊙	22	2BG04070		COVER LEFT	1	1	1
⊙	23	2BG00100		RIGHT COVER ASS'Y	1	1	1
	24	•2BG06150		SHAFT FEED B	1	1	1
⊙	25	•302BG06161	2BG06161	PULLEY FEED	2	2	2
⊙	26	•2BG06200		COVER FEED R	1	1	1
	27	•2BG06480		BAND B	1	1	1
	28	•2BG06650		SPRING FEED B	1	1	1
⊙	29	•2BL05250		LABEL LEFT COVER A	1	1	1
⊙	30	2BG04110		COVER CASSETTE L	1	1	1
	31	2BG04330		SPRING COVER	1	1	1
	32	2BG09010		PLATE HOLDER IMAGE	1	1	1
⊙	33	2BG68120		WASTE SHUTTER UNIT	4	4	4
⊙	34	2BG23030		OZON FILTER	1	1	1
	35	2BG02790		SHEET FF	1	1	1
	36	2BG04360		CAP TOP FRONT	1	1	1
	37	2BG04370		CAP TOP REAR	1	1	1
⊙	38	2BG05080		SEAL COLOR SYMBOL	1	1	1
	39	2BG09030		HOLDER IMAGE F	4	4	4
	40	2BG09060		PLATE HV DLP B	4	4	4
	41	2BG09090		PLATE EARTH DRUM	4	4	4
	42	2BG09050		PLATE RETAINER IMAGE	1	1	1
	43	2BG09250		LEVER LOCK IMAGE	2	2	2
	44	2BG09260		SCREW C	2	2	2
	45	2BG09170		COVER INNER LOW	1	1	1
	46	2BG09180		LEVER LOCK MCH	4	4	4
	47	2BG09190		SPRING LOCK MCH	4	4	4
	48	2BG09270		SEAL COVER INNER LOW M	1	1	1
	49	2BG09330		SEAL COVER INNER LOW C	1	1	1
	50	2BG09340		SEAL COVER INNER LOW Y	1	1	1
	51	2BG09350		SEAL COVER INNER LOW K	1	1	1
	52	5AAVCLIP+002	2BM02460	LUTCH	4	4	4
	53	2BG09320		COVER CONTAINER K	1	1	1
	54	2BG09310		COVER CONTAINER Y	1	1	1
	55	2BG09300		COVER CONTAINER C	1	1	1
	56	2BG09290		COVER CONTAINER M	1	1	1
⊙	57	2BG05050		LABEL OPERATION RIGHT	1	1	1
	58	2BG26050		COVER LPH PCB	1	1	1
⊙	59	2BG00060		TOP COVER ASS'Y	1	1	1
⊙	60	•2BG04030		COVER TOP	1	1	1
⊙	61	•2BG04300		STOPPER PAPER	1	1	1
⊙	62	2BG04040		COVER TOP R	1	1	1
⊙	63	2BG04090		COVER TOP L	1	1	1
⊙	64	302BG00091	2BG00091	FILTER ASS'Y	1	1	1
⊙	65	2BG04270		COVER DUCT	1	1	1
⊙	66	2BG04520		COVER SW	1	1	1
⊙	67	2BG04530		SHEET SW	1	1	1
⊙	68	2BG04540		TAPE SW	1	1	1

• Parts with "•" are component parts or sub-assemblies of the assembly appearing immediately above them.
• Parts with "⊙"" indicates the spare parts.

• Parts with "••" are component parts or sub-assembly with "•" appearing immediately above them.

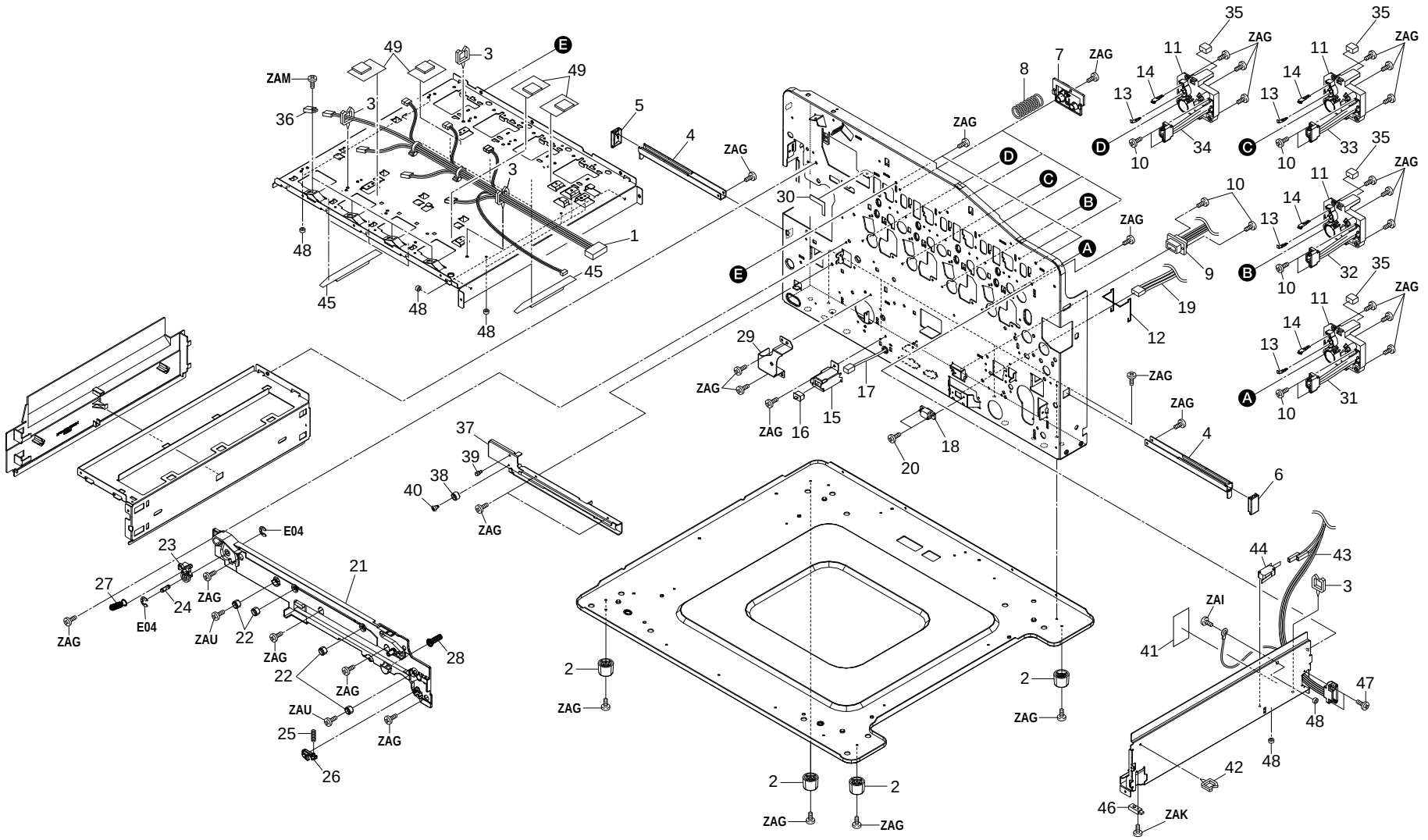
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FIG. 2 Upper Frame Unit 1

2BF-3

SP	Ref.No.	Part.No.	Alternative.	Description	Quantity		
					120V	230V	240V
	1	2BG27830		WIRE,TONER EMPTY SWITCH	1	1	1
	2	2BG02390		FOOT	4	4	4
	3	M2109010	49513902	WIRE SADDLE,WS-2NS	4	4	4
	4	2BG02180		HANDLE	2	2	2
	5	2BG02470		CAP HANDLE	1	1	1
	6	2BG02480		CAP HANDLE R	1	1	1
	7	2BF15030		GUIDE CONTAINER Y	4	4	4
	8	2BG15180		SPRING CONTAINER EJECT	4	4	4
	9	2BG27680		WIRE,DUPLEX JUNCTION	1	1	1
	10	2BG02410		SCREW A	10	10	10
	11	2BG09040		HOLDER IMAGE R	4	4	4
	12	2BG02430		GROUND DRAWER	1	1	1
	13	302BG10111	2BG10111	PLATE CONTACT WIRE	4	4	4
	14	302BG10121	2BG10121	PLATE SPRING GRID	4	4	4
	15	2BG06890		MOUNT PAPER SIZE	1	1	1
⊙	16	35927420		SWITCH,SIZE	1	1	1
	17	2BG27230		WIRE,CASSETTE LENGTH SW	1	1	1
	18	J0464080		RECEPTACLE,QR/P15-8S-C(02)(HIROSE)	1	1	1
	19	2BG27240		WIRE,CASSETTE SIZE	1	1	1
	20	2BG02420		SCREW B	2	2	2
	21	2BG02610		GUIDE TC R	1	1	1
⊙	22	2BG02770		PULLEY RAIL B	4	4	4
	23	2BG02630		LEVER LOCK TC R	1	1	1
	24	2BG02650		PIN LOCK TC	1	1	1
	25	5MMW261SD004	3B706550	SPRING COVER R	1	1	1
	26	5MVX421DN003	2BL06490	LOCK COVER RIGHT	1	1	1
	27	2BG02640		SPRING LOCK TC	1	1	1
	28	2BG06710		SPRING EARTH RAIL	1	1	1
	29	2BG22850		HOLDER DU DRIVE	1	1	1
	30	2BG02740		SHEET HARNESS R	1	1	1
	31	2BF27110		WIRE,IU JUNCTION M	1	1	1
	32	2BF27120		WIRE,IU JUNCTION C	1	1	1
	33	2BF27130		WIRE,IU JUNCTION Y	1	1	1
	34	2BF27100		WIRE,IU JUNCTION K	1	1	1
	35	2BG09280		SPONGE HOLDER IMAGE	4	4	4
⊙	36	2BG27020		SENSOR,TONER EMPTY B	4	4	4
	37	2BG02230		RAIL FUSER R	1	1	1
⊙	38	2BG02240		PULLEY RAIL	1	1	1
	39	2BG02400		PIN HOOK	1	1	1
	40	2BG20350		PIN PULLEY	1	1	1
	41	2BG02780		SHEET RM	1	1	1
	42	M2105740		MINIATURE CLAMP,UAMS-05S-2	1	1	1
	43	302BG27611	2BG27611	WIRE,BYPASS JUNCTION	1	1	1
⊙	44	2AV27370		SWITCH,INTERLOCK	1	1	1
	45	2BG02820		SEAL PLATE LPH B	6	6	6
⊙	46	3B827040		SENSOR 12,SEPARATION	1	1	1
	47	2BG02410		SCREW A	2	2	2
	48	302BG04560	2BG04560	COVER SCREW	10	10	10
	49	2BG02810		SEAL PLATE LPH A	4	4	4

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• Parts with "⊙"" indicates the spare parts.

• Parts with "••" are component parts or sub-assembly with "•" appearing immediately above them.

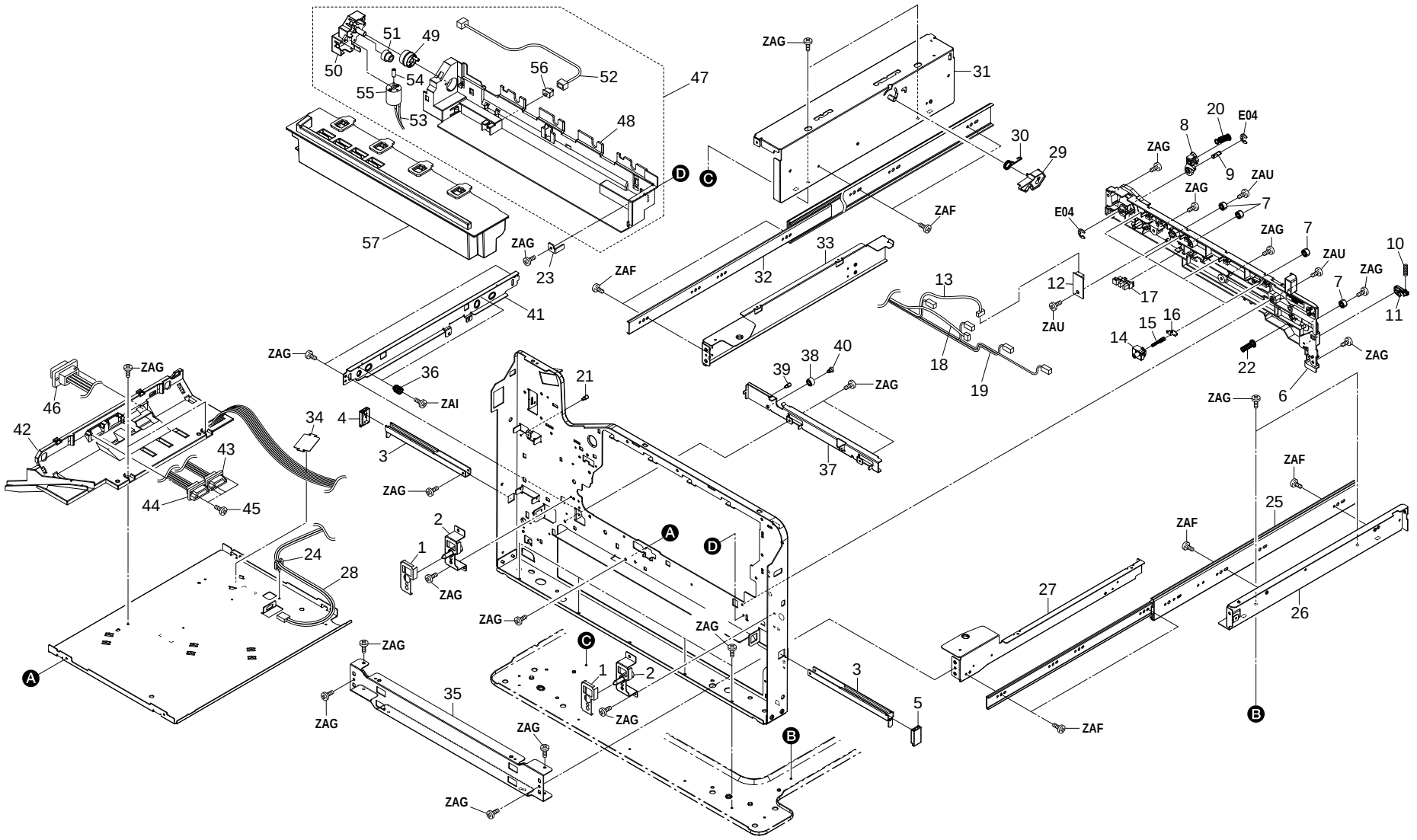
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FIG. 3 Upper Frame Unit 2

2BF-3

SP	Ref.No.	Part.No.	Alternative.	Description	Quantity		
					120V	230V	240V
	1	2BG09360		SPACER PILOT PIN	2	2	2
	2	2BG09120		PLATE PILOT PIN	2	2	2
	3	2BG02180		HANDLE	2	2	2
	4	2BG02470		CAP HANDLE	1	1	1
	5	2BG02480		CAP HANDLE R	1	1	1
	6	2BG02600		GUIDE TC F	1	1	1
⊙	7	2BG02770		PULLEY RAIL B	4	4	4
	8	2BG02620		LEVER LOCK TC F	1	1	1
	9	2BG02650		PIN LOCK TC	1	1	1
	10	5MMW261SD004	3B706550	SPRING COVER R	1	1	1
	11	5MVX421DN003	2BL06490	LOCK COVER RIGHT	1	1	1
	12	2BG28250		HUM SENSOR F	1	1	1
	13	2BG28800		WIRE,F HUM SENSOR	1	1	1
	14	2BG09130		HOLDER HV DLP	4	4	4
	15	2BG09160		SPRING HV DLP	4	4	4
	16	2BG09140		PLATE HV DLP A	4	4	4
⊙	17	2BG18520		SENSOR WASTE	1	1	1
	18	2BG27200		WIRE,WASTE SENSOR	1	1	1
	19	2BG27850		WIRE,DB HIGH VOLTAGE	1	1	1
	20	2BG02640		SPRING LOCK TC	1	1	1
	21	2BG02400		PIN HOOK	1	1	1
	22	2BG06710		SPRING EARTH RAIL	1	1	1
	23	2BG06970		STOPPER FEED UNIT	1	1	1
	24	M2105730		MINIATURE CLAMP,UAMS-07-0	1	1	1
	25	2BC07680		SLIDER,DECK	1	1	1
	26	2BG02060		PLATE RAIL R	1	1	1
	27	2BG06900		RAIL CASSETTE R	1	1	1
	28	2BG27780		WIRE,HERTER	1	1	1
	29	2BG06420		HOOK CASSETTE	1	1	1
	30	2BG06720		SPRING CASS HOOK	1	1	1
	31	2BG02070		PLATE RAIL L	1	1	1
	32	2BC07680		SLIDER,DECK	1	1	1
	33	2BG06910		RAIL CASSETTE L	1	1	1
	34	2BG02500		SHEET HARNESS TC	1	1	1
	35	2BG06430		RAIL CASSETTE C	1	1	1
	36	2BG02720		SPRING A	2	2	2
	37	2BG02220		RAIL FUSER F	1	1	1
⊙	38	2BG02240		PULLEY RAIL	1	1	1
	39	2BG02400		PIN HOOK	1	1	1
	40	2BG20350		PIN PULLEY	1	1	1
	41	2BG02460		PLATE MIDDLE L	1	1	1
	42	2BG02450		STAY MIDDLE	1	1	1
	43	2BG28500		WIRE,T UNIT JUNCTION A	1	1	1
	44	2BG28700		WIRE,T UNIT JUNCTION B	1	1	1
	45	2BG02410		SCREW A	4	4	4
	46	2BG27540		WIRE,FUSER JUNCTION	1	1	1
⊙	47	2BG00330		WASTE TONER ASS'Y	1	1	1
	48	•2BG18320		TRAY WASTE	1	1	1
	49	•2BG18470		JOINT WASTE	1	1	1
	50	•2BG18480		BRACKET TB DRIVE	1	1	1
⊙	51	•2BG18490		WORM WHEEL Z34S-Z15H	1	1	1
	52	•2BG27940		WIRE,TONER BOTTLE CHECK	1	1	1
	53	•2BG28650		WIRE,MOTOR BOTTLE	1	1	1
⊙	54	•5MVG115DB002	2BM14540	GEAR WORM	1	1	1
⊙	55	•5EZND2402601+01	2BM27340	DC MOTOR	1	1	1
⊙	56	•35927420		SWITCH,SIZE	1	1	1
⊙	57	302BG00342	2BG00342	WASTE TONER BOX ASS'Y	1	1	1

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• Parts with "••" are component parts or sub-assembly with "•" appearing immediately above them.

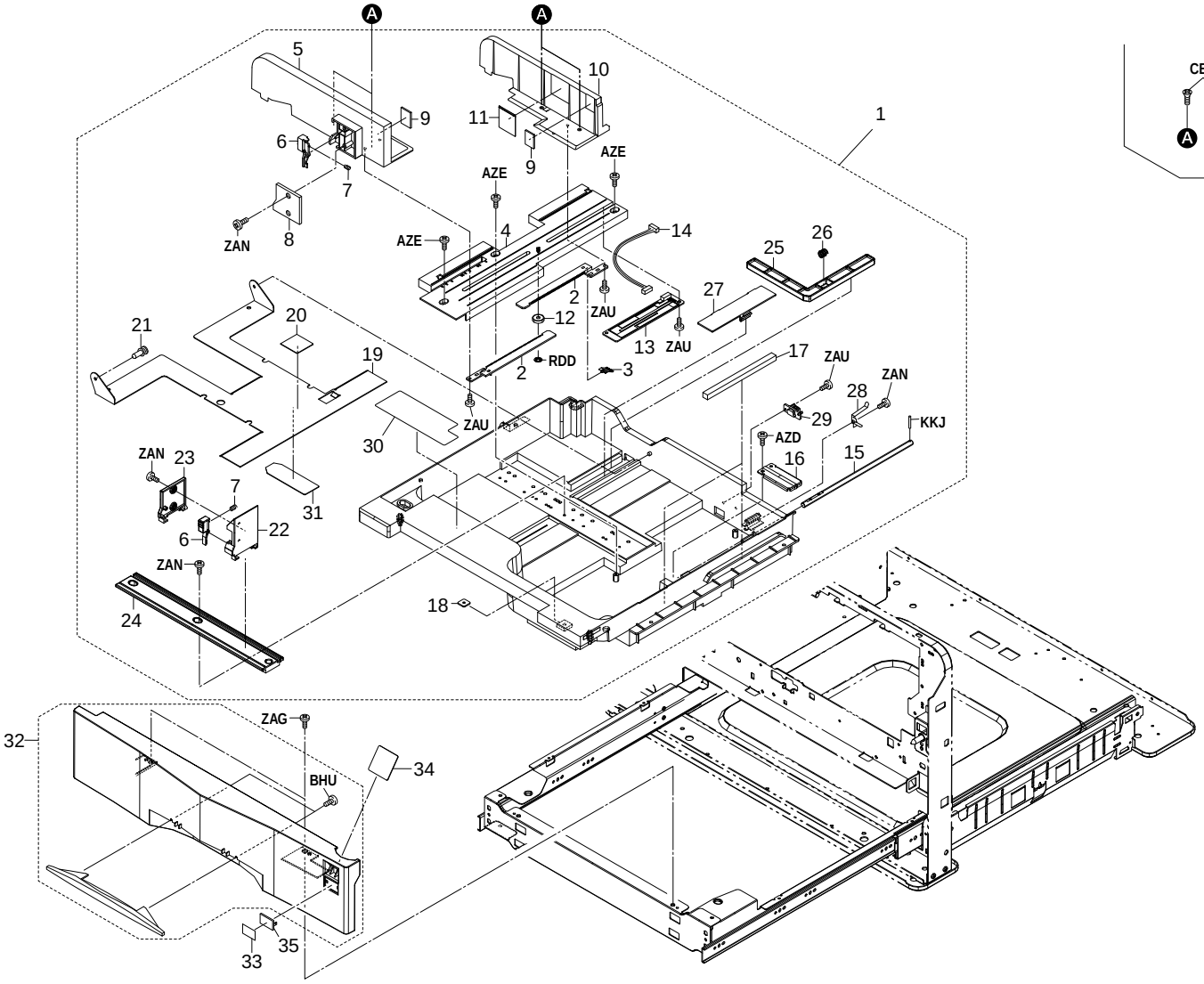
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FIG. 4 Paper Cassette

SP	Ref.No.	Part.No.	Alternative.	Description	Quantity		
					120V	230V	240V
⊙	1	2BG93011		PARTS,CASSETTE ASS'Y,SP	1	1	1
	2	•3CY06090		RACK CURSOR	2	2	2
	3	•2BC07860		TERMINAL,PAPER SIZE DETECTION	1	1	1
	4	•2BC06720		RAIL A,CURSOR	1	1	1
	5	•3CY06041		CURSOR A,CASSETTE	1	1	1
	6	•33907080		LEVER,CASSETTE CURSOR	2	2	2
	7	•2BC06950		SPRING,CURSOR	2	2	2
	8	•3CY06060		LID A,CURSOR	1	1	1
	9	•60907170		CUSHION,CASSETTE R	2	2	2
	10	•3CY06050		CURSOR B,CASSETTE	1	1	1
⊙	11	•61705110		LABEL,PAPER UPPER LIMIT	1	1	1
⊙	12	•3CY06100		GEAR 20,CURSOR	1	1	1
⊙	13	•33928111		SIZE DETECTION PCB	1	1	1
	14	•33927210		WIRE,CASSETTE UNIT	1	1	1
	15	•2BC06710		SHAFT,LIFT CASSETTE	1	1	1
	16	•2BC06090		WORK PLATE,LIFT CASSETTE	1	1	1
	17	•33907210		CUSHION,CASSETTE WORK PLATE	2	2	2
	18	•3CY06030		RETAINER M4	1	1	1
	19	•33907020		WORK PLATE,CASSETTE	1	1	1
⊙	20	•66107100		PAD,CASSETTE	1	1	1
	21	•66007310		PIN,CASSETTE WORK PLATE	1	1	1
	22	•3CY06071		CURSOR C,CASSETTE	1	1	1
	23	•3CY06080		LID C,CURSOR	1	1	1
	24	•33907120		RAIL C,CURSOR	1	1	1
	25	•33907170		DETECTION PLATE,PAPER SIZE	1	1	1
	26	•66106080		SPRING,PAD	1	1	1
	27	•33907160		LID,PAPER SIZE DETECTION	1	1	1
	28	•2BC07830		GROUND PLATE,CASSETTE	1	1	1
	29	•J0463080		PLUG,QR/P15-8S-C(HIROSE)	1	1	1
	30	•3CY05080		LABEL,CASSETTE	1	1	1
⊙	31	•3CY06110		SHEET,LIFT PLATE	1	1	1
⊙	32	2BG93020		PARTS,CASSETTE COVER,SP	1	1	1
	33	2BG05070		LABEL 1	1	1	1
	34	2BL06910		PLATE SIZE IN	1		
	34	5MVS446VE001	2BL06470	PLATE SIZE C		1	1
	35	3CY04100		PLATE NUMBER	1	1	1

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- Parts with "••" are component parts or sub-assembly with "•" appearing immediately above them.

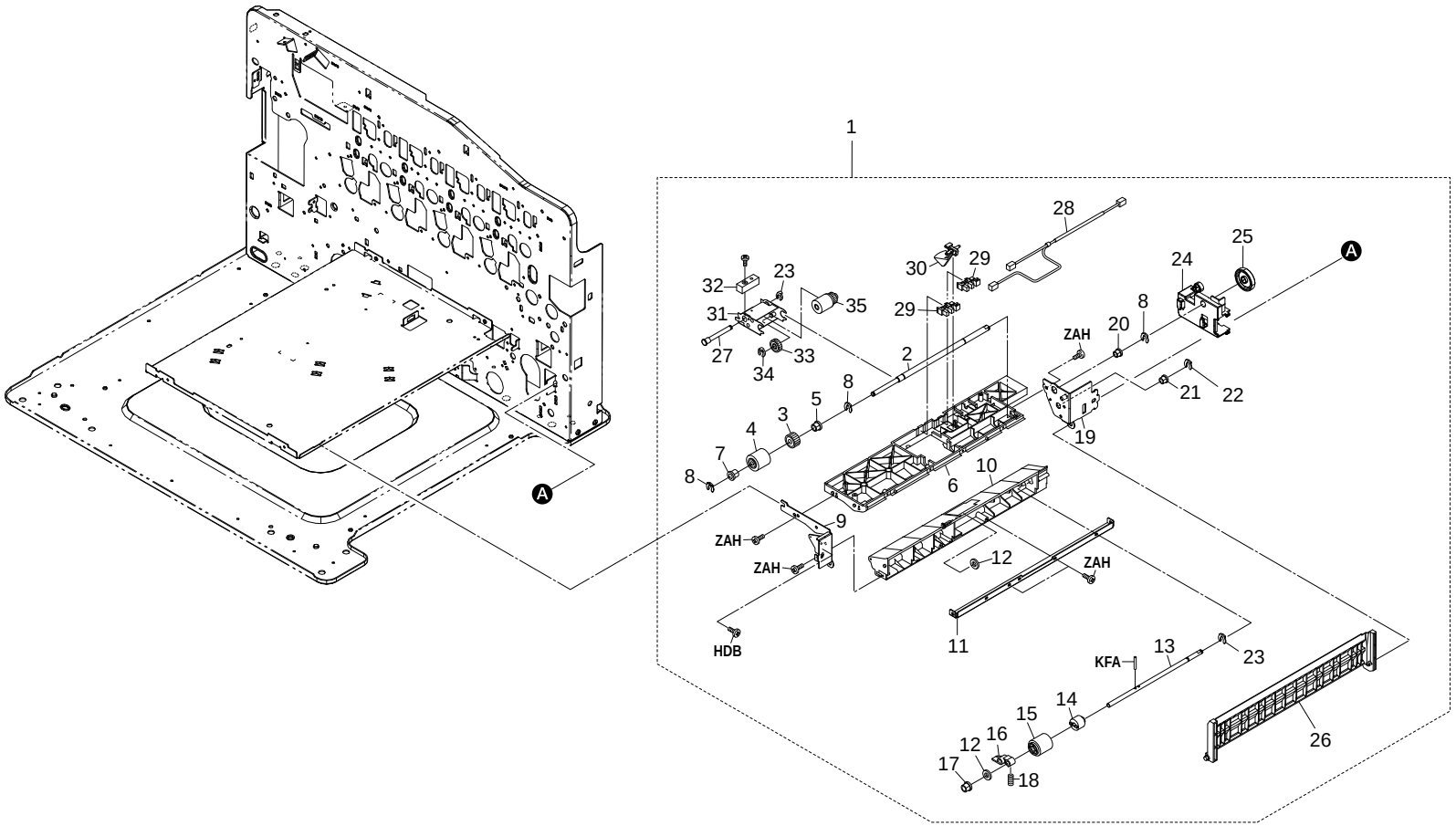
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FIG. 5 Primarry Feed Assembly

SP	Ref.No.	Part.No.	Alternative.	Description	Quantity		
					120V	230V	240V
⊙	1	2BG00130		PRIMARY FEED ASS'Y	1	1	1
	2	•2BG06780		SHAFT FEED UP	1	1	1
⊙	3	•2BC06790		UPPER GEAR,PAPER FEED	1	1	1
⊙	4	•2BC06900		PULLEY,PAPER FEED	1	1	1
⊙	5	•60907880		BUSHING,BYPASS SHAFT	1	1	1
	6	•2BC06010		UPPER HOUSING,PAPER FEED	1	1	1
⊙	7	•36706310		BUSHING,PAPER FEED	1	1	1
	8	•2BC06980		STOPPER 5	3	3	3
	9	•2BG06360		PLATE FEED F	1	1	1
	10	•2BC06021		LOWER HOUSING,PAPER FEED	1	1	1
	11	•2BC06360		LOWER REINFORCEMENT,HOUSING PAPER FEED	1	1	1
	12	•33906211		VIBRATION INSULATOR,RELEASE LEVER	2	2	2
	13	•2BG06990		SHAFT FEED LOW	1	1	1
	14	•2BG06380		TORQUE LIMITER 360	1	1	1
⊙	15	•33906060		LOWER PULLEY,PAPER FEED	1	1	1
	16	•33906090		LOWER LEVER,PAPER FEED PULLEY RELEASE	1	1	1
⊙	17	•63806290		BUSHING,6	1	1	1
	18	•3CY06020		LOWER SPRING B,PAPER FEED	1	1	1
	19	•2BG06370		PLATE FEED R	1	1	1
	20	•2BC06510		BUSHING 8	1	1	1
⊙	21	•34806040		LOWER BUSHING,PAPER FEED	1	1	1
⊙	22	•5MVX111DN003	2A806250	RING STOPPER	1	1	1
	23	•2BC06990		STOPPER 5,RING	2	2	2
	24	•2BG06980		COVER DRIVE FEED	1	1	1
⊙	25	•2BG06790		GEAR FEED Z33S	1	1	1
	26	•2BC06460		GUIDE,CONFLUENCE	1	1	1
	27	•33906080		SHAFT,LEADING FEED PULLEY	1	1	1
	28	•2BG27270		WIRE,PAPER FEED UNIT	1	1	1
⊙	29	•2BL27450		SWITCH PI	2	2	2
⊙	30	•2BC06380		ACTUATOR,PAPER EMPTY	1	1	1
	31	•2BC06300		SUPPORT PLATE,LEADING FEED PULLEY	1	1	1
	32	•33906180		WEIGHT,LEADING FEED PULLEY	1	1	1
⊙	33	•34922220		GEAR 18,RETARD	1	1	1
⊙	34	•63511220		STOP RING,4	1	1	1
⊙	35	•2BC06810		PULLEY,LEADING FEED	1	1	1

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- Parts with "⊙"" indicates the spare parts.

- Parts with "••" are component parts or sub-assembly with "•" appearing immediately above them.

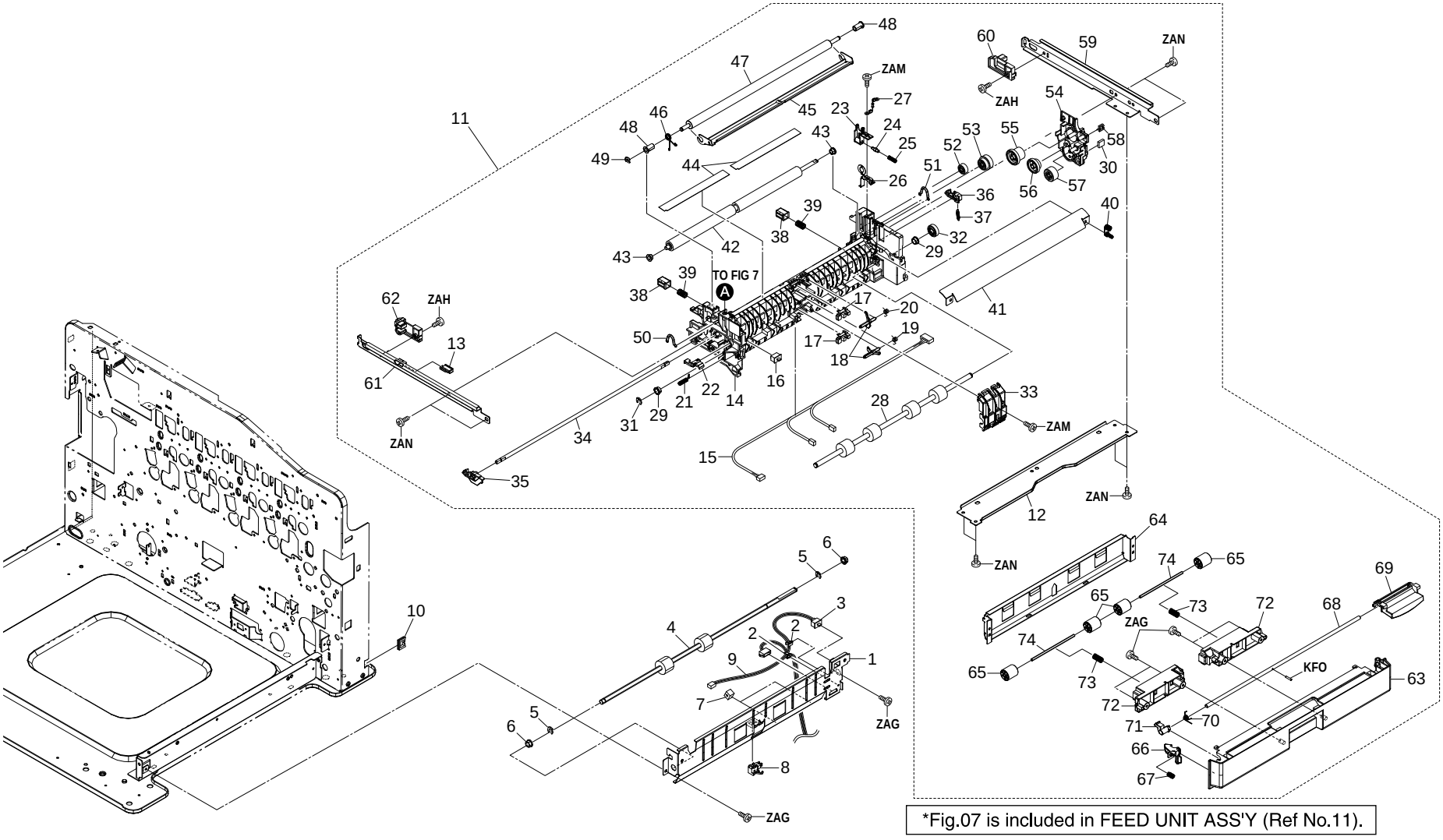

*Fig.07 is included in FEED UNIT ASS'Y (Ref No.11).

FIG. 6 Paper feed unit 1

2BF-3

SP	Ref.No.	Part.No.	Alternative.	Description	Quantity		
					120V	230V	240V
	1	2BG06250		PLATE FEED L	1	1	1
	2	M2105740		MINIATURE CLAMP,UAMS-05S-2	2	2	2
⊙	3	35927420		SWITCH,SIZE	1	1	1
⊙	4	2BG06240		ROLLER FEED B	1	1	1
	5	2BC06910		STOPPER 6	2	2	2
	6	2BG22950		BUSH 8 EW	2	2	2
⊙	7	2BG06500		SPONGE WIRE A	2	2	2
⊙	8	2BC27010		SWITCH,CONVEYING	1	1	1
	9	2BG27320		WIRE,PAPER FEED JUNCTION	1	1	1
	10	M2104210		EDGING,EDS-2	1	1	1
⊙	11	302BF00092	2BF00092	FEED UNIT ASS'Y	1	1	1
	12	•2BG06630		PLATE FEED LOW	1	1	1
	13	•2BG06920		LEVER FEED LOCK	1	1	1
	14	•2BG06010		FRAME FEED	1	1	1
	15	•302BG27571	2BG27571	WIRE,REGISTRATION SWITCH	1	1	1
⊙	16	•35927420		SWITCH,SIZE	1	1	1
⊙	17	•2A127050		SWITCH,PHOT0 INTERRUPTOR	2	2	2
⊙	18	•2BG06870		ACTUATOR FEED	2	2	2
	19	•2BG06450		SPRING ACT FEED	1	1	1
	20	•2BG06460		SPRING ACT REG	1	1	1
	21	•2BG06690		SPRING EARTH FEED	1	1	1
	22	•2BG06110		LEVER FEED B	1	1	1
	23	•2BG07540		HOLDER EARTH PIN	1	1	1
	24	•2BG07530		PIN EARTH FEED	1	1	1
	25	•2BG07550		SPRING HOLDER PIN	1	1	1
⊙	26	•2BG06930		PLATE EARTH REGIST	1	1	1
⊙	27	•2BG06640		HIGHMEG ASSY	1	1	1
⊙	28	•2BG06060		ROLLER FEED A	1	1	1
	29	•2BG22950		BUSH 8 EW	2	2	2
	30	•2BG06570		SPONGE WIRE D	1	1	1
	31	•2BC06910		STOPPER 6	1	1	1
⊙	32	•2BG06320		GEAR Z19S	1	1	1
	33	•2BG07500		COVER ACT FEED	1	1	1
	34	•2BG06070		SHAFT FEED UNIT	1	1	1
	35	•2BG06080		HOOK FEED F	1	1	1
	36	•2BG06740		HOOK FEED R	1	1	1
	37	•2BG06950		SPRING FEED HOOK	1	1	1
	38	•2BG06270		STOPPER TC	2	2	2
	39	•2BG06400		SPRING PRESS TC	2	2	2
	40	•2BG06410		SPRING EARTH GUIDE	1	1	1
	41	•2BG06030		PLATE GUIDE REGIST LOW	1	1	1
⊙	42	•2BG06050		ROLLER REGIST LOW	1	1	1
	43	•2BG07520		BUSH 6 NB	2	2	2
⊙	44	•2BG06470		SHEET REGIST	2	2	2
	45	•2BG06750		PLATE GUIDE REGIST UP	1	1	1
	46	•2BG06490		SPRING REG RELEASE	1	1	1
⊙	47	•2BG06040		ROLLER REGIST UP	1	1	1
	48	•2BG07510		BUSH REGIST UP NB	2	2	2
⊙	49	•5MVX111DN003	2A806250	RING STOPPER	1	1	1
	50	•2BG06340		SPRING REGIST A	1	1	1
	51	2BG07600		SPRING REGIST B	1	1	1
⊙	52	•2BG06330		GEAR Z15S	1	1	1
⊙	53	•2BG06170		GEAR Z18S-Z22S	1	1	1
	54	•2BG06100		HOLDER FEED DRIVE	1	1	1
⊙	55	•2BG06180		GEAR Z19S-Z26S	1	1	1
⊙	56	•2BG06770		GEAR Z20S-Z24S	1	1	1
⊙	57	•3A821110		GEAR 21	1	1	1
	58	•M2105720		MINIATURE CLAMP,UAMS-05-2	1	1	1
	59	•2BG06310		RAIL FEED R	1	1	1
	60	•2BG06730		HOLDER TC R	1	1	1
	61	•302BG06301	2BG06301	RAIL FEED F	1	1	1
	62	•2BG06220		HOLDER TC F	1	1	1
⊙	63	•2BG06190		COVER FEED	1	1	1
	64	•2BG06230		GUIDE FEED LOW	1	1	1
⊙	65	•302BG06161	2BG06161	PULLEY FEED	4	4	4
	66	•2BG06280		LEVER COVER FEED	1	1	1
	67	•2BG06660		SPRING COVER FEED	1	1	1
	68	•2BG06290		SHAFT FEED C	1	1	1
	69	•2BG06350		HANDLE FEED	1	1	1
	70	•2BG06260		SPRING HANDLE FEED	1	1	1
	71	•2BG06440		LEVER FEED A	1	1	1
	72	•2BG07560		HOLDER PULLEY	2	2	2
	73	•2BG07570		SPRING FEED A	2	2	2
	74	•2BG06140		SHAFT FEED A	2	2	2

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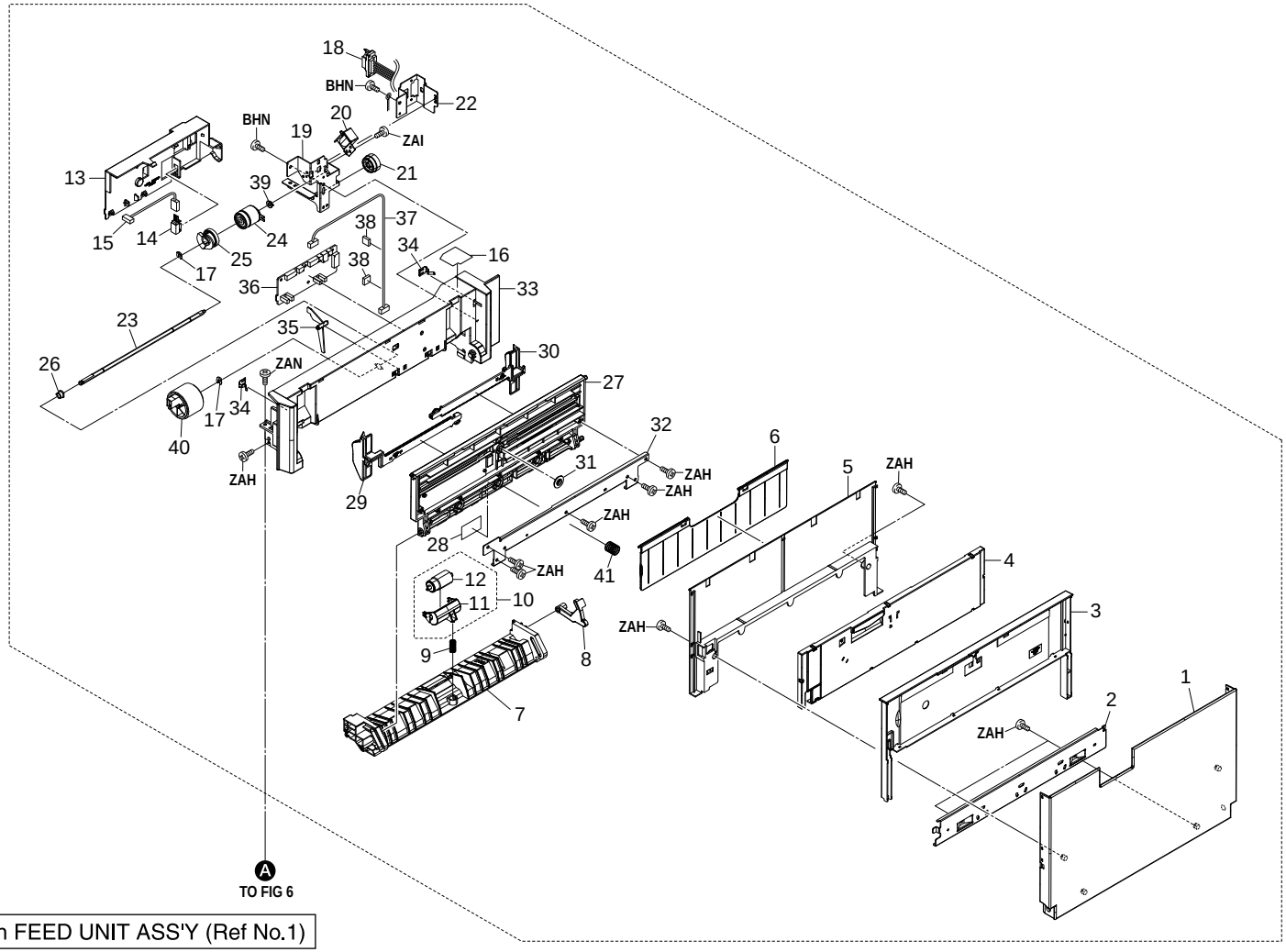


*Ref No.11 of Fig.06 is included in FEED UNIT ASS'Y (Ref No.1)

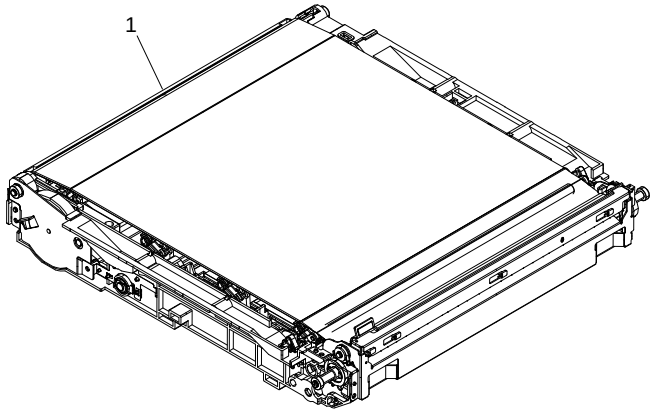
FIG. 7 Paper feed unit 2

2BF-3

SP	Ref.No.	Part.No.	Alternative.	Description	Quantity		
					120V	230V	240V
⊙		302BF00092	2BF00092	FEED UNIT ASS'Y	1	1	1
⊙	1	•302BG06511	2BG06511	COVER MPF TRAY	1	1	1
	2	•2BG06810		PLATE MPF	1	1	1
	3	•302BF06011	2BF06011	TRAY MPF B	1	1	1
	4	•2BG06820		COVER SWITCH	1	1	1
	5	•302BG06581	2BG06581	TRAY MPF A	1	1	1
	6	•2BG06600		TRAY MPF C	1	1	1
	7	•2BG06210		GUIDE PAPER MPF	1	1	1
⊙	8	•5MVX652DN001	2BM07050	ACTUATOR CAM MPF	1	1	1
	9	•2BM07290	5MMW266LD009	SPRING RETARD MPF	1	1	1
⊙	10	•2BM07400		RETARD ROLL MPF ASSY	1	1	1
	11	••2BM07280		HOLDER RETARD MPF	1	1	1
⊙	12	••2BM07340		RETARD ROLL ASSY	1	1	1
	13	•2BG06130		COVER PWB MPF B	1	1	1
⊙	14	•2BM27170	5SP24BW52E++040	PT.SENSOR GP2S30	1	1	1
	15	•302BG27531	2BG27531	WIRE,BYPASS UPPER LOWER	1	1	1
	16	•2BG05090		LABET TC	1	1	1
⊙	17	•5MVX111DN003	2A806250	RING STOPPER	2	2	2
	18	•2BG27620		WIRE,FEED UNIT	1	1	1
	19	•2BG06680		BRACKET MPF DRIVE	1	1	1
⊙	20	•2BM27100		SOLENOID MPF	1	1	1
⊙	21	•2BG06760		GEAR Z28S-Z30S	1	1	1
	22	•2BG06670		BRACKET MPF DRAWER	1	1	1
	23	•2BG06090		SHAFT ROLL MPF	1	1	1
⊙	24	•2BM27120	5AAVCLTCH020	CLUTCH MPF ASSY	1	1	1
⊙	25	•2BM27780	5EYYAFAAD01++02	CLUTCH 26-B	1	1	1
⊙	26	•5MVM176DB012	2BM07320	BUSH POM B	1	1	1
	27	•2BG06520		PLATE LIFT MPF	1	1	1
⊙	28	•5MVS531XN001	2BM07170	PAD FRICTION	1	1	1
	29	•2BG06550		CURSOR MPF F	1	1	1
	30	•2BG06540		CURSOR MPF R	1	1	1
⊙	31	•5MVG127DH001	2B700380	GEAR MANUAL 40301X1013	1	1	1
	32	•2BG06530		PLATE MPF UP	1	1	1
	33	•2BG06390		FRAME MPF	1	1	1
	34	•2BG06020		LOCK TRAY MPF	2	2	2
⊙	35	•5MVX653DB001	2BM07060	ACTUATOR PAPER MPF	1	1	1
⊙	36	•302BG01151	2BG01151	BYPASS PCB ASS'Y	1	1	1
	37	•2BG27500		WIRE,REG SWITCH JUNCTION	1	1	1
	38	•2BG06570		SPONGE WIRE D	2	2	2
⊙	39	•5MMM176CJ007	2BM07330	BUSH METAL	1	1	1
⊙	40	•2BM07270	5AAROLL+053	ROLL FEED MPF ASSY	1	1	1
	41	•5MMW676LD002	2BM07080	SPRING BOTTOM MPF	1	1	1

- Parts with "•" are component parts or sub-assemblies of the assembly appearing immediately above them.
- Parts with "⊙"" indicates the spare parts.

- Parts with "••" are component parts or sub-assembly with "•" appearing immediately above them.



*Taking the quality assurance into consideration, component parts are not supplied as the spare parts.

FIG. 8 Primarry Transfer Unit

SP	Ref.No.	Part.No.	Alternative.	Description	Quantity		
					120V	230V	240V
⊙	1	302BF93066	2BF93066	PARTS,TR-810	1	1	1

• Parts with "•" are component parts or sub-assemblies of the assembly appearing immediately above them.
• Parts with "⊙"" indicates the spare parts.

• Parts with "••" are component parts or sub-assembly with "•" appearing immediately above them.

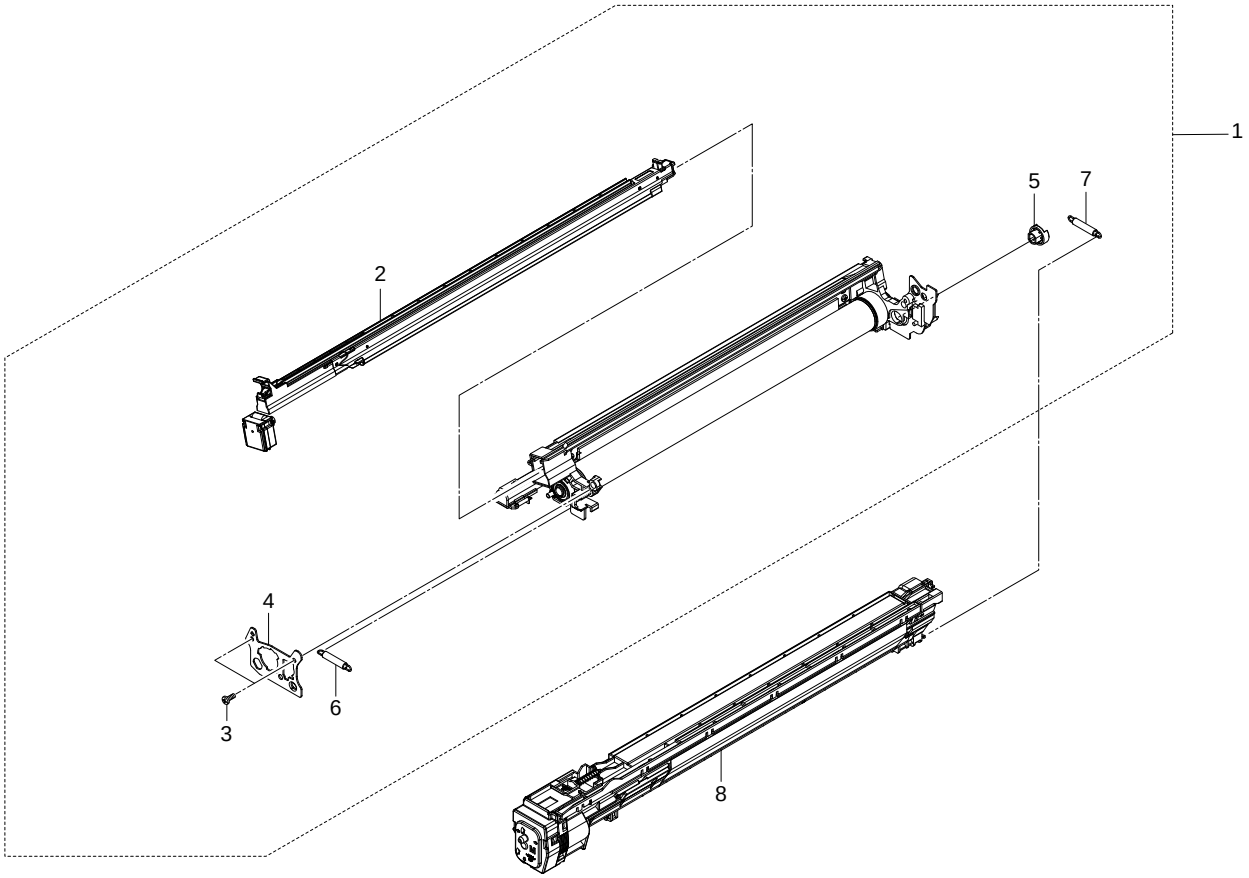

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FIG. 9 Process Unit & Packing Assemblies

2BF-3

SP	Ref.No.	Part.No.	Alternative.	Description	Quantity		
					120V	230V	240V
⊙	1	2BF93112		PARTS,DK-810	4	4	4
⊙	2	•302BG93210	2BG93210	PARTS,MCH UNIT,SP	4	4	4
	3	•BAA63080		+TP TAP-TITE P SCREW M3X08	8	8	8
	4	•2BG08100		PLATE DRUM F	4	4	4
	5	•2BG14160		JOINT DRIVE DLP	4	4	4
	6	•2BG14410		SPRING DS F	4	4	4
	7	•2BG14420		SPRING DS R	4	4	4
⊙	8	302BG93121	2BG93121	PARTS,DV-810Y(U)	1		
⊙	8	302BG93111	2BG93111	PARTS,DV-810Y(J/E)		1	1
⊙	8	302BG93141	2BG93141	PARTS,DV-810M(U)	1		
⊙	8	302BG93131	2BG93131	PARTS,DV-810M(J/E)		1	1
⊙	8	302BG93161	2BG93161	PARTS,DV-810C(U)	1		
⊙	8	302BG93151	2BG93151	PARTS,DV-810C(J/E)		1	1
⊙	8	2BG93180		PARTS,DV-810K(U)	1		
⊙	8	2BG93170		PARTS,DV-810K(J/E)		1	1

SP	Ref.No.	Part.No.	Alternative.	Description	Quantity		
					120V	230V	240V
⊙		2BF77010		PACKING ASSY U	1		
⊙		2BF77020		PACKING ASSY E		1	1

• Parts with "•" are component parts or sub-assemblies of the assembly appearing immediately above them.
• Parts with "⊙"" indicates the spare parts.

• Parts with "••" are component parts or sub-assembly with "•" appearing immediately above them.

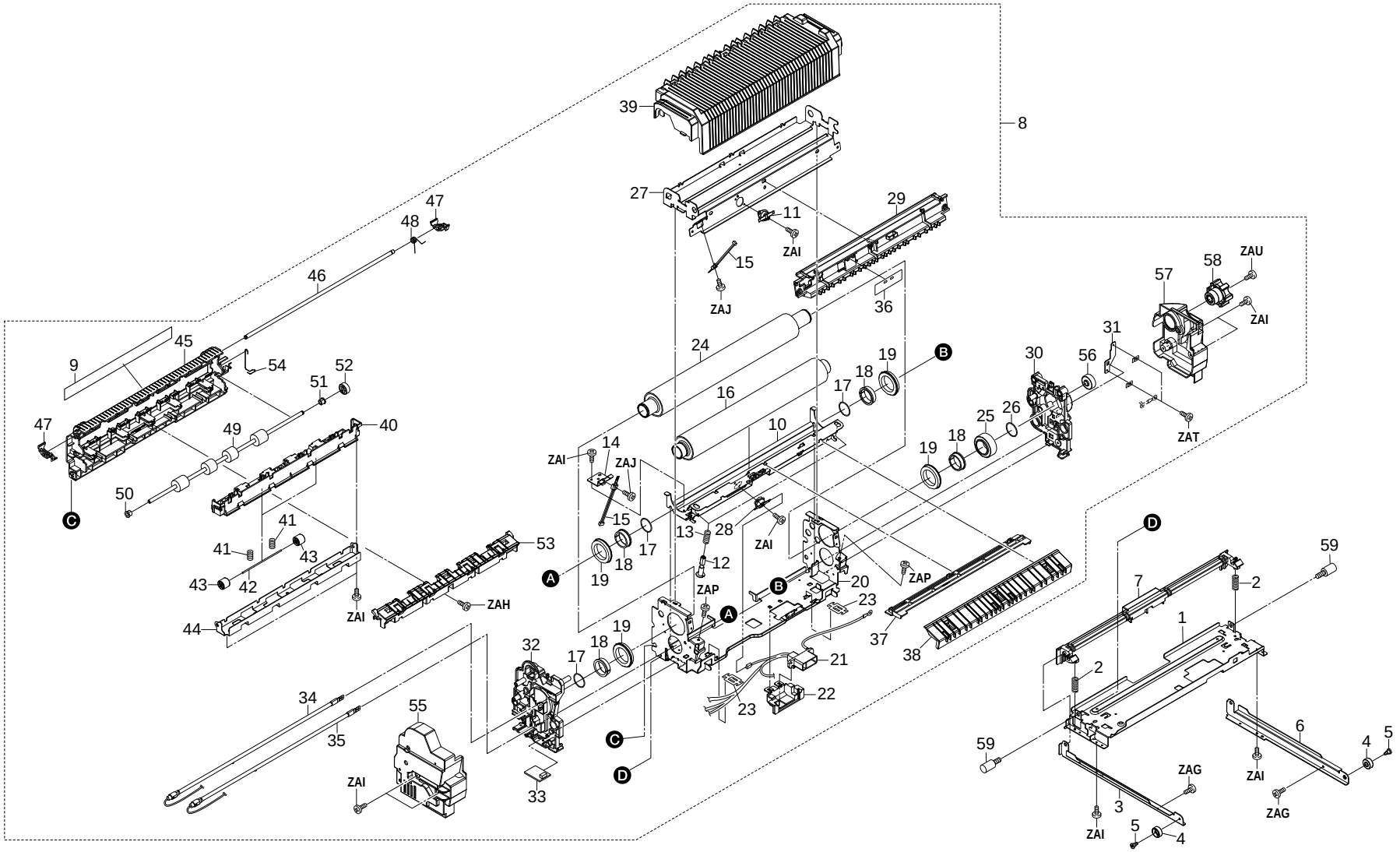
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FIG. 10 Fuser Unit

2BF-3

SP	Ref.No.	Part.No.	Alternative.	Description	Quantity		
					120V	230V	240V
	1	2BG02260		STAY FUSER	1	1	1
	2	2BG20800		SPRING HOOK	2	2	2
	3	2BG02270		SLIDER FUSER F	1	1	1
⊙	4	2BG20340		PULLEY SLIDER	2	2	2
	5	2BG20350		PIN PULLEY	2	2	2
	6	2BG02280		SLIDER FUSER R	1	1	1
	7	2BG20750		HOOK FUSER LOCK	1	1	1
⊙	8	2BF93020		PARTS,FK-810(U)	1		
⊙	8	2BF93030		PARTS,FK-810(E)		1	1
	9	•2BG05010		LABEL CAUTION FUSER	1	1	1
	10	•2BG20060		FRAME ROLLER LOW	1	1	1
⊙	11	•2BG20910		THERMOSTAT 150	1	1	1
	12	•2BG20120		PIN PRESSURE	2	2	2
	13	•2BG20130		SPRING PRESS FUSER	2	2	2
	14	•2BG20870		MOUNT THERMISTOR LOW	1	1	1
⊙	15	•2BG20580		THERMISTOR UP	2	2	2
⊙	16	•2BG20020		ROLLER HEAT LOW	1	1	1
	17	•2BG20900		STOPPER FUSER B	3	3	3
⊙	18	•2CK20040		BUSH HEAT ROLLER	4	4	4
⊙	19	•2BG20150		BEARING FUSER	4	4	4
	20	•2BG20030		FRAME FUSER	1	1	1
	21	•2BF27071		WIRE,FUSER UNIT	1	1	1
	22	•2BG20360		HOLDER DRAWER	1	1	1
	23	•2BG20840		SHEET HARNESS A	2	2	2
⊙	24	•2BG20010		ROLLER HEAT UP	1	1	1
⊙	25	•2BG20140		GEAR FUSER Z38S	1	1	1
	26	•2BG20880		STOPPER FUSER	1	1	1
	27	•2BG20040		FRAME FUSER UP	1	1	1
⊙	28	•2BG20920		THERMOSTAT 140	1	1	1
⊙	29	•2BG20080		GUIDE ENTRANCE UP	1	1	1
	30	•2BG20480		HOLDER HEATER R	1	1	1
	31	•2BG20590		PLATE FUSER HEATER	1	1	1
	32	•2BG20470		HOLDER HEATER F	1	1	1
⊙	33	•2BG01170		PCB FIXING ASS'Y	1	1	1
⊙	34	•2BG20430		LAMP HEATER UP 120	1		
⊙	34	•2BG20450		LAMP HEATER UP 240		1	1
⊙	35	•2BG20440		LAMP HEATER LOW 120	1		
⊙	35	•2BG20460		LAMP HEATER LOW 240		1	1
	36	•2BG20860		SHEET HARNESS C	1	1	1
	37	•2BG20070		GUIDE ENTRANCE	1	1	1
⊙	38	••2BG20090		GUIDE ENTRANCE LOW	1	1	1
	39	•2BG20550		COVER FUSER UP	1	1	1
⊙	40	•2BG20210		GUIDE EXIT UP	1	1	1
	41	•2BG20890		SPRING FUSER EXIT	4	4	4
	42	•2BG20330		SHAFT EXIT	2	2	2
⊙	43	•2BG20320		PULLY EXIT	4	4	4
	44	•2BG20190		STAY FUSER UP	1	1	1
	45	•2BG20180		COVER FUSER EXIT	1	1	1
	46	•2BG20290		SHAFT EXIT RELEASE	1	1	1
	47	•2BG20600		HOOK EXIT RELEASE	2	2	2
	48	•2BG20310		SPRING EXIT RELEASE	1	1	1
⊙	49	•2BG20270		ROLLER FUSER EXIT	1	1	1
	50	•2BG22960		BUSH 6	1	1	1
	51	•2BG22970		BUSH 6 EW	1	1	1
	52	•2BG20510		GEAR Z17S EXIT	1	1	1
⊙	53	•2BG20220		GUIDE EXIT LOW	1	1	1
⊙	54	•2BG20610		TERMINAL EXIT ROLLER	1	1	1
	55	•2BG20560		COVER FUSER F	1	1	1
⊙	56	•2BG20530		GEAR Z23S IDLE	1	1	1
	57	•2BG20570		COVER FUSER R	1	1	1
	58	•2BG20540		HANDLE FUSER	1	1	1
	59	2BG02400		PIN HOOK	2	2	2

• Parts with "•" are component parts or sub-assemblies of the assembly appearing immediately above them.
• Parts with "⊙"" indicates the spare parts.

• Parts with "••" are component parts or sub-assembly with "•" appearing immediately above them.

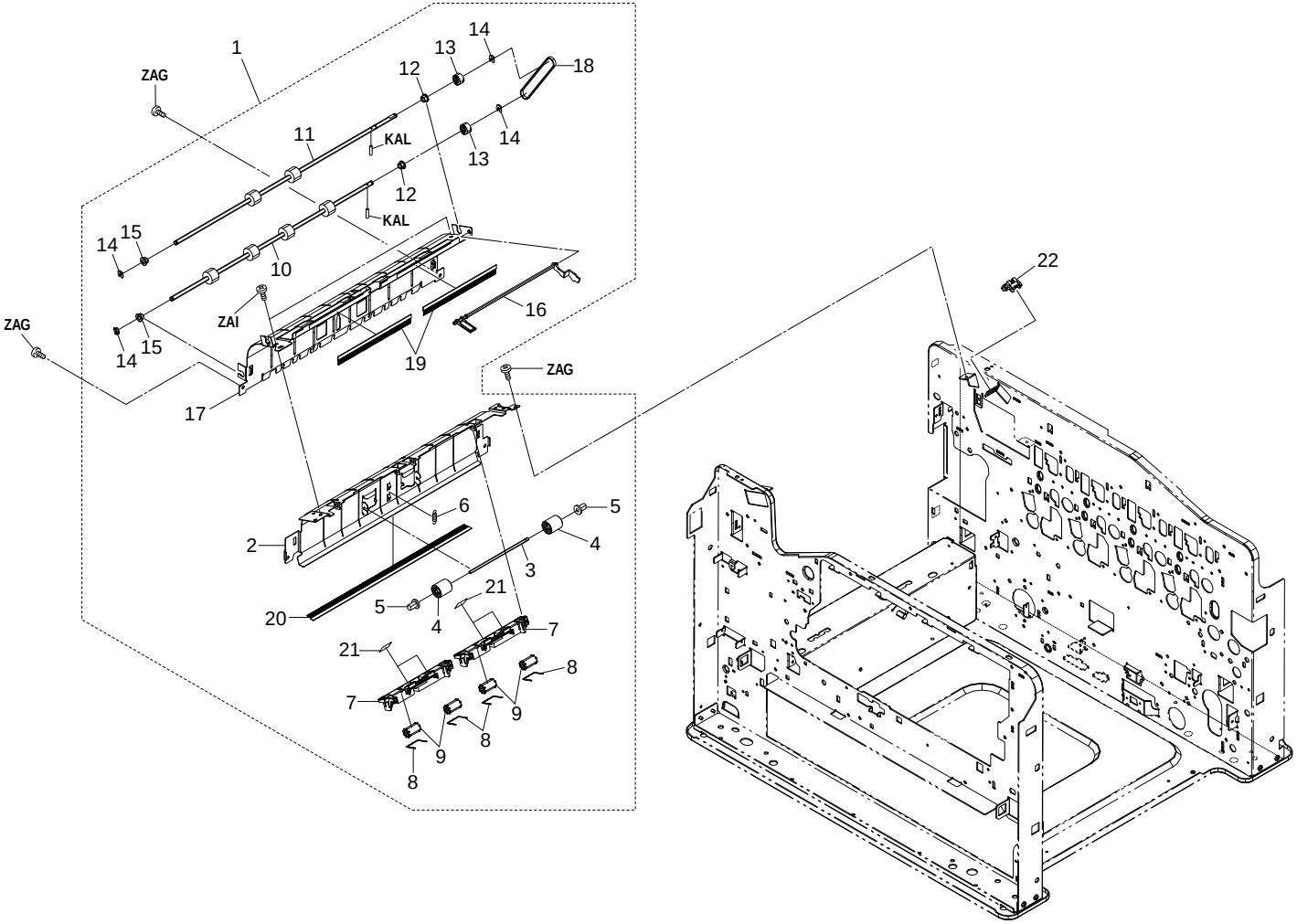
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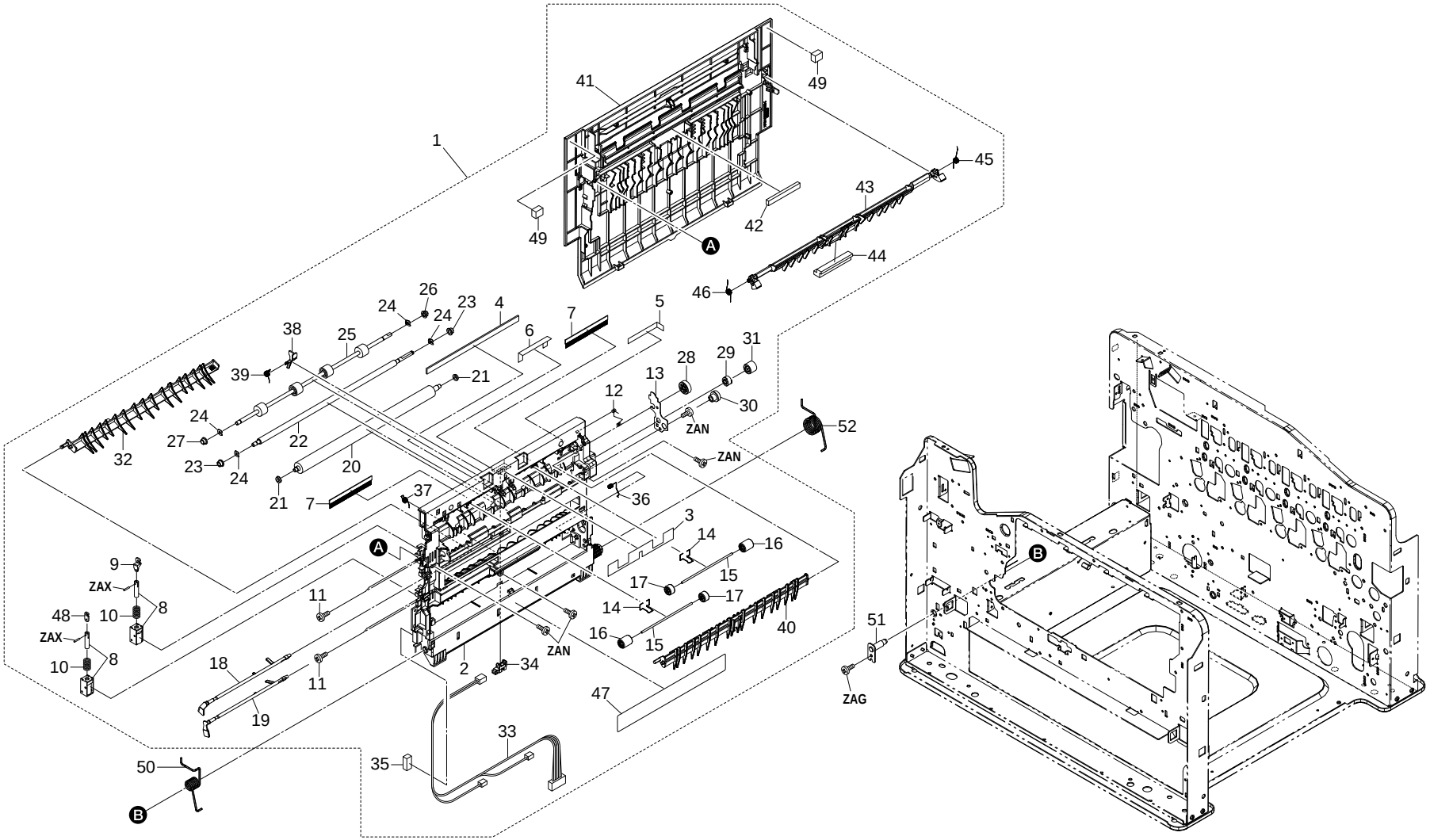
FIG. 11 Exit Unit 1

SP	Ref.No.	Part.No.	Alternative.	Description	Quantity		
					120V	230V	240V
⊙	1	302BF00102	2BF00102	EXIT F ASS'Y	1	1	1
	2	•2BG21240		PLATE EXIT A	1	1	1
	3	•2BG21080		SHAFT PULLEY EXIT A	1	1	1
⊙	4	•302BG06161	2BG06161	PULLEY FEED	2	2	2
	5	•2BG07580		BUSH EXIT ROLLER	2	2	2
	6	•2BG21390		SPRING PULLEY EXIT B	1	1	1
	7	•2BG21770		HOLDER PULLEY EXIT	2	2	2
⊙	8	•2BG21170		PULLEY EXIT FD	4	4	4
	9	•2BG21970		SPRING PULLEY FD	4	4	4
⊙	10	•2BG21010		ROLLER EXIT A	1	1	1
⊙	11	•2BG21020		ROLLER EXIT B	1	1	1
	12	•2BG22970		BUSH 6 EW	2	2	2
⊙	13	•3A722040		PULLEY 24,CONVEYING	2	2	2
⊙	14	•5MVX111DN003	2A806250	RING STOPPER	4	4	4
	15	•2BG22960		BUSH 6	2	2	2
⊙	16	•2BG21280		ACTUATOR EXIT A	1	1	1
	17	•2BG21250		PLATE EXIT B	1	1	1
⊙	18	•2BG21180		BELT,DRIVE EXIT	1	1	1
	19	•2BG21580		DISCHARGER EXIT FD	2	2	2
	20	•2BG21590		DISCHARGER EXIT MID	1	1	1
	21	•302BG07591	2BG07591	SHEET FD	4	4	4
⊙	22	2A127050		SWITCH,PHOT0 INTERRUPTOR	1	1	1

• Parts with "•" are component parts or sub-assemblies of the assembly appearing immediately above them.
• Parts with "⊙"" indicates the spare parts.

• Parts with "••" are component parts or sub-assembly with "•" appearing immediately above them.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ZAG

FIG. 12 Exit Unit 2

2BF-3

SP	Ref.No.	Part.No.	Alternative.	Description	Quantity		
					120V	230V	240V
⊙	1	302BG00432	2BG00432	EXIT ASS'Y	1	1	1
⊙	2	•2BG21460		GUIDE EXIT(1/4)	1	1	1
	3	•2BG21660		SHEET EXIT GUIDE	1	1	1
	4	•2BG21650		SEAL EXIT B	1	1	1
	5	•2BG21610		TAPE DIS JOINT	1	1	1
	6	•2BG21620		TAPE DIS JOINT CE	1	1	1
	7	•2BG21060		DISCHARGER EXIT	2	2	2
⊙	8	•2BG21430		SOLENOID FEED	2	2	2
	9	•2BG21790		PLATE SOLENOID	1	1	1
	10	•5MMW261SD009	2BM17220	SPRING SOLENOID	2	2	2
	11	•5MMT143SZ014	2BR20470	STUD SCREW M3	4	4	4
	12	•2BG21860		SPRING JOINT EXIT	1	1	1
	13	•2BG21710		PLATE GUIDE R	1	1	1
	14	•2BG21290		SPRING PULLEY FU	2	2	2
	15	•2BG21090		SHAFT PULLEY EXIT B	2	2	2
⊙	16	•2BG21070		PULLEY EXIT	2	2	2
	17	•2BG21540		PULLEY EXIT FU	2	2	2
⊙	18	•302BG21761	2BG21761	ACTUATOR FUSER EXIT	1	1	1
⊙	19	•2BG21260		ACT FUSER DU	1	1	1
⊙	20	•2BG21740		ROLLER EXIT SPG	1	1	1
⊙	21	•2AV22410		BEARING,DRIVE	2	2	2
⊙	22	•2BG21050		ROLLER EXIT E	1	1	1
	23	•3CY07080		BUSHING 6	2	2	2
⊙	24	•5MVX111DN003	2A806250	RING STOPPER	4	4	4
⊙	25	•2BG21030		ROLLER EXIT C	1	1	1
	26	•2BG22970		BUSH 6 EW	1	1	1
	27	•2BG22960		BUSH 6	1	1	1
⊙	28	•2BG07430		GEAR Z42 EXIT B	1	1	1
⊙	29	•2BG07420		PULLEY SEPARATOR 23 B	1	1	1
⊙	30	•2BG21160		GEAR Z21-Z20 EXIT	1	1	1
⊙	31	•2BG07410		GEAR Z20 EXIT B	1	1	1
⊙	32	•302BG21831	2BG21831	GUIDE CHANGE DU	1	1	1
	33	•2BG27970		WIRE,EJECT UNIT	1	1	1
⊙	34	•2A127050		SWITCH,PHOT0 INTERRUPTOR	1	1	1
	35	•2BG21630		SPONGE EXIT FRAME	1	1	1
	36	•2BG21700		SPRING EARTH JOINT	1	1	1
	37	•2BG21490		SPRING FUSER ACT DU	1	1	1
⊙	38	•2BG21380		ACTUATOR EXIT B	1	1	1
	39	•2BG21980		SPRING ACT FU	1	1	1
⊙	40	•302BG21821	2BG21821	GUIDE CHANGE FD	1	1	1
⊙	41	••2BG21230		COVER EXIT	1	1	1
⊙	42	•2BG21670		SEAL EXIT A	1	1	1
⊙	43	•2BG21960		HANDLE EXIT	1	1	1
⊙	44	•2BG21990		SEAL EXIT C	1	1	1
	45	•2BG20790		SPRING HOOK FUSER	1	1	1
	46	•2BG21550		SPRING HOOK EXIT	1	1	1
⊙	47	•2BG05060		LABEL OPERATION LEFT	1	1	1
	48	•5MVS217DB003	2BM17180	PLATE LEVER SOL	1	1	1
⊙	49	•2BG07610		SHEET EXIT COVER	2	2	2
	50	2BG21470		SPRING EXIT F	1	1	1
	51	2BG21300		PLATE EXIT COVER	1	1	1
	52	2BG21480		SPRING EXIT R	1	1	1

• Parts with "•" are component parts or sub-assemblies of the assembly appearing immediately above them.
• Parts with "⊙"" indicates the spare parts.

• Parts with "••" are component parts or sub-assembly with "•" appearing immediately above them.

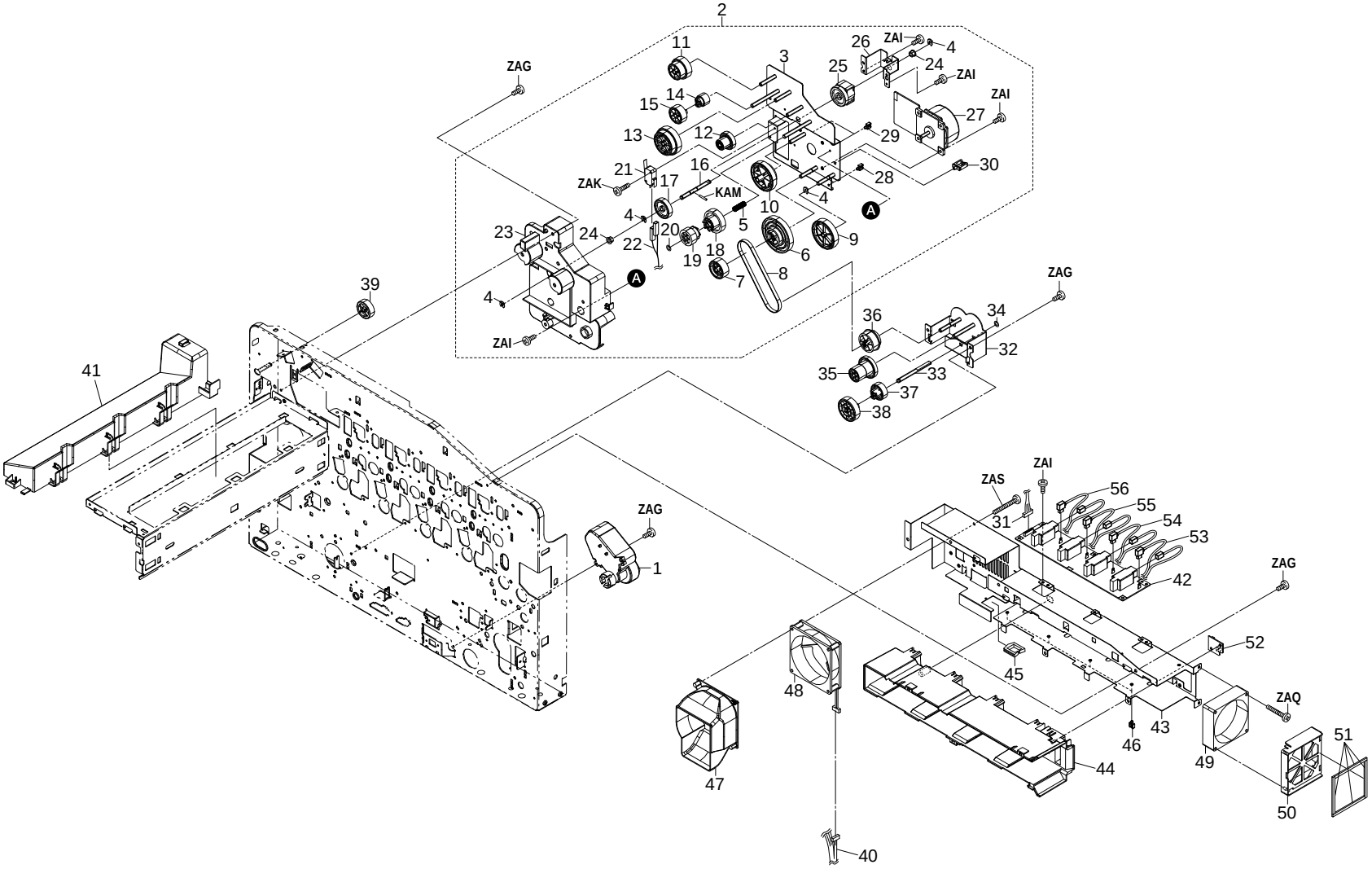
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FIG. 13 Drive Units 1

2BF-3

SP	Ref.No.	Part.No.	Alternative.	Description	Quantity		
					120V	230V	240V
⊙	1	2BC27120		MOTOR B,LIFT CASSETTE	1	1	1
⊙	2	2BG00550		FUSER DRIVE ASS'Y	1	1	1
	3	•2BG22100		PLATE DRIVE FUSER	1	1	1
⊙	4	•5MVX111DN003	2A806250	RING STOPPER	4	4	4
	5	•2BG22190		SPRING JOINT F	1	1	1
⊙	6	•2BG22490		GEAR Z120H-Z34P	1	1	1
⊙	7	•2BG22460		GEAR Z37H	1	1	1
⊙	8	•2BG22480		BELT DU	1	1	1
⊙	9	•2BG22070		GEAR Z60H	1	1	1
⊙	10	•2BG22180		GEAR Z97H-Z35S	1	1	1
⊙	11	•2BG22120		GEAR Z34S-Z33H	1	1	1
⊙	12	•2BG22160		GEAR Z28S-Z20H	1	1	1
⊙	13	•2BG22110		GEAR Z56H-Z50S	1	1	1
⊙	14	•2BG22700		GEAR Z22S EJ	1	1	1
⊙	15	•2BG22130		GEAR Z35S EJ	1	1	1
	16	•2BG22560		SHAFT FUSER CLUTCH	1	1	1
⊙	17	•68314090		GEAR,DEVELOPING SPIRAL	1	1	1
⊙	18	•2BG22150		GEAR Z46H	1	1	1
⊙	19	•2BG22140		GEAR Z26S	1	1	1
	20	•5MVS665KB001	2BM40060	CUT WASHER	1	1	1
⊙	21	•2AV27370		SWITCH,INTERLOCK	1	1	1
	22	•2BG27290		WIRE,FUSER MOTOR	1	1	1
	23	•2BG22090		HOLDER GEAR	1	1	1
	24	•2BG22960		BUSH 6	2	2	2
⊙	25	•2BG22650		CLUTCH FUSER	1	1	1
	26	•2BG22910		PLATE CLUTCH FUSER	1	1	1
⊙	27	•2BG27140		MOTOR,FIXING	1	1	1
	28	•M2105730		MINIATURE CLAMP,UAMS-07-0	2	2	2
	29	•M2105740		MINIATURE CLAMP,UAMS-05S-2	2	2	2
	30	•M2109080	49828500	LOCKING WIRE SADDLE,LWS-4NS	1	1	1
	31	2BG27310		WIRE,MC PCB	1	1	1
	32	2BG22440		PLATE DRIVE DU	1	1	1
	33	2BG22450		SHAFT DU	1	1	1
	34	5MVS665KB001	2BM40060	CUT WASHER	1	1	1
⊙	35	2BG22510		GEAR Z45S-Z28S	1	1	1
⊙	36	2BG22500		GEAR Z36P-Z34S	1	1	1
⊙	37	2BG22710		GEAR Z33S DU	1	1	1
⊙	38	2BG22470		GEAR Z38S DU	1	1	1
⊙	39	2BG21420		GEAR Z29 EXIT	1	1	1
	40	2BF27090		WIRE,LPH PCB	1	1	1
	41	2BG23010		DUCT COOLING	1	1	1
⊙	42	2BG28060		MCH HV PWB	1	1	1
	43	2BG26300		STAY DUCT	1	1	1
	44	2BG10150		DUCT MCH	1	1	1
	45	M2104270		EDGING,EDS-2323U(KITAGAWA)	1	1	1
	46	M2105740		MINIATURE CLAMP,UAMS-05S-2	4	4	4
	47	2BG23020		DUCT COOLING FAN	1	1	1
⊙	48	2BG27550		FAN 92X25-300	1	1	1
⊙	49	2BG27790		FAN 80X25-100	1	1	1
	50	2BG10140		BRACKET FAN	1	1	1
⊙	51	2BG10170		SEAL DUCT MCH	4	4	4
⊙	52	2BG01200		ASSY,PCB ENVIRONMENT SENSOR	1	1	1
	53	2BG27920		WIRE,MC HIGH VOLTAGE M	1	1	1
	54	2BG28660		WIRE,MC HIGH VOLTAGE C	1	1	1
	55	2BG28670		WIRE,MC HIGH VOLTAGE Y	1	1	1
	56	2BG28680		WIRE,MC HIGH VOLTAGE K	1	1	1

• Parts with "•" are component parts or sub-assemblies of the assembly appearing immediately above them.
• Parts with "⊙"" indicates the spare parts.

• Parts with "••" are component parts or sub-assembly with "•" appearing immediately above them.

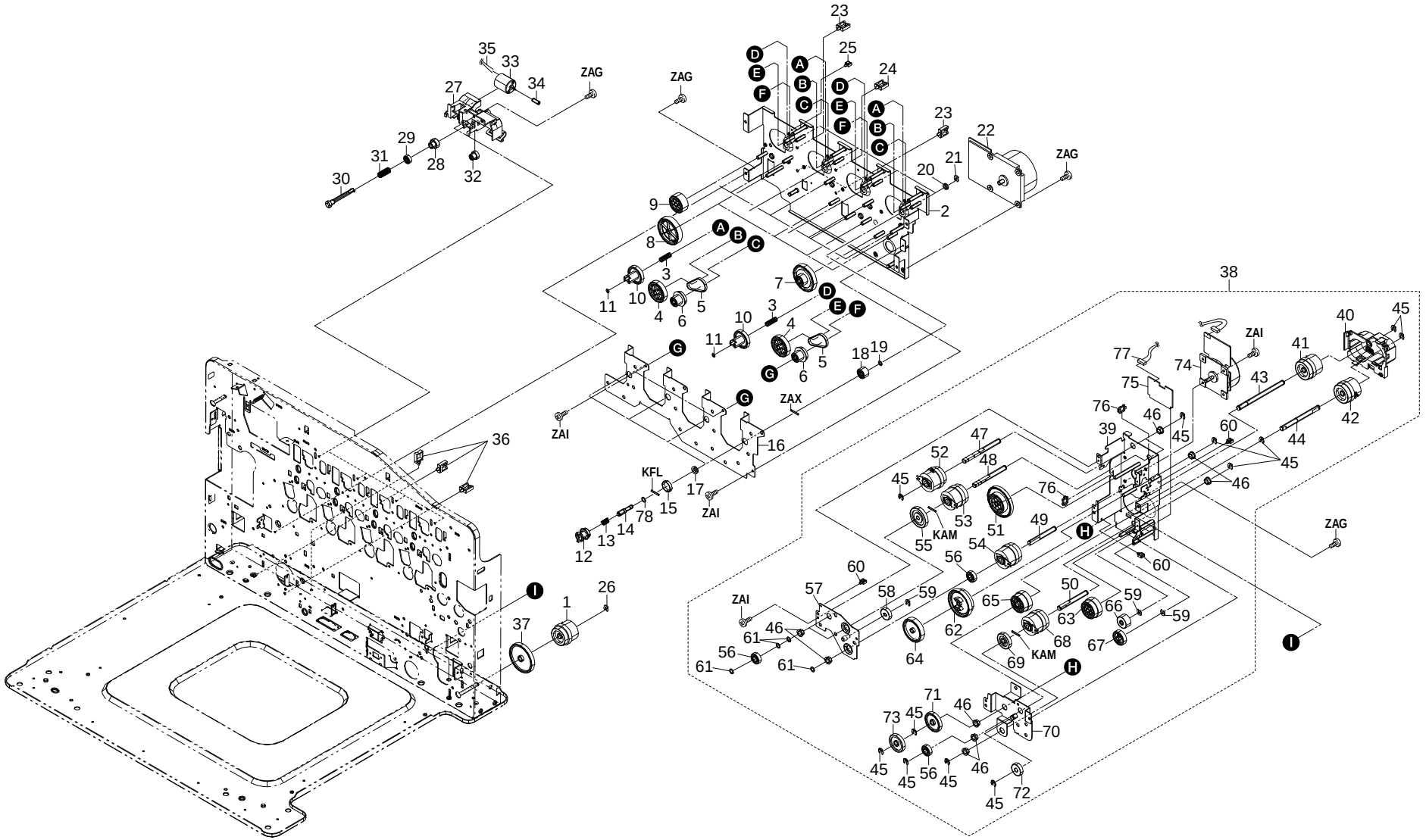
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FIG. 14 Drive Units 2

2BF-3

SP	Ref.No.	Part.No.	Alternative.	Description	Quantity		
					120V	230V	240V
⊙	1	2BG22420		CLUTCH REGIST 32	1	1	1
	2	2BG22040		PLATE MAIN DRIVE R	1	1	1
	3	2BG22190		SPRING JOINT F	4	4	4
⊙	4	2BG22600		GEAR Z16S-Z40P	4	4	4
⊙	5	2BG22630		BELT CONT DRIVE	4	4	4
⊙	6	2BG22590		GEAR Z46H-Z20P	4	4	4
⊙	7	2BG22060		GEAR Z70H-Z23H	1	1	1
⊙	8	2BG22070		GEAR Z60H	4	4	4
⊙	9	2BG22540		GEAR Z38H	6	6	6
⊙	10	2BG22610		GEAR Z32S CONT	4	4	4
	11	2BG22990		CUT WASHER 4	4	4	4
	12	2BG22520		COUPLING DLP DRIVE	4	4	4
	13	2BG22530		SPRING COUPLING DLP	4	4	4
	14	2BG22050		SHAFT DLP DRIVE	4	4	4
	15	2BG22860		COLLAR DLP COUPLING	4	4	4
	16	2BG22030		PLATE MAIN DRIVE F	1	1	1
	17	2BG22940		BEARING MF128ZZ	4	4	4
⊙	18	2BG22080		GEAR Z20H	4	4	4
	19	5MVS665KB001	2BM40060	CUT WASHER	4	4	4
⊙	20	2AV22410		BEARING,DRIVE	4	4	4
⊙	21	5MVX111DN003	2A806250	RING STOPPER	4	4	4
⊙	22	2BG27130		MOTOR,COLOR DEVELOPING	1	1	1
	23	M2109070	49427224	LOCKING WIRE SADDLE,LWS-3NS	3	3	3
	24	M2109310		WIRE SADDLE,HL-28-0(KITAGAWA)	1	1	1
	25	M2105740		MINIATURE CLAMP,UAMS-05S-2	1	1	1
	26	2BC06980		STOPPER 5	1	1	1
	27	2BG22830		HOLDER CONT DRIVE	4	4	4
	28	2BG22820		WORM WHEEL 32-Z20S	4	4	4
⊙	29	2BG22840		GEAR Z28S CONT	4	4	4
	30	2BG22800		JOINT CONT DRIVE	4	4	4
⊙	31	5MMW361LD018	2BM14190	SP JOINT T SW D1234	4	4	4
⊙	32	2BG22810		GEAR Z28S-Z20S CONT	4	4	4
⊙	33	5EZND2402601+01	2BM27340	DC MOTOR	4	4	4
⊙	34	5MVG115DB002	2BM14540	GEAR WORM	4	4	4
	35	2BG28690		WIRE,MOTOR TONER	4	4	4
	36	M2109020	49829401	WIRE SADDLE,WS-2WS	3	3	3
⊙	37	2BG22350		GEAR Z54S	1	1	1
⊙	38	2BG00540		FEED DRIVE ASS'Y	1	1	1
	39	•2BG22260		PLATE FEED DRIVE R	1	1	1
	40	•2BG22280		HOLDER CLUTCH	1	1	1
⊙	41	•2BG22670		CLUTCH 1 FEED H	1	1	1
⊙	42	•2BG22680		CLUTCH 1 FEED L	1	1	1
	43	•2BG22390		SHAFT PICK-UP CL H	1	1	1
	44	•2BG22400		SHAFT PICK-UP CL L	1	1	1
	45	•2BC06980		STOPPER 5	13	13	13
	46	•2BG22980		BUSH 8	10	10	10
	47	•2BG22360		SHAFT REGIST CLUTCH	1	1	1
	48	•2BG22370		SHAFT FEED CLUTCH H	1	1	1
	49	•2BG22380		SHAFT FEED CLUTCH L	1	1	1
	50	•2BG22410		SHAFT FEED CLUTCH B	1	1	1
⊙	51	•2BG22290		GEAR Z111H-Z36S	1	1	1
⊙	52	•2BG22420		CLUTCH REGIST 32	1	1	1
⊙	53	•2BG22430		CLUTCH FEED 34	1	1	1
⊙	54	•2BG22660		CLUTCH FEED L	1	1	1
⊙	55	•29407260	45729402	GEAR 37,S.B	1	1	1
⊙	56	•2BG22310		GEAR Z18S	4	4	4
	57	•2BG22250		PLATE FEED UPPER F	1	1	1
⊙	58	•34922410		GEAR 20	1	1	1
⊙	59	•5MVX111DN003	2A806250	RING STOPPER	3	3	3
	60	•M2105740		MINIATURE CLAMP,UAMS-05S-2	3	3	3
	61	•2BG22930		CUT WASHER 6	7	7	7
⊙	62	•2BG22300		GEAR Z99H-Z43S	1	1	1
⊙	63	•2BG22320		GEAR Z34S-Z31S	1	1	1
⊙	64	•2BG22340		GEAR Z43S	1	1	1
⊙	65	•2BG22550		GEAR Z34S-Z31S8	1	1	1
⊙	66	•3A821110		GEAR 21	1	1	1
⊙	67	•36714140		REAR GEAR 25,DEVELOPING	1	1	1
⊙	68	•2BG22690		CLUTCH DESK FEED L	1	1	1
⊙	69	•29407360	45729404	GEAR B,PF PULLEY	1	1	1
	70	•2BG22270		PLATE FEED LOW F	1	1	1
⊙	71	•2BG22330		GEAR Z35S	1	1	1
⊙	72	•72622060		GEAR,CENTRAL LEAD ROLLER	1	1	1
⊙	73	•2AZ22490		GEAR 32,TRANSFER DRIVE	1	1	1
⊙	74	•2BG27160		MOTOR,PAPER FEED	1	1	1
⊙	75	•2BG01140		PCB CLUTCH JUNCTION ASS'Y	1	1	1
	76	•M2104350		EDGING,EDS-0607M(KITAGAWA)	2	2	2
	77	•2BG27210		WIRE,PAPER FEED MOTOR	1	1	1
	78	2BG22930		CUT WASHER 6	4	4	4

• Parts with "•" are component parts or sub-assemblies of the assembly appearing immediately above them.
• Parts with "⊙"" indicates the spare parts.

• Parts with "••" are component parts or sub-assembly with "•" appearing immediately above them.

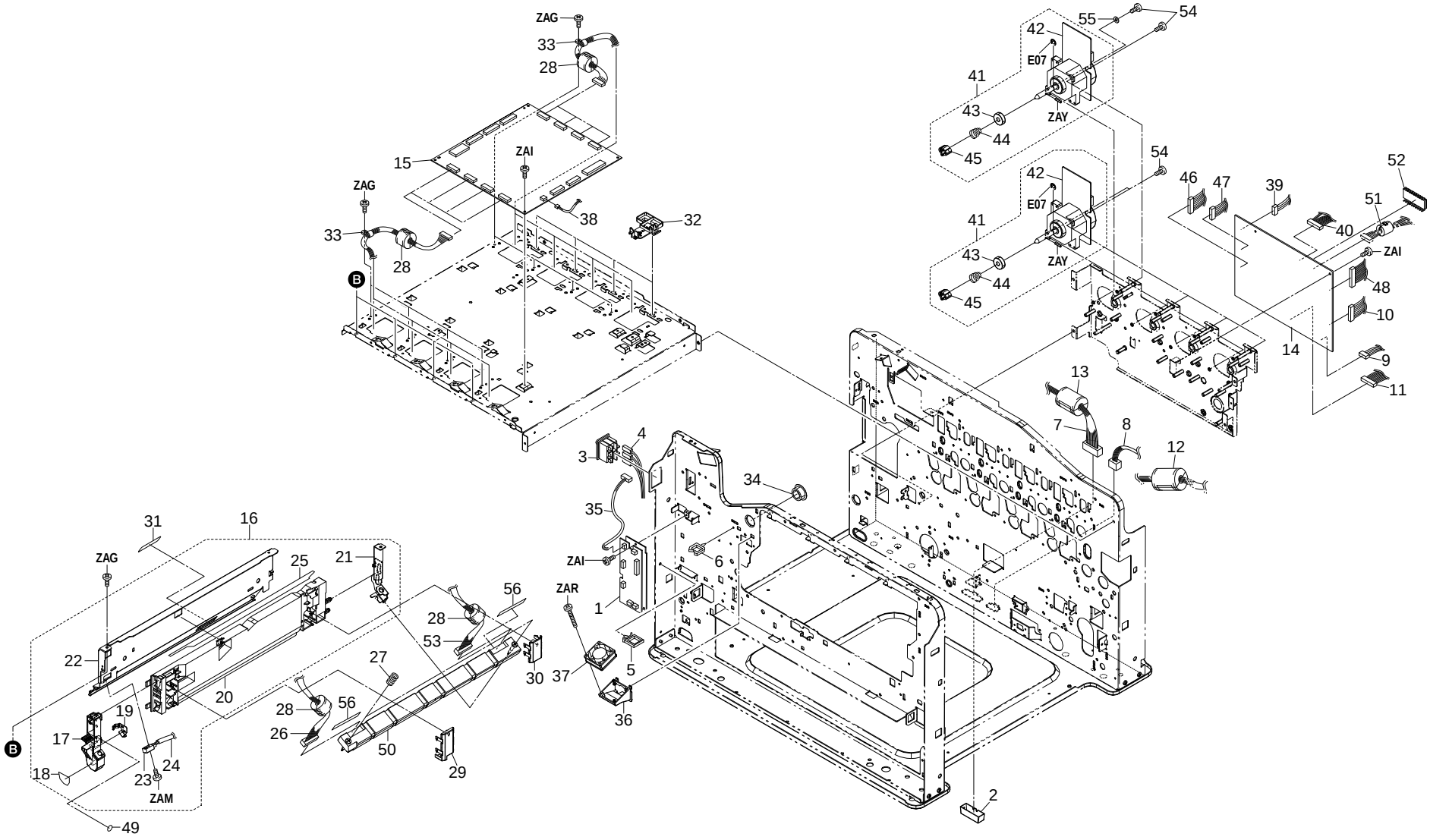
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FIG. 15 Electrical Components 1

2BF-3

SP	Ref.No.	Part.No.	Alternative.	Description	Quantity		
					120V	230V	240V
⊙	1	2BG01130		FRONT PCB JUNCTION ASS'Y	1	1	1
	2	2BG02490		COVER DESK DRAWER	1	1	1
⊙	3	2BG27060		SWITCH,MAIN	1	1	1
	4	2BG27180		WIRE,MAIN SWITCH	1	1	1
	5	M2105740		MINIATURE CLAMP,UAMS-05S-2	1	1	1
	6	M2109060	49427223	LOCKING WIRE SADDLE,LWS-2NS	1	1	1
	7	2BG27220		WIRE,DESK	1	1	1
	8	2BG27800		WIRE,OPTION JUNCTION	1	1	1
	9	2BG27330		WIRE,LIFT MOTOR	1	1	1
	10	2BG27250		WIRE,COLOR DEVE MOTOR	1	1	1
	11	2BG27430		WIRE,CLUTCH PCB	1	1	1
	12	M70CA010		FERRITE CORE,SFT-72SN(TAKEUCHI)	1	1	1
	13	M70C0010		FERRITE CORE,SFT-59SN(TAKEUCHI)	1	1	1
⊙	14	302BF68020	2BF68020	ENGINE MAIN PCB ASS'Y,SP	1	1	1
⊙	15	2BG01035		LPH DRIVE ASS'Y	1	1	1
⊙	16	302BG00231	2BG00231	LPH ASS'Y (M)(C)(Y)	3	3	3
⊙	16	302BG00241	2BG00241	LPH BK ASS'Y (K)	1	1	1
	17	•2BG13020		HOLDER LPH F	4	4	4
	18	•2BG05030		LABEL CAUTION LPH	4	4	4
	19	•2BG13070		PLATE EARTH LPH	4	4	4
	20	•302BG13051	2BG13051	DUCT MCH GUIDE	4	4	4
	21	•2BG13030		HOLDER LPH R	4	4	4
	22	•2BG13060		STAY LPH	4	4	4
	23	•3B827040		SENSOR 12,SEPARATION (M)(C)(Y)	3	3	3
	24	•2BG28600		WIRE,T EMP SW JUNCTION (M)(C)(Y)	3	3	3
	25	•2BG13120		SEAL DUCT UP	4	4	4
	26	302BG27752	2BG27752	WIRE,LPH(M)	1	1	1
	26	302BG28772	2BG28772	WIRE,LPH(C)	1	1	1
	26	302BG28782	2BG28782	WIRE,LPH(Y)	1	1	1
	26	302BG28512	2BG28512	WIRE,LPH(K)	1	1	1
	27	2BG13040		SPRING LPH	8	8	8
	28	3HK27050		CORE 8-16X10	16	16	16
	29	302BG13081	2BG13081	COVER DUCT MCH F	4	4	4
	30	302BG13091	2BG13091	COVER DUCT MCH R	4	4	4
⊙	31	2BG13100		SEAL STAY LPH	4	4	4
	32	2BF02520		STOPPER CONTAINER G		4	4
	32	2BF02530		STOPPER CONTAINER H	4		
	33	M70A5010		CLAMP,EMT-4N(TAKEUCHI)	8	8	8
	34	2BG02730		SPONGE HARNESS F	1	1	1
	35	2BG27980		WIRE,FRONT COVER SWITCH	1	1	1
	36	2BG23050		DUCT FAN 40	1	1	1
⊙	37	2BG23060		FAN 40	1	1	1
	38	2BG27840		WIRE,HUMIDITY SENSOR	1	1	1
	39	2BG28560		WIRE,POWER SOURCE B	1	1	1
	40	2BG27710		WIRE,DRUM MOTOR	1	1	1
⊙	41	2BG00560		DRUM DRIVE ASS'Y	4	4	4
⊙	42	•2BG27120		MOTOR,DRUM	4	4	4
⊙	43	•G3006080	45506083	BEARING,#608ZZ	4	4	4
	44	•2BG22020		SPRING JOINT D	4	4	4
⊙	45	•2BG22010		JOINT DRUM	4	4	4
	46	2BG27360		WIRE,POWER SOURCE A	1	1	1
	47	2BG27370		WIRE,POWER SOURCE SIGNAL	1	1	1
	48	2BG27420		WIRE,PRINTER SIGNAL	1	1	1
	49	2BG68160		LABEL RED(M)	1	1	1
	49	2BG68170		LABEL BLUE(C)	1	1	1
	49	2BG68180		LABEL YELLOW(Y)	1	1	1
	49	2BG68190		LABEL BLACK(K)	1	1	1
⊙	50	2BG13010		LPH	4	4	4
	51	2A627930		CORE 11-25X14	1	1	1
⊙	52	NCQ05070		EEPROM,24LC256-I/P	1	1	1
	53	302BG28821	2BG28821	WIRE,LPH(M) R	1	1	1
	53	302BG28841	2BG28841	WIRE,LPH(C) R	1	1	1
	53	302BG28851	2BG28851	WIRE,LPH(Y) R	1	1	1
	53	302BG28831	2BG28831	WIRE,LPH(K) R	1	1	1
	54	302BG02860	2BG02860	M4 12 CRFREE ST	8	8	8
	55	302BG02870	2BG02870	WASHER M4 10 CRFREE	1	1	1
	56	2BG13110		SHEET LPH HARNESS	8	8	8

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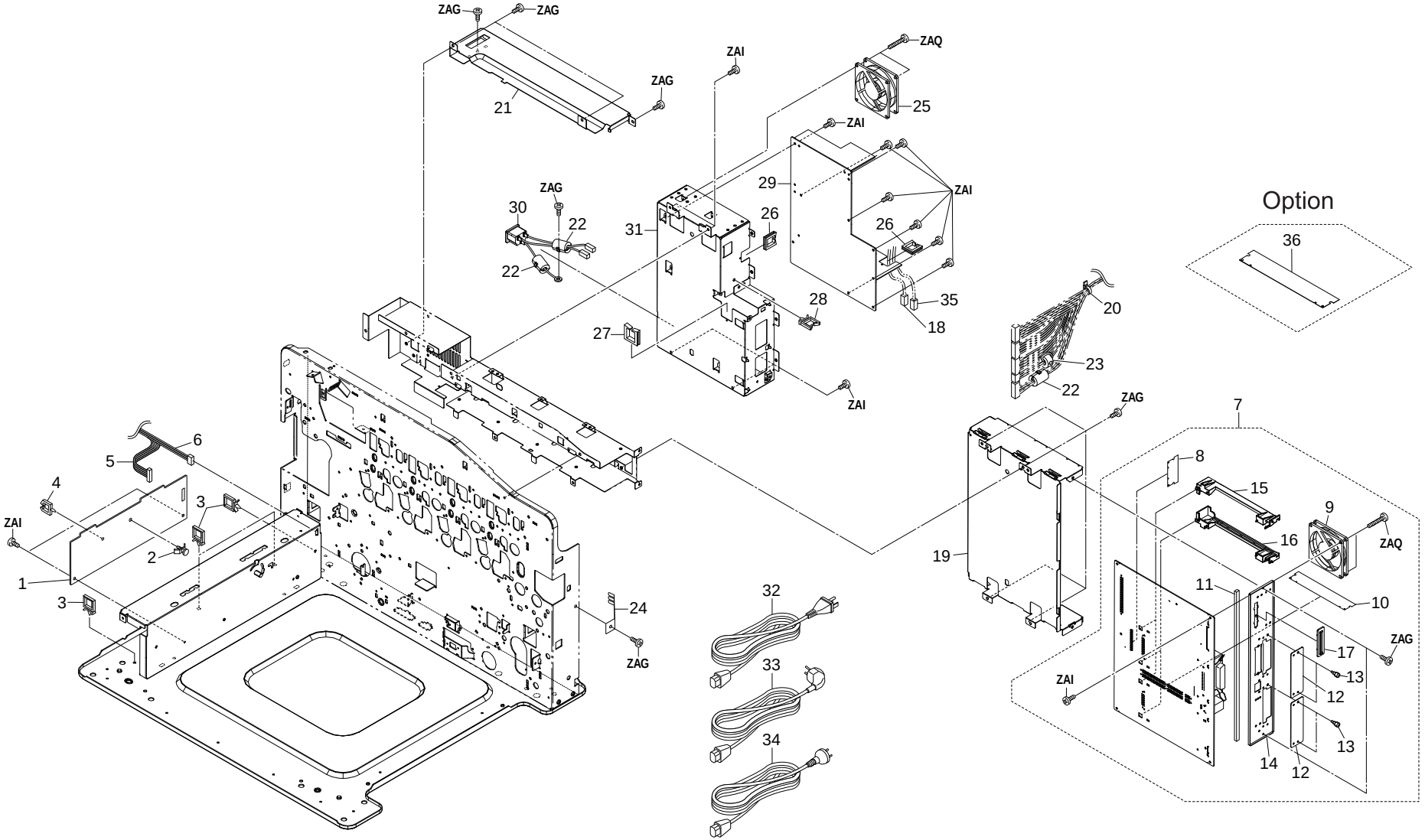
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FIG. 16 Electrical Components 2

SP	Ref.No.	Part.No.	Alternative.	Description	Quantity		
					120V	230V	240V
⊙	1	302BG28261	2BG28261	DB HV PWB	1	1	1
	2	M2108290		SPACER,KGPS-10S	1	1	1
	3	M2109060	49427223	LOCKING WIRE SADDLE,LWS-2NS	4	4	4
	4	M2105740		MINIATURE CLAMP,UAMS-05S-2	1	1	1
	5	2BG27340		WIRE,DU SWITCH JUNCTION	1	1	1
	6	2BG27170		WIRE,DB PCB	1	1	1
⊙	7	302BF68040	2BF68040	CONTROLLER ASS'Y SP		1	1
⊙	7	302BF68070	2BF68070	CONTROLLER ASS'Y US SP	1		
⊙	8	•2BF01040		DIMM ASS'Y	1	1	1
⊙	9	•2BF27020		FAN 80X15-60	1	1	1
⊙	10	•5AAXAP069GEA	2BF27050	IC DIMM-128M	1	1	1
	11	•3H027010		GASKET SHIELD PRN	1	1	1
	12	•5MMS636SD009	3BH26020	PLATE,OPTION	2	2	2
	13	•3BH26030		PIN,OPTION	4	4	4
	14	•302BG26031	2BG26031	PLATE MAIN	1	1	1
	15	•5MVB743SL004	2BL26210	RAIL OPTION A	2	2	2
	16	•5MVB743SL005	2BL26220	RAIL OPTION B	2	2	2
	17	•5MVX621SH003	2BM26020	GUIDE CF CARD	1	1	1
	18	J0223020	41529100	RECEPTACLE EL 2P,ELR-02V	1	1	1
	19	2BG26010		BOX CONTROLLER	1	1	1
	20	M0207000	49826601	BINDING BAND,KB-100-1	1	1	1
	21	2BG26310		PLATE SHIELD	1	1	1
	22	M70C0010		FERRITE CORE,SFT-59SN(TAKEUCHI)	3	3	3
	23	2A627940		CORE 10-20X10	1	1	1
	24	2BG02760		PLATE EARTH CONT BOX	1	1	1
⊙	25	2BG27890		FAN 80X25-120	1	1	1
	26	M2104220		EDGING,EDS-1717U	2	2	2
	27	M2104270		EDGING,EDS-2323U(KITAGAWA)	1	1	1
	28	M2109020	49829401	WIRE SADDLE,WS-2WS	1	1	1
⊙	29	2BF01022		POWER SUPPLY ASS'Y(100)	1		
⊙	29	2BF01032		POWER SUPPLY ASS'Y(200)		1	1
⊙	30	2BG01070		POWER INLET ASS'Y	1	1	1
	31	2BG26020		SHIELD BOX	1	1	1
	32	19527400		POWER CORD(120)	1		
	33	2AR27800		POWER CORD(230)		1	
	34	3029927232	29927232	POWER CODE AS(240)			1
	35	J0220020	41529101	PLUG EL 2P,ELP-02V	1	1	1
⊙	36	2A727740		IC,DIMM MEMORY1	1	1	1
⊙	36	5AAXAP069GEA	2BF27050	IC DIMM-128M	1	1	1
⊙	36	5AAXAP068GEA	2BF60040	168PIN DIMM 64M	1	1	1

• Parts with "•" are component parts or sub-assemblies of the assembly appearing immediately above them.
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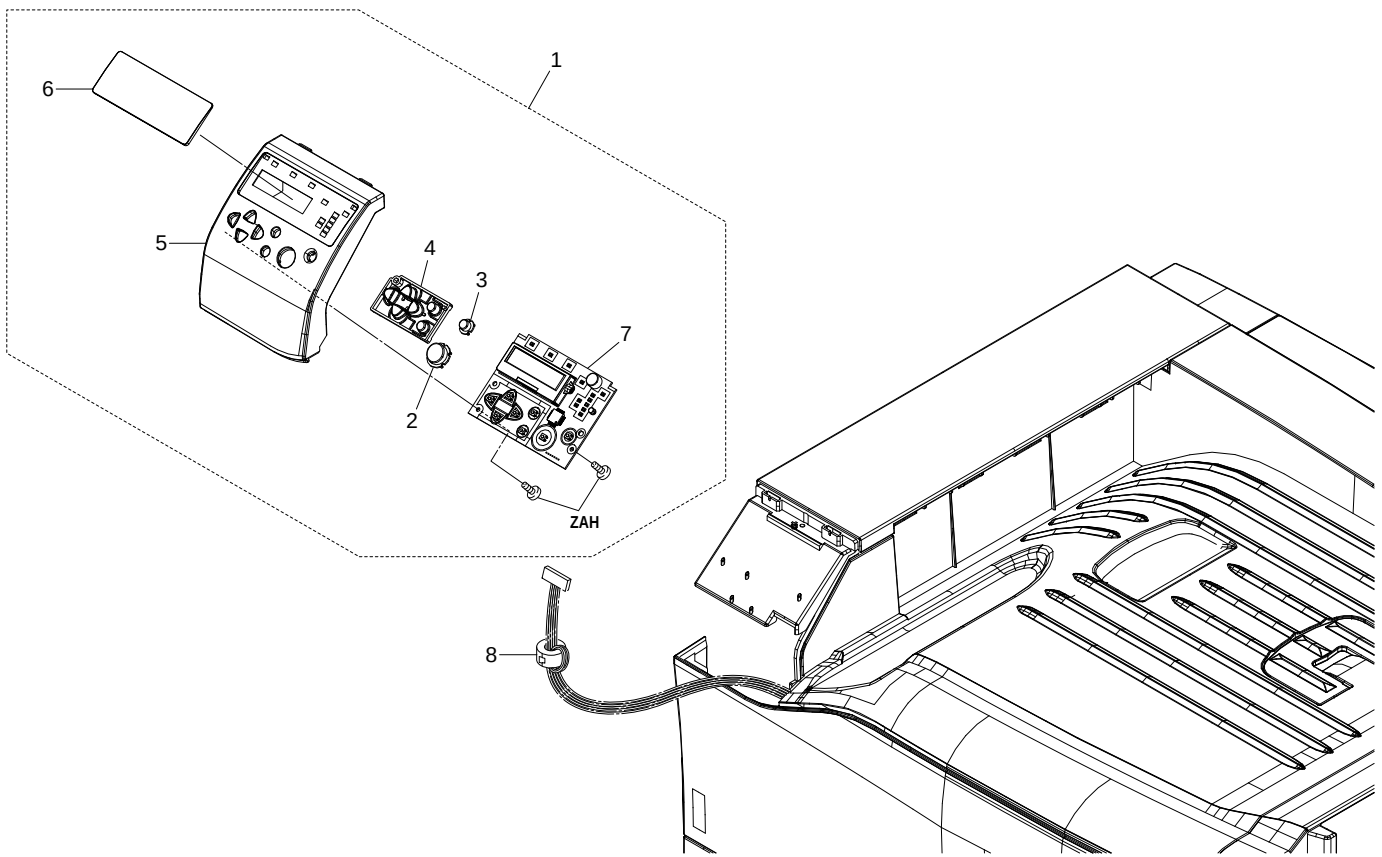
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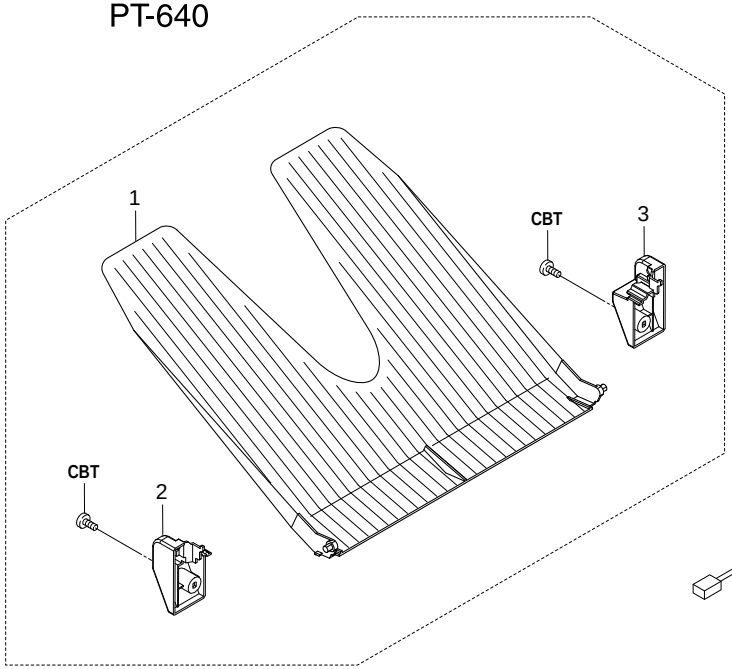
FIG. 17 Operation Unit & Maintenance Kits

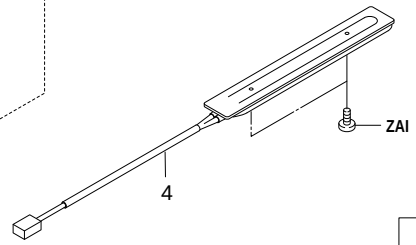
SP	Ref.No.	Part.No.	Alternative.	Description	Quantity		
					120V	230V	240V
⊙	1	2BF00020		OPERATION E ASS'Y	1	1	1
⊙	1	2BF00030		OPERATION I ASS'Y I		1	
⊙	1	2BF00040		OPERATION F ASS'Y F		1	
⊙	2	•2BF04040		KEY START	1	1	1
⊙	3	•2BF04050		KEY CANCEL	1	1	1
⊙	4	•2BF04060		BUTTON	1	1	1
⊙	5	•2BF04010		COVER OPERATION	1	1	1
⊙	5	•2BF04110		COVER OPERATION I		1	
⊙	5	•2BF04120		COVER OPERATION F		1	
⊙	6	•2BF04020		PANEL OPERATION	1	1	1
⊙	7	•2BF01050		OPERATION PCB ASS'Y	1	1	1
	8	2A627940		CORE10-20X10	1	1	1
		2BF82120		SET,MK810A(U)(OPTION)	1		
⊙		•2BF93020		PARTS,FK-810(U)	1		
⊙		•302BF93066	2BF93066	PARTS,TR-810	1		
⊙		•2BG23030		OZON FILTER	1		
		2BF82130		SET,MK810A(E)(OPTION)		1	1
⊙		•2BF93030		PARTS,FK-810(E)		1	1
⊙		•302BF93066	2BF93066	PARTS,TR-810		1	1
⊙		•2BG23030		OZON FILTER		1	1
		2BF82140		SET,MK810B(J/E)(OPTION)		1	1
⊙		•2BF93112		PARTS,DK-810		1	1
⊙		•2BG93170		PARTS,DV-810K(J/E)		1	1
		2BF82150		SET,MK810B(U)(OPTION)	1		
⊙		•2BF93112		PARTS,DK-810	1		
⊙		•2BG93180		PARTS,DV-810K(U)	1		
		2BF82160		SET,MK810C(J/E)(OPTION)		1	1
⊙		•2BF93112		PARTS,DK-810		3	3
⊙		•302BG93111	2BG93111	PARTS,DV-810Y(J/E)		1	1
⊙		•302BG93131	2BG93131	PARTS,DV-810M(J/E)		1	1
⊙		•302BG93151	2BG93151	PARTS,DV-810C(J/E)		1	1
		2BF82170		SET,MK810C(U)(OPTION)	1		
⊙		•2BF93112		PARTS,DK-810	3		
⊙		•302BG93121	2BG93121	PARTS,DV-810Y(U)	1		
⊙		•302BG93141	2BG93141	PARTS,DV-810M(U)	1		
⊙		•302BG93161	2BG93161	PARTS,DV-810C(U)	1		

• Parts with "•" are component parts or sub-assemblies of the assembly appearing immediately above them.
• Parts with "⊙"" indicates the spare parts.

• Parts with "••" are component parts or sub-assembly with "•" appearing immediately above them.

PT-640





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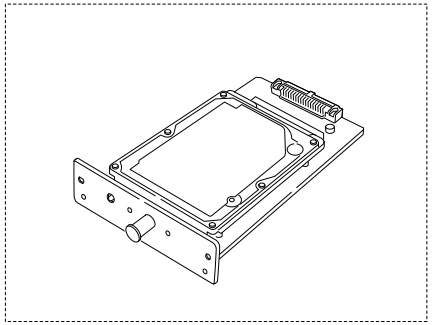

*HD-10 does not give separate supply for option.

FIG. 18 Option 1

2BF-7

SP	Ref.No.	Part.No.	Alternative.	Description	Quantity		
					120V	230V	240V
⊙	1	2BG60010		TRAY OP	1	1	1
	2	2BG60020		BKT OP TRAY F	1	1	1
	3	2BG60100		BKT OP TRAY R	1	1	1
	4	2BG28740		HEATER,DEHUMIDIFIER(120)	1		
	4	2BG28750		HEATER,DEHUMIDIFIER(230)		1	1

• Parts with "•" are component parts or sub-assemblies of the assembly appearing immediately above them.
• Parts with "⊙"" indicates the spare parts.

• Parts with "••" are component parts or sub-assembly with "•" appearing immediately above them.

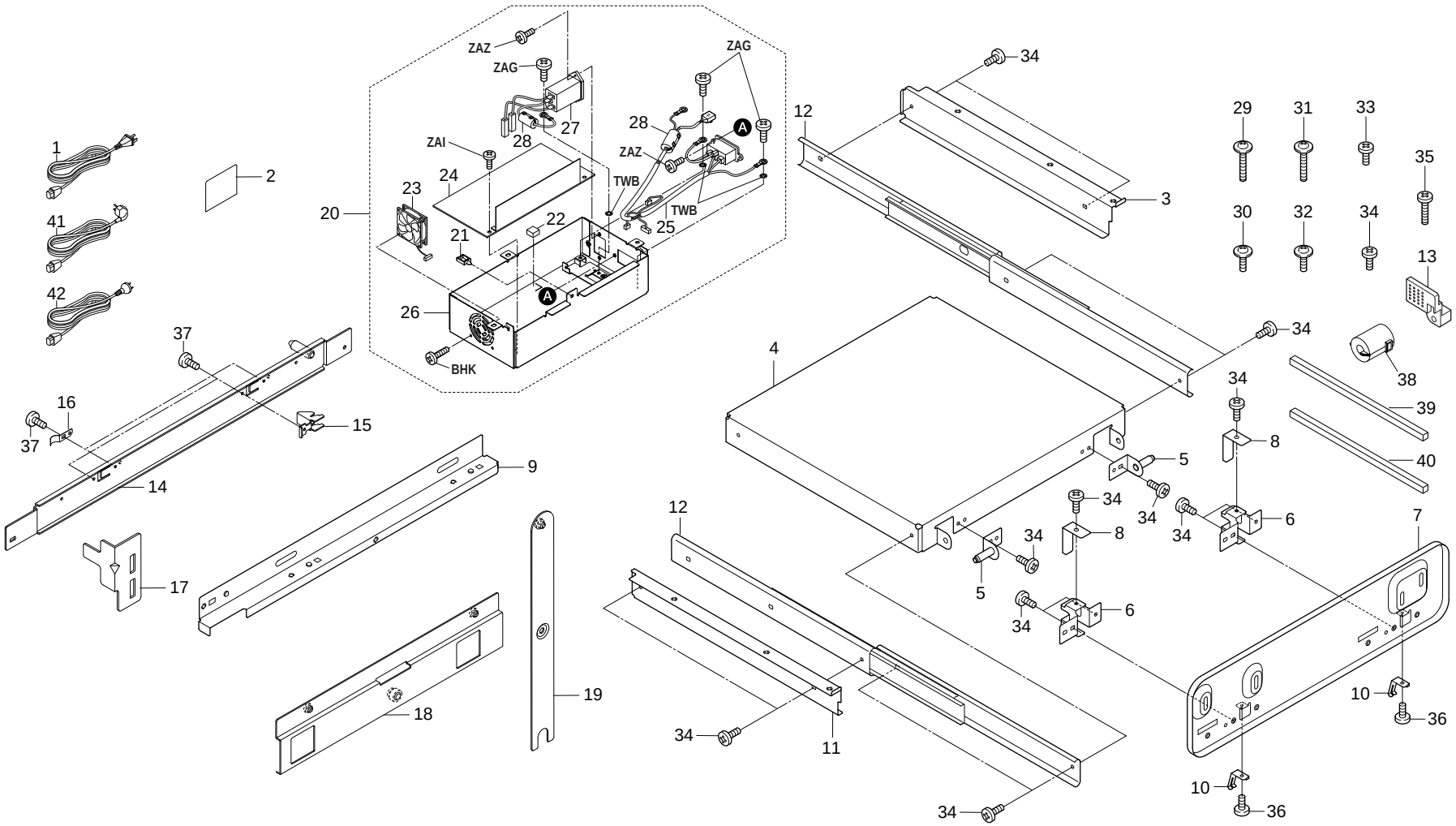
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FIG. 19 Option 2 (AK-640A)

2BF-3

SP	Ref.No.	Part.No.	Alternative.	Description	Quantity		
					120V	230V	240V
		3B882050		SET AK-640A(120)(OPTION)	1		
		3B882060		SET AK-640A(230)(OPTION)		1	
		303B882100	3B882100	SET AK-640A(240)(OPTION)			1
	1	•19527400		POWER CORD(120)	1		
	2	•3B860560		FILM,CONVEYING	2	2	2
	3	•3B803510		REAR RETAINER,SLIDER	1	1	1
	4	•3B803520		MOUNT,SLIDER	1	1	1
	5	•3B803530		JUNCTION PLATE,SLIDER	2	2	2
	6	•3B803540		JUNCTION PLATE,MACHINE	2	2	2
	7	•3B803550		MOUNT,MACHINE	1	1	1
	8	•3B803560		STOPPER,JUNCTION PLATE	2	2	2
	9	•3B803570		RAIL,RELEASE	1	1	1
	10	•18526211		GROUND PLATE A,NOISE	2	2	2
	11	•3B803500		FRONT RETAINER,SLIDER	1	1	1
	12	•3B803600		SLIDER,FINISHER	2	2	2
	13	•3B803610		HANDLE,RELEASE	1	1	1
	14	•3B860510		RETAINER M,RELEASE	1	1	1
	15	•3B860520		HOOK M,RELEASE	2	2	2
	16	•34920190		GROUND PLATE,FIXING UNIT	2	2	2
	17	•3B860530		ACTUATOR PLATE M,SAFETY SWITCH	1	1	1
	18	•3B860540		RAIL M,RELEASE	1	1	1
	19	•3B860550		JUNCTION PLATE M,RAIL	1	1	1
⊙	20	•2BG60080		OPTION BOX ASS'Y(120)	1		
⊙	20	•2BG60090		OPTION BOX ASS'Y(200)		1	1
	21	••M2109010	49513902	WIRE SADDLE,WS-2NS	1	1	1
	22	••2A626300		SPACER,MAIN PCB	1	1	1
⊙	23	••2BG27490		FAN,COOLING50	1	1	1
⊙	24	••2BG60031		OPTION POWER SUPPLY ASS'Y(100)	1		
⊙	24	••2BG60041		OPTION POWER SUPPLY ASS'Y(200)		1	1
	25	••2BG60050		WIRE,OPTION POWER SUPPLY	1	1	1
	26	••2BG60060		MOUNT OPTION POWER SOURCE	1	1	1
	27	••2BG60200		INLET ASS'Y	1	1	1
	28	••65027480		CORE,9-20X32	2	2	2
	29	•B3024140		BINDING TAP-TIGHT S SCREW M4X14	2	2	2
	30	•B4144080		+TP TAP-TITE P SCREW(CHROMIUM)	5	5	5
	31	•BAB54200		+TP TAP-TITE S SCREW M4X20(TRIVALENT CHROMATING)	2	2	2
	32	•B4303050		TRIPLE SCREW M3X5 (BLACK)	2	2	2
	33	•B1A54080		+BIND TAP-TITE S SCREW M4X08	1	1	1
	34	•B1304060		BINDING SCREW BVM4X6 (BLACK)	18	18	18
	35	•B1304100		BINDING SCREW BVM4X10 (BLACK)	4	4	4
	36	•B1303050		BINDING SCREW BVM3X5 (BLACK)	2	2	2
	37	•B1003050		BINDING SCREW CVM3X5	4	4	4
	38	•2C927230		CORE SFT-72SNB-026K	1	1	1
	39	•2BG60250		SHIELD GASKET F	2	2	2
	40	•2BG60260		SHIELD GASKET G	1	1	1
	41	•2AR27800		POWER CORD(230)		1	
	42	•3029927232	29927232	POWER CODE AS(240)			1

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• Parts with "••" are component parts or sub-assembly with "•" appearing immediately above them.

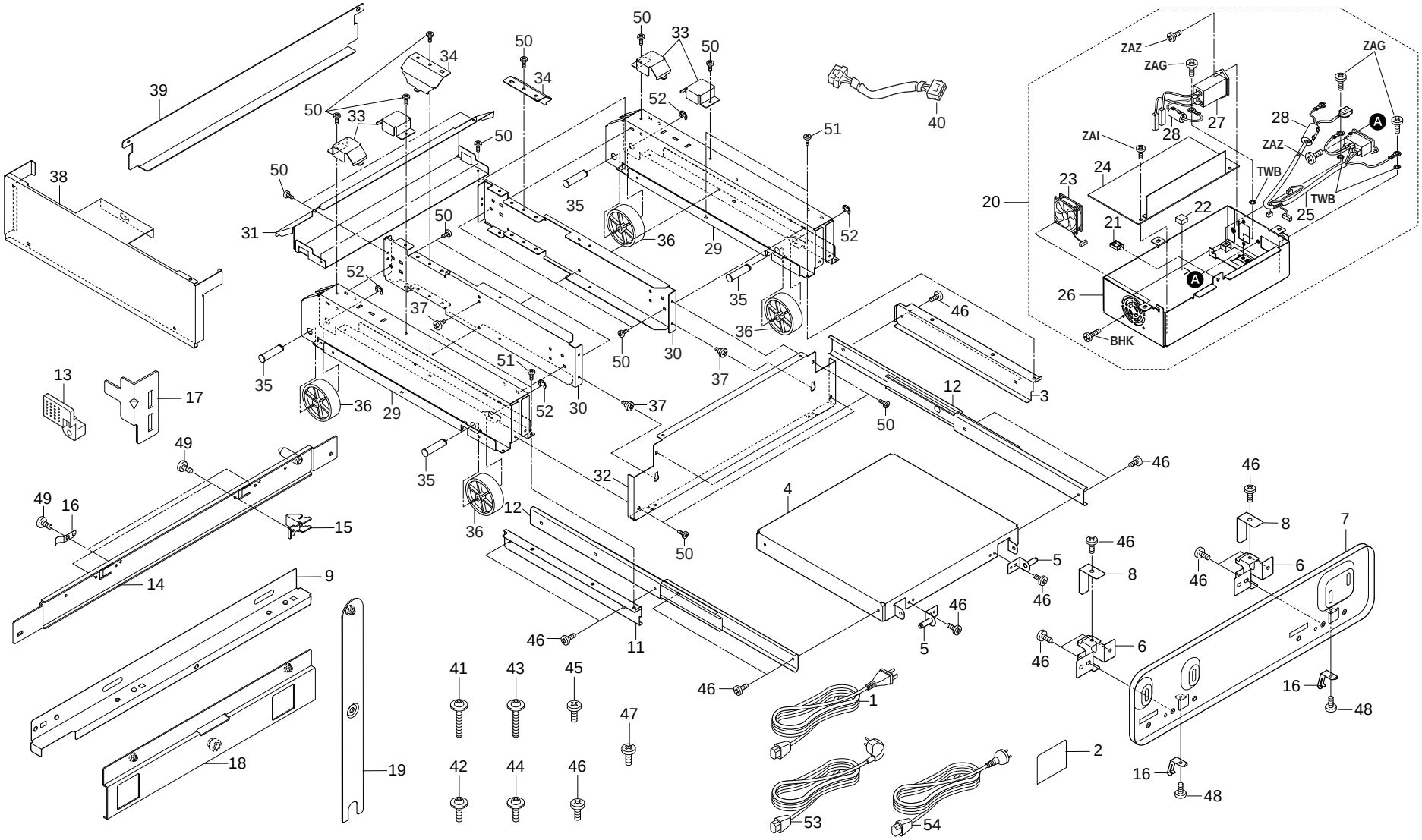
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FIG. 20 Option 3 (AK-640B)

2BF-3

SP	Ref.No.	Part.No.	Alternative.	Description	Quantity		
					120V	230V	240V
		3B882080		SET AK-640B(120)(OPTION)	1		
		3B882090		SET AK-640B(230)(OPTION)		1	
		303B882110	3B882110	SET AK-640B(240)(OPTION)			1
	1	•19527400		POWER CORD(120)	1		
	2	•3B860560		FILM,CONVEYING	2	2	2
	3	•3B803510		REAR RETAINER,SLIDER	1	1	1
	4	•3B803520		MOUNT,SLIDER	1	1	1
	5	•3B803530		JUNCTION PLATE,SLIDER	2	2	2
	6	•3B803540		JUNCTION PLATE,MACHINE	2	2	2
	7	•3B803550		MOUNT,MACHINE	1	1	1
	8	•3B803560		STOPPER,JUNCTION PLATE	2	2	2
	9	•3B803570		RAIL,RELEASE	1	1	1
	10	•18526211		GROUND PLATE A,NOISE	2	2	2
	11	•3B803500		FRONT RETAINER,SLIDER	1	1	1
	12	•3B803600		SLIDER,FINISHER	2	2	2
	13	•3B803610		HANDLE,RELEASE	1	1	1
	14	•3B860510		RETAINER M,RELEASE	1	1	1
	15	•3B860520		HOOK M,RELEASE	2	2	2
	16	•34920190		GROUND PLATE,FIXING UNIT	2	2	2
	17	•3B860530		ACTUATOR PLATE M,SAFETY SWITCH	1	1	1
	18	•3B860540		RAIL M,RELEASE	1	1	1
	19	•3B860550		JUNCTION PLATE M,RAIL	1	1	1
⊙	20	•2BG60080		OPTION BOX ASS'Y(120)	1		
⊙	20	•2BG60090		OPTION BOX ASS'Y(200)		1	1
	21	••M2109010	49513902	WIRE SADDLE,WS-2NS	1	1	1
	22	••2A626300		SPACER,MAIN PCB	1	1	1
⊙	23	••2BG27490		FAN,COOLING50	1	1	1
⊙	24	••2BG60031		OPTION POWER SUPPLY ASS'Y(100)	1		
⊙	24	••2BG60041		OPTION POWER SUPPLY ASS'Y(200)		1	1
	25	••2BG60050		WIRE,OPTION POWER SUPPLY	1	1	1
	26	••2BG60060		MOUNT OPTION POWER SOURCE	1	1	1
	27	••2BG60200		INLET ASS'Y	1	1	1
	28	••65027480		CORE,9-20X32	2	2	2
	29	•3B860610		MOUNT BASE M,BASE	2	2	2
	30	•3B860620		FRAME M,BASE	2	2	2
	31	•3B860630		LEFT STAY M,BASE	1	1	1
	32	•3B860640		RIGHT STAY M,BASE	1	1	1
	33	•3B860650		FRONT GUIDE M,BASE	4	4	4
	34	•3B860660		REAR GUIDE M,BASE	2	2	2
	35	•3B860670		SHAFT M,BASE	4	4	4
	36	•3AK02080		PULLEY,FINISHER	4	4	4
	37	•77706670		PIN,FEED FULCRUM	3	3	3
	38	•3B860680		LEFT COVER M,BASE	1	1	1
	39	•3B860690		RIGHT COVER M,BASE	1	1	1
	40	•2BG60240		WIRE,FINISHER JUNCTION	1	1	1
	41	•B3024140		BINDING TAP-TIGHT S SCREW M4X14	2	2	2
	42	•B4144080		+TP TAP-TITE P SCREW(CHROMIUM)	5	5	5
	43	•BAB54200		+TP TAP-TITE S SCREW M4X20(TRIVALENT CHROMATING)	2	2	2
	44	•B4303050		TRIPLE SCREW M3X5 (BLACK)	2	2	2
	45	•B1A54080		+BIND TAP-TITE S SCREW M4X08	1	1	1
	46	•B1304060		BINDING SCREW BVM4X6 (BLACK)	24	24	24
	47	•B4104060		TRIPLE SCREW M4X6(CHROMIUM)	2	2	2
	48	•B1303050		BINDING SCREW BVM3X5 (BLACK)	2	2	2
	49	•B1003050		BINDING SCREW CVM3X5	4	4	4
	50	•B1B04060		+BIND SCREW M4X06(TRIVALENT CHROMATING)	20	20	20
	51	•B1004100		BINDING SCREW CVM4X10	4	4	4
	52	•D1000900		STOP RING (E-9)	4	4	4
	53	•2AR27800		POWER CORD(230)		1	
	54	•3029927232	29927232	POWER CODE AS(240)			1

• Parts with "•" are component parts or sub-assemblies of the assembly appearing immediately above them.
• Parts with "⊙"" indicates the spare parts.

• Parts with "••" are component parts or sub-assembly with "•" appearing immediately above them.

SP	Part.No.	Alternative.	Description	Fig.No.
	18526211		GROUND PLATE A,NOISE	19,20
	19527400		POWER CORD(120)	16,19,20
⊙	29407260	45729402	GEAR 37,S.B	14
⊙	29407360	45729404	GEAR B,PF PULLEY	14
	3029927232	29927232	POWER CODE AS(240)	16,19,20
⊙	33906060		LOWER PULLEY,PAPER FEED	5
	33906080		SHAFT,LEADING FEED PULLEY	5
	33906090		LOWER LEVER,PAPER FEED PULLEY RELEASE	5
	33906180		WEIGHT,LEADING FEED PULLEY	5
	33906211		VIBRATION INSULATOR,RELEASE LEVER	5
	33907020		WORK PLATE,CASSETTE	4
	33907080		LEVER,CASSETTE CURSOR	4
	33907120		RAIL C,CURSOR	4
	33907160		LID,PAPER SIZE DETECTION	4
	33907170		DETECTION PLATE,PAPER SIZE	4
	33907210		CUSHION,CASSETTE WORK PLATE	4
	33927210		WIRE,CASSETTE UNIT	4
⊙	33928111		SIZE DETECTION PCB	4
⊙	34806040		LOWER BUSHING,PAPER FEED	5
	34920190		GROUND PLATE,FIXING UNIT	19,20
⊙	34922220		GEAR 18,RETARD	5
⊙	34922410		GEAR 20	14
⊙	35927420		SWITCH,SIZE	1,2,3,6
⊙	36706310		BUSHING,PAPER FEED	5
⊙	36714140		REAR GEAR 25,DEVELOPING	14
	60804120		MAGNET CATCH	1
	60907170		CUSHION,CASSETTE R	4
⊙	60907880		BUSHING,BYPASS SHAFT	5
⊙	61705110		LABEL,PAPER UPPER LIMIT	4
⊙	63511220		STOP RING,4	5
⊙	63806290		BUSHING,6	5
	65027480		CORE,9-20X32	19,20
	66007310		PIN,CASSETTE WORK PLATE	4
	66106080		SPRING,PAD	4
⊙	66107100		PAD,CASSETTE	4
⊙	68314090		GEAR,DEVELOPING SPIRAL	13
⊙	72622060		GEAR,CENTRAL LEAD ROLLER	14
	77706670		PIN,FEED FULCRUM	20
⊙	2A127050		SWITCH,PHOT0 INTERRUPTOR	6,11,12
	2A626300		SPACER,MAIN PCB	19,20

SP	Part.No.	Alternative.	Description	Fig.No.
	2A627930		CORE 11-25X14	15
	2A627940		CORE 10-20X10	16,17
⊙	2A727740		IC,DIMM MEMORY1	16
	2AR27800		POWER CORD(230)	16,19,20
⊙	2AV22410		BEARING,DRIVE	12,14
⊙	2AV27370		SWITCH,INTERLOCK	2,13
⊙	2AZ22490		GEAR 32,TRANSFER DRIVE	14
	2BC04530		FRONT MAGNET,COVER	1
	2BC06010		UPPER HOUSING,PAPER FEED	5
	2BC06021		LOWER HOUSING,PAPER FEED	5
	2BC06090		WORK PLATE,LIFT CASSETTE	4
	2BC06300		SUPPORT PLATE,LEADING FEED PULLEY	5
	2BC06360		LOWER REINFORCEMENT,HOUSING PAPER FEED	5
⊙	2BC06380		ACTUATOR,PAPER EMPTY	5
	2BC06460		GUIDE,CONFLUENCE	5
	2BC06510		BUSHING 8	5
	2BC06710		SHAFT,LIFT CASSETTE	4
	2BC06720		RAIL A,CURSOR	4
⊙	2BC06790		UPPER GEAR,PAPER FEED	5
⊙	2BC06810		PULLEY,LEADING FEED	5
⊙	2BC06900		PULLEY,PAPER FEED	5
	2BC06910		STOPPER 6	6
	2BC06950		SPRING,CURSOR	4
	2BC06980		STOPPER 5	5,14
	2BC06990		STOPPER 5,RING	5
	2BC07680		SLIDER,DECK	3
	2BC07830		GROUND PLATE,CASSETTE	4
	2BC07860		TERMINAL,PAPER SIZE DETECTION	4
⊙	2BC27010		SWITCH,CONVEYING	6
⊙	2BC27120		MOTOR B,LIFT CASSETTE	13
⊙	2BF00020		OPERATION E ASS'Y	17
⊙	2BF00030		OPERATION I ASS'Y I	17
⊙	2BF00040		OPERATION F ASS'Y F	17
⊙	2BF00170		FRONT COVER ASS'Y F	1
⊙	2BF01022		POWER SUPPLY ASS'Y(100)	16
⊙	2BF01032		POWER SUPPLY ASS'Y(200)	16
⊙	2BF01040		DIMM ASS'Y	16
⊙	2BF01050		OPERATION PCB ASS'Y	17
	2BF02520		STOPPER CONTAINER G	15
	2BF02530		STOPPER CONTAINER H	15

• Parts with "⊙" indicates the spare parts.

SP	Part.No.	Alternative.	Description	Fig.No.
⊙	2BF04010		COVER OPERATION	17
⊙	2BF04020		PANEL OPERATION	17
⊙	2BF04040		KEY START	17
⊙	2BF04050		KEY CANCEL	17
⊙	2BF04060		BUTTON	17
⊙	2BF04110		COVER OPERATION I	17
⊙	2BF04120		COVER OPERATION F	17
⊙	2BF04210		COVER FRONT F	1
	2BF15030		GUIDE CONTAINER Y	2
⊙	2BF27020		FAN 80X15-60	16
	2BF27071		WIRE,FUSER UNIT	10
	2BF27090		WIRE,LPH PCB	13
	2BF27100		WIRE,IU JUNCTION K	2
	2BF27110		WIRE,IU JUNCTION M	2
	2BF27120		WIRE,IU JUNCTION C	2
	2BF27130		WIRE,IU JUNCTION Y	2
⊙	2BF77010		PACKING ASSY U	9
⊙	2BF77020		PACKING ASSY E	9
	2BF82120		SET,MK810A(U)	17
	2BF82130		SET,MK810A(E)	17
	2BF82140		SET,MK810B(J/E)	17
	2BF82150		SET,MK810B(U)	17
	2BF82160		SET,MK810C(J/E)	17
	2BF82170		SET,MK810C(U)	17
⊙	2BF93020		PARTS,FK-810(U)	10,17
⊙	2BF93030		PARTS,FK-810(E)	10,17
⊙	2BF93112		PARTS,DK-810	9,17
⊙	2BG00060		TOP COVER ASS'Y	1
⊙	2BG00100		RIGHT COVER ASS'Y	1
⊙	2BG00130		PRIMARY FEED ASS'Y	5
⊙	2BG00330		WASTE TONER ASS'Y	3
⊙	2BG00540		FEED DRIVE ASS'Y	14
⊙	2BG00550		FUSER DRIVE ASS'Y	13
⊙	2BG00560		DRUM DRIVE ASS'Y	15
⊙	2BG01035		LPH DRIVE ASS'Y	15
⊙	2BG01070		POWER INLET ASS'Y	16
⊙	2BG01130		FRONT PCB JUNCTION ASS'Y	15
⊙	2BG01140		PCB CLUTCH JUNCTION ASS'Y	14
⊙	2BG01170		PCB FIXING ASS'Y	10
⊙	2BG01200		ASSY,PCB ENVIRONMENT SENSOR	13

SP	Part.No.	Alternative.	Description	Fig.No.
	2BG02060		PLATE RAIL R	3
	2BG02070		PLATE RAIL L	3
	2BG02180		HANDLE	2,3
	2BG02220		RAIL FUSER F	3
	2BG02230		RAIL FUSER R	2
⊙	2BG02240		PULLEY RAIL	2,3
	2BG02260		STAY FUSER	10
	2BG02270		SLIDER FUSER F	10
	2BG02280		SLIDER FUSER R	10
	2BG02390		FOOT	2
	2BG02400		PIN HOOK	2,3,10
	2BG02410		SCREW A	2,3
	2BG02420		SCREW B	2
	2BG02430		GROUND DRAWER	2
	2BG02450		STAY MIDDLE	3
	2BG02460		PLATE MIDDLE L	3
	2BG02470		CAP HANDLE	2,3
	2BG02480		CAP HANDLE R	2,3
	2BG02490		COVER DESK DRAWER	15
	2BG02500		SHEET HARNESS TC	3
	2BG02600		GUIDE TC F	3
	2BG02610		GUIDE TC R	2
	2BG02620		LEVER LOCK TC F	3
	2BG02630		LEVER LOCK TC R	2
	2BG02640		SPRING LOCK TC	2,3
	2BG02650		PIN LOCK TC	2,3
	2BG02720		SPRING A	3
	2BG02730		SPONGE HARNESS F	15
	2BG02740		SHEET HARNESS R	2
	2BG02760		PLATE EARTH CONT BOX	16
⊙	2BG02770		PULLEY RAIL B	2,3
	2BG02780		SHEET RM	2
	2BG02790		SHEET FF	1
	2BG02810		SEAL PLATE LPH A	2
	2BG02820		SEAL PLATE LPH B	2
⊙	2BG04020		COVER FRONT R	1
⊙	2BG04030		COVER TOP	1
⊙	2BG04040		COVER TOP R	1
⊙	2BG04050		COVER RIGHT F	1
⊙	2BG04060		COVER RIGHT R	1

• Parts with "⊙"" indicates the spare parts.

SP	Part.No.	Alternative.	Description	Fig.No.
⊙	2BG04070		COVER LEFT	1
⊙	2BG04090		COVER TOP L	1
⊙	2BG04100		COVER CASSETTE R	1
⊙	2BG04110		COVER CASSETTE L	1
⊙	2BG04120		COVER REAR	1
⊙	2BG04130		COVER INNER MIDDLE	1
⊙	2BG04140		COVER INNER RIGHT	1
⊙	2BG04150		COVER INNER LEFT	1
	2BG04160		LEVER LOCK WASTE	1
	2BG04170		SPRING LOCK WASTE	1
⊙	2BG04270		COVER DUCT	1
⊙	2BG04300		STOPPER PAPER	1
	2BG04310		BAND A	1
	2BG04330		SPRING COVER	1
	2BG04360		CAP TOP FRONT	1
	2BG04370		CAP TOP REAR	1
⊙	2BG04520		COVER SW	1
⊙	2BG04530		SHEET SW	1
⊙	2BG04540		TAPE SW	1
	2BG05010		LABEL CAUTION FUSER	10
	2BG05030		LABEL CAUTION LPH	15
⊙	2BG05040		LABEL OPERATION FRONT	1
⊙	2BG05050		LABEL OPERATION RIGHT	1
⊙	2BG05060		LABEL OPERATION LEFT	12
	2BG05070		LABEL 1	4
⊙	2BG05080		SEAL COLOR SYMBOL	1
	2BG05090		LABET TC	7
	2BG06010		FRAME FEED	6
	2BG06020		LOCK TRAY MPF	7
	2BG06030		PLATE GUIDE REGIST LOW	6
⊙	2BG06040		ROLLER REGIST UP	6
⊙	2BG06050		ROLLER REGIST LOW	6
⊙	2BG06060		ROLLER FEED A	6
	2BG06070		SHAFT FEED UNIT	6
	2BG06080		HOOK FEED F	6
	2BG06090		SHAFT ROLL MPF	7
	2BG06100		HOLDER FEED DRIVE	6
	2BG06110		LEVER FEED B	6
	2BG06130		COVER PWB MPF B	7
	2BG06140		SHAFT FEED A	6

SP	Part.No.	Alternative.	Description	Fig.No.
	2BG06150		SHAFT FEED B	1
⊙	2BG06170		GEAR Z18S-Z22S	6
⊙	2BG06180		GEAR Z19S-Z26S	6
⊙	2BG06190		COVER FEED	6
⊙	2BG06200		COVER FEED R	1
	2BG06210		GUIDE PAPER MPF	7
	2BG06220		HOLDER TC F	6
	2BG06230		GUIDE FEED LOW	6
⊙	2BG06240		ROLLER FEED B	6
	2BG06250		PLATE FEED L	6
	2BG06260		SPRING HANDLE FEED	6
	2BG06270		STOPPER TC	6
	2BG06280		LEVER COVER FEED	6
	2BG06290		SHAFT FEED C	6
	2BG06310		RAIL FEED R	6
⊙	2BG06320		GEAR Z19S	6
⊙	2BG06330		GEAR Z15S	6
	2BG06340		SPRING REGIST A	6
	2BG06350		HANDLE FEED	6
	2BG06360		PLATE FEED F	5
	2BG06370		PLATE FEED R	5
	2BG06380		TORQUE LIMITER 360	5
	2BG06390		FRAME MPF	7
	2BG06400		SPRING PRESS TC	6
	2BG06410		SPRING EARTH GUIDE	6
	2BG06420		HOOK CASSETTE	3
	2BG06430		RAIL CASSETTE C	3
	2BG06440		LEVER FEED A	6
	2BG06450		SPRING ACT FEED	6
	2BG06460		SPRING ACT REG	6
⊙	2BG06470		SHEET REGIST	6
	2BG06480		BAND B	1
	2BG06490		SPRING REG RELEASE	6
⊙	2BG06500		SPONGE WIRE A	6
	2BG06520		PLATE LIFT MPF	7
	2BG06530		PLATE MPF UP	7
	2BG06540		CURSOR MPF R	7
	2BG06550		CURSOR MPF F	7
	2BG06570		SPONGE WIRE D	6,7
	2BG06600		TRAY MPF C	7

• Parts with "⊙'" indicates the spare parts.

SP	Part.No.	Alternative.	Description	Fig.No.
	2BG06630		PLATE FEED LOW	6
⊙	2BG06640		HIGHMEG ASSY	6
	2BG06650		SPRING FEED B	1
	2BG06660		SPRING COVER FEED	6
	2BG06670		BRACKET MPF DRAWER	7
	2BG06680		BRACKET MPF DRIVE	7
	2BG06690		SPRING EARTH FEED	6
	2BG06710		SPRING EARTH RAIL	2,3
	2BG06720		SPRING CASS HOOK	3
	2BG06730		HOLDER TC R	6
	2BG06740		HOOK FEED R	6
	2BG06750		PLATE GUIDE REGIST UP	6
⊙	2BG06760		GEAR Z28S-Z30S	7
⊙	2BG06770		GEAR Z20S-Z24S	6
	2BG06780		SHAFT FEED UP	5
⊙	2BG06790		GEAR FEED Z33S	5
	2BG06810		PLATE MPF	7
	2BG06820		COVER SWITCH	7
⊙	2BG06870		ACTUATOR FEED	6
	2BG06890		MOUNT PAPER SIZE	2
	2BG06900		RAIL CASSETTE R	3
	2BG06910		RAIL CASSETTE L	3
	2BG06920		LEVER FEED LOCK	6
⊙	2BG06930		PLATE EARTH REGIST	6
	2BG06950		SPRING FEED HOOK	6
	2BG06970		STOPPER FEED UNIT	3
	2BG06980		COVER DRIVE FEED	5
	2BG06990		SHAFT FEED LOW	5
⊙	2BG07410		GEAR Z20 EXIT B	12
⊙	2BG07420		PULLEY SEPARATOR 23 B	12
⊙	2BG07430		GEAR Z42 EXIT B	12
	2BG07500		COVER ACT FEED	6
	2BG07510		BUSH REGIST UP NB	6
	2BG07520		BUSH 6 NB	6
	2BG07530		PIN EARTH FEED	6
	2BG07540		HOLDER EARTH PIN	6
	2BG07550		SPRING HOLDER PIN	6
	2BG07560		HOLDER PULLEY	6
	2BG07570		SPRING FEED A	6
	2BG07580		BUSH EXIT ROLLER	11

SP	Part.No.	Alternative.	Description	Fig.No.
	2BG07600		SPRING REGIST B	6
⊙	2BG07610		SHEET EXIT COVER	12
	2BG08100		PLATE DRUM F	9
	2BG09010		PLATE HOLDER IMAGE	1
	2BG09030		HOLDER IMAGE F	1
	2BG09040		HOLDER IMAGE R	2
	2BG09050		PLATE RETAINER IMAGE	1
	2BG09060		PLATE HV DLP B	1
	2BG09090		PLATE EARTH DRUM	1
	2BG09120		PLATE PILOT PIN	3
	2BG09130		HOLDER HV DLP	3
	2BG09140		PLATE HV DLP A	3
	2BG09160		SPRING HV DLP	3
	2BG09170		COVER INNER LOW	1
	2BG09180		LEVER LOCK MCH	1
	2BG09190		SPRING LOCK MCH	1
	2BG09210		SPRING LOCK CONT	1
	2BG09220		STOPPER IMAGE	1
	2BG09250		LEVER LOCK IMAGE	1
	2BG09260		SCREW C	1
	2BG09270		SEAL COVER INNER LOW M	1
	2BG09280		SPONGE HOLDER IMAGE	2
	2BG09290		COVER CONTAINER M	1
	2BG09300		COVER CONTAINER C	1
	2BG09310		COVER CONTAINER Y	1
	2BG09320		COVER CONTAINER K	1
	2BG09330		SEAL COVER INNER LOW C	1
	2BG09340		SEAL COVER INNER LOW Y	1
	2BG09350		SEAL COVER INNER LOW K	1
	2BG09360		SPACER PILOT PIN	3
	2BG10140		BRACKET FAN	13
	2BG10150		DUCT MCH	13
⊙	2BG10170		SEAL DUCT MCH	13
⊙	2BG13010		LPH	15
	2BG13020		HOLDER LPH F	15
	2BG13030		HOLDER LPH R	15
	2BG13040		SPRING LPH	15
	2BG13060		STAY LPH	15
	2BG13070		PLATE EARTH LPH	15
⊙	2BG13100		SEAL STAY LPH	15

• Parts with "⊙"" indicates the spare parts.

SP	Part.No.	Alternative.	Description	Fig.No.
	2BG13110		SHEET LPH HARNESS	15
	2BG13120		SEAL DUCT UP	15
	2BG14160		JOINT DRIVE DLP	9
	2BG14410		SPRING DS F	9
	2BG14420		SPRING DS R	9
	2BG15180		SPRING CONTAINER EJECT	2
	2BG18320		TRAY WASTE	3
	2BG18470		JOINT WASTE	3
	2BG18480		BRACKET TB DRIVE	3
⊙	2BG18490		WORM WHEEL Z34S-Z15H	3
⊙	2BG18520		SENSOR WASTE	3
⊙	2BG20010		ROLLER HEAT UP	10
⊙	2BG20020		ROLLER HEAT LOW	10
	2BG20030		FRAME FUSER	10
	2BG20040		FRAME FUSER UP	10
	2BG20060		FRAME ROLLER LOW	10
	2BG20070		GUIDE ENTRANCE	10
⊙	2BG20080		GUIDE ENTRANCE UP	10
⊙	2BG20090		GUIDE ENTRANCE LOW	10
	2BG20120		PIN PRESSURE	10
	2BG20130		SPRING PRESS FUSER	10
⊙	2BG20140		GEAR FUSER Z38S	10
⊙	2BG20150		BEARING FUSER	10
	2BG20180		COVER FUSER EXIT	10
	2BG20190		STAY FUSER UP	10
⊙	2BG20210		GUIDE EXIT UP	10
⊙	2BG20220		GUIDE EXIT LOW	10
⊙	2BG20270		ROLLER FUSER EXIT	10
	2BG20290		SHAFT EXIT RELEASE	10
	2BG20310		SPRING EXIT RELEASE	10
⊙	2BG20320		PULLY EXIT	10
	2BG20330		SHAFT EXIT	10
⊙	2BG20340		PULLEY SLIDER	10
	2BG20350		PIN PULLEY	2,3,10
	2BG20360		HOLDER DRAWER	10
⊙	2BG20430		LAMP HEATER UP 120	10
⊙	2BG20440		LAMP HEATER LOW 120	10
⊙	2BG20450		LAMP HEATER UP 240	10
⊙	2BG20460		LAMP HEATER LOW 240	10
	2BG20470		HOLDER HEATER F	10
	2BG20480		HOLDER HEATER R	10
	2BG20510		GEAR Z17S EXIT	10
⊙	2BG20530		GEAR Z23S IDLE	10
	2BG20540		HANDLE FUSER	10
	2BG20550		COVER FUSER UP	10
	2BG20560		COVER FUSER F	10
	2BG20570		COVER FUSER R	10
⊙	2BG20580		THERMISTOR UP	10
	2BG20590		PLATE FUSER HEATER	10
	2BG20600		HOOK EXIT RELEASE	10
⊙	2BG20610		TERMINAL EXIT ROLLER	10
	2BG20750		HOOK FUSER LOCK	10
	2BG20790		SPRING HOOK FUSER	12
	2BG20800		SPRING HOOK	10
	2BG20840		SHEET HARNESS A	10
	2BG20860		SHEET HARNESS C	10
	2BG20870		MOUNT THERMISTOR LOW	10
	2BG20880		STOPPER FUSER	10
	2BG20890		SPRING FUSER EXIT	10
	2BG20900		STOPPER FUSER B	10
⊙	2BG20910		THERMOSTAT 150	10
⊙	2BG20920		THERMOSTAT 140	10
⊙	2BG21010		ROLLER EXIT A	11
⊙	2BG21020		ROLLER EXIT B	11
⊙	2BG21030		ROLLER EXIT C	12
⊙	2BG21050		ROLLER EXIT E	12
	2BG21060		DISCHARGER EXIT	12
⊙	2BG21070		PULLEY EXIT	12
	2BG21080		SHAFT PULLEY EXIT A	11
	2BG21090		SHAFT PULLEY EXIT B	12
⊙	2BG21160		GEAR Z21-Z20 EXIT	12
⊙	2BG21170		PULLEY EXIT FD	11
⊙	2BG21180		BELT,DRIVE EXIT	11
⊙	2BG21230		COVER EXIT	12
	2BG21240		PLATE EXIT A	11
	2BG21250		PLATE EXIT B	11
⊙	2BG21260		ACT FUSER DU	12
⊙	2BG21280		ACTUATOR EXIT A	11
	2BG21290		SPRING PULLEY FU	12
	2BG21300		PLATE EXIT COVER	12

• Parts with "⊙" indicates the spare parts.

SP	Part.No.	Alternative.	Description	Fig.No.
⊙	2BG21380		ACTUATOR EXIT B	12
	2BG21390		SPRING PULLEY EXIT B	11
⊙	2BG21420		GEAR Z29 EXIT	13
⊙	2BG21430		SOLENOID FEED	12
⊙	2BG21460		GUIDE EXIT(1/4)	12
	2BG21470		SPRING EXIT F	12
	2BG21480		SPRING EXIT R	12
	2BG21490		SPRING FUSER ACT DU	12
	2BG21540		PULLEY EXIT FU	12
	2BG21550		SPRING HOOK EXIT	12
	2BG21580		DISCHARGER EXIT FD	11
	2BG21590		DISCHARGER EXIT MID	11
	2BG21610		TAPE DIS JOINT	12
	2BG21620		TAPE DIS JOINT CE	12
	2BG21630		SPONGE EXIT FRAME	12
	2BG21650		SEAL EXIT B	12
	2BG21660		SHEET EXIT GUIDE	12
⊙	2BG21670		SEAL EXIT A	12
	2BG21700		SPRING EARTH JOINT	12
	2BG21710		PLATE GUIDE R	12
⊙	2BG21740		ROLLER EXIT SPG	12
	2BG21770		HOLDER PULLEY EXIT	11
	2BG21790		PLATE SOLENOID	12
	2BG21860		SPRING JOINT EXIT	12
⊙	2BG21960		HANDLE EXIT	12
	2BG21970		SPRING PULLEY FD	11
	2BG21980		SPRING ACT FU	12
⊙	2BG21990		SEAL EXIT C	12
⊙	2BG22010		JOINT DRUM	15
	2BG22020		SPRING JOINT D	15
	2BG22030		PLATE MAIN DRIVE F	14
	2BG22040		PLATE MAIN DRIVE R	14
	2BG22050		SHAFT DLP DRIVE	14
⊙	2BG22060		GEAR Z70H-Z23H	14
⊙	2BG22070		GEAR Z60H	13,14
⊙	2BG22080		GEAR Z20H	14
	2BG22090		HOLDER GEAR	13
	2BG22100		PLATE DRIVE FUSER	13
⊙	2BG22110		GEAR Z56H-Z50S	13
⊙	2BG22120		GEAR Z34S-Z33H	13

SP	Part.No.	Alternative.	Description	Fig.No.
⊙	2BG22130		GEAR Z35S EJ	13
⊙	2BG22140		GEAR Z26S	13
⊙	2BG22150		GEAR Z46H	13
⊙	2BG22160		GEAR Z28S-Z20H	13
⊙	2BG22180		GEAR Z97H-Z35S	13
	2BG22190		SPRING JOINT F	13,14
	2BG22250		PLATE FEED UPPER F	14
	2BG22260		PLATE FEED DRIVE R	14
	2BG22270		PLATE FEED LOW F	14
	2BG22280		HOLDER CLUTCH	14
⊙	2BG22290		GEAR Z111H-Z36S	14
⊙	2BG22300		GEAR Z99H-Z43S	14
⊙	2BG22310		GEAR Z18S	14
⊙	2BG22320		GEAR Z34S-Z31S	14
⊙	2BG22330		GEAR Z35S	14
⊙	2BG22340		GEAR Z43S	14
⊙	2BG22350		GEAR Z54S	14
	2BG22360		SHAFT REGIST CLUTCH	14
	2BG22370		SHAFT FEED CLUTCH H	14
	2BG22380		SHAFT FEED CLUTCH L	14
	2BG22390		SHAFT PICK-UP CL H	14
	2BG22400		SHAFT PICK-UP CL L	14
	2BG22410		SHAFT FEED CLUTCH B	14
⊙	2BG22420		CLUTCH REGIST 32	14
⊙	2BG22430		CLUTCH FEED 34	14
	2BG22440		PLATE DRIVE DU	13
	2BG22450		SHAFT DU	13
⊙	2BG22460		GEAR Z37H	13
⊙	2BG22470		GEAR Z38S DU	13
⊙	2BG22480		BELT DU	13
⊙	2BG22490		GEAR Z120H-Z34P	13
⊙	2BG22500		GEAR Z36P-Z34S	13
⊙	2BG22510		GEAR Z45S-Z28S	13
	2BG22520		COUPLING DLP DRIVE	14
	2BG22530		SPRING COUPLING DLP	14
⊙	2BG22540		GEAR Z38H	14
⊙	2BG22550		GEAR Z34S-Z31S8	14
	2BG22560		SHAFT FUSER CLUTCH	13
⊙	2BG22590		GEAR Z46H-Z20P	14
⊙	2BG22600		GEAR Z16S-Z40P	14

• Parts with "⊙"" indicates the spare parts.

SP	Part.No.	Alternative.	Description	Fig.No.
⊙	2BG22610		GEAR Z32S CONT	14
⊙	2BG22630		BELT CONT DRIVE	14
⊙	2BG22650		CLUTCH FUSER	13
⊙	2BG22660		CLUTCH FEED L	14
⊙	2BG22670		CLUTCH 1 FEED H	14
⊙	2BG22680		CLUTCH 1 FEED L	14
⊙	2BG22690		CLUTCH DESK FEED L	14
⊙	2BG22700		GEAR Z22S EJ	13
⊙	2BG22710		GEAR Z33S DU	13
	2BG22800		JOINT CONT DRIVE	14
⊙	2BG22810		GEAR Z28S-Z20S CONT	14
	2BG22820		WORM WHEEL 32-Z20S	14
	2BG22830		HOLDER CONT DRIVE	14
⊙	2BG22840		GEAR Z28S CONT	14
	2BG22850		HOLDER DU DRIVE	2
	2BG22860		COLLAR DLP COUPLING	14
	2BG22910		PLATE CLUTCH FUSER	13
	2BG22930		CUT WASHER 6	14
	2BG22940		BEARING MF128ZZ	14
	2BG22950		BUSH 8 EW	6
	2BG22960		BUSH 6	10,11,12, 13
	2BG22970		BUSH 6 EW	10,11,12
	2BG22980		BUSH 8	14
	2BG22990		CUT WASHER 4	14
	2BG23010		DUCT COOLING	13
	2BG23020		DUCT COOLING FAN	13
⊙	2BG23030		OZON FILTER	1,17
	2BG23050		DUCT FAN 40	15
⊙	2BG23060		FAN 40	15
	2BG26010		BOX CONTROLLER	16
	2BG26020		SHIELD BOX	16
	2BG26050		COVER LPH PCB	1
	2BG26300		STAY DUCT	13
	2BG26310		PLATE SHIELD	16
⊙	2BG27020		SENSOR,TONER EMPTY B	2
⊙	2BG27060		SWITCH,MAIN	15
⊙	2BG27120		MOTOR,DRUM	15
⊙	2BG27130		MOTOR,COLOR DEVELOPING	14
⊙	2BG27140		MOTOR,FIXING	13

SP	Part.No.	Alternative.	Description	Fig.No.
⊙	2BG27160		MOTOR,PAPER FEED	14
	2BG27170		WIRE,DB PCB	16
	2BG27180		WIRE,MAIN SWITCH	15
	2BG27200		WIRE,WASTE SENSOR	3
	2BG27210		WIRE,PAPER FEED MOTOR	14
	2BG27220		WIRE,DESK	15
	2BG27230		WIRE,CASSETTE LENGTH SW	2
	2BG27240		WIRE,CASSETTE SIZE	2
	2BG27250		WIRE,COLOR DEVE MOTOR	15
	2BG27270		WIRE,PAPER FEED UNIT	5
	2BG27290		WIRE,FUSER MOTOR	13
	2BG27310		WIRE,MC PCB	13
	2BG27320		WIRE,PAPER FEED JUNCTION	6
	2BG27330		WIRE,LIFT MOTOR	15
	2BG27340		WIRE,DU SWITCH JUNCTION	16
	2BG27360		WIRE,POWER SOURCE A	15
	2BG27370		WIRE,POWER SOURCE SIGNAL	15
	2BG27420		WIRE,PRINTER SIGNAL	15
	2BG27430		WIRE,CLUTCH PCB	15
⊙	2BG27490		FAN,COOLING50	19,20
	2BG27500		WIRE,REG SWITCH JUNCTION	7
	2BG27540		WIRE,FUSER JUNCTION	3
⊙	2BG27550		FAN 92X25-300	13
	2BG27620		WIRE,FEED UNIT	7
	2BG27680		WIRE,DUPLEX JUNCTION	2
	2BG27710		WIRE,DRUM MOTOR	15
	2BG27780		WIRE,HERTER	3
⊙	2BG27790		FAN 80X25-100	13
	2BG27800		WIRE,OPTION JUNCTION	15
	2BG27830		WIRE,TONER EMPTY SWITCH	2
	2BG27840		WIRE,HUMIDITY SENSOR	15
	2BG27850		WIRE,DB HIGH VOLTAGE	3
⊙	2BG27890		FAN 80X25-120	16
	2BG27920		WIRE,MC HIGH VOLTAGE M	13
	2BG27940		WIRE,TONER BOTTLE CHECK	3
	2BG27970		WIRE,EJECT UNIT	12
	2BG27980		WIRE,FRONT COVER SWITCH	15
⊙	2BG28060		MCH HV PWB	13
	2BG28250		HUM SENSOR F	3
	2BG28500		WIRE,T UNIT JUNCTION A	3

• Parts with "⊙'" indicates the spare parts.

SP	Part.No.	Alternative.	Description	Fig.No.
	2BG28560		WIRE,POWER SOURCE B	15
	2BG28600		WIRE,T EMP SW JUNCTION (M)(C)(Y)	15
	2BG28650		WIRE,MOTOR BOTTLE	3
	2BG28660		WIRE,MC HIGH VOLTAGE C	13
	2BG28670		WIRE,MC HIGH VOLTAGE Y	13
	2BG28680		WIRE,MC HIGH VOLTAGE K	13
	2BG28690		WIRE,MOTOR TONER	14
	2BG28700		WIRE,T UNIT JUNCTION B	3
	2BG28740		HEATER,DEHUMIDIFIER(120)	18
	2BG28750		HEATER,DEHUMIDIFIER(230)	18
	2BG28800		WIRE,F HUM SENSOR	3
⊙	2BG60010		TRAY OP	18
	2BG60020		BKT OP TRAY F	18
⊙	2BG60031		OPTION POWER SUPPLY ASS'Y(100)	19,20
⊙	2BG60041		OPTION POWER SUPPLY ASS'Y(200)	19,20
	2BG60050		WIRE,OPTION POWER SUPPLY	19,20
	2BG60060		MOUNT OPTION POWER SOURCE	19,20
⊙	2BG60080		OPTION BOX ASS'Y(120)	19,20
⊙	2BG60090		OPTION BOX ASS'Y(200)	19,20
	2BG60100		BKT OP TRAY R	18
	2BG60200		INLET ASS'Y	19,20
	2BG60240		WIRE,FINISHER JUNCTION	20
	2BG60250		SHIELD GASKET F	19
	2BG60260		SHIELD GASKET G	19
⊙	2BG68120		WASTE SHUTTER UNIT	1
	2BG68160		LABEL RED(M)	15
	2BG68170		LABEL BLUE(C)	15
	2BG68180		LABEL YELLOW(Y)	15
	2BG68190		LABEL BLACK(K)	15
⊙	2BG93011		PARTS,CASSETTE ASS'Y,SP	4
⊙	2BG93020		PARTS,CASSETTE COVER,SP	4
⊙	2BG93170		PARTS,DV-810K(J/E)	9,17
⊙	2BG93180		PARTS,DV-810K(U)	9,17
⊙	2BL05250		LABEL LEFT COVER A	1
	2BL06910		PLATE SIZE IN	4
⊙	2BL27450		SWITCH PI	5
⊙	2BM07270	5AAROLL+053	ROLL FEED MPF ASSY	7
	2BM07280		HOLDER RETARD MPF	7
	2BM07290	5MMW266LD009	SPRING RETARD MPF	7
⊙	2BM07340		RETARD ROLL ASSY	7
⊙	2BM07400		RETARD ROLL MPF ASSY	7
⊙	2BM27100		SOLENOID MPF	7
⊙	2BM27120	5AAVCLTCH020	CLUTCH MPF ASSY	7
⊙	2BM27170	5SP24BW52E++040	PT.SENSOR GP2S30	7
⊙	2BM27780	5EYYAFAAD01++02	CLUTCH 26-B	7
	2C927230		CORE SFT-72SNB-026K	19
⊙	2CK20040		BUSH HEAT ROLLER	10
⊙	302BF00092	2BF00092	FEED UNIT ASS'Y	6,7
⊙	302BF00102	2BF00102	EXIT F ASS'Y	11
	302BF06011	2BF06011	TRAY MPF B	7
⊙	302BF68020	2BF68020	ENGINE MAIN PCB ASS'Y,SP	15
⊙	302BF68040	2BF68040	CONTROLLER ASS'Y SP	16
⊙	302BF68070	2BF68070	CONTROLLER ASS'Y US SP	16
⊙	302BF93066	2BF93066	PARTS,TR-810	8,17
⊙	302BG00091	2BG00091	FILTER ASS'Y	1
⊙	302BG00231	2BG00231	LPH ASS'Y (M)(C)(Y)	15
⊙	302BG00241	2BG00241	LPH BK ASS'Y (K)	15
⊙	302BG00342	2BG00342	WASTE TONER BOX ASS'Y	3
⊙	302BG00432	2BG00432	EXIT ASS'Y	12
⊙	302BG01151	2BG01151	BYPASS PCB ASS'Y	7
	302BG02860	2BG02860	M4 12 CRFREE ST	15
	302BG02870	2BG02870	WASHER M4 10 CRFREE	15
	302BG04560	2BG04560	COVER SCREW	2
⊙	302BG06161	2BG06161	PULLEY FEED	1,6,11
	302BG06301	2BG06301	RAIL FEED F	6
⊙	302BG06511	2BG06511	COVER MPF TRAY	7
	302BG06581	2BG06581	TRAY MPF A	7
	302BG07591	2BG07591	SHEET FD	11
	302BG09201	2BG09201	LEVER LOCK CONTAINER	1
	302BG10111	2BG10111	PLATE CONTACT WIRE	2
	302BG10121	2BG10121	PLATE SPRING GRID	2
	302BG13051	2BG13051	DUCT MCH GUIDE	15
	302BG13081	2BG13081	COVER DUCT MCH F	15
	302BG13091	2BG13091	COVER DUCT MCH R	15
⊙	302BG21761	2BG21761	ACTUATOR FUSER EXIT	12
⊙	302BG21821	2BG21821	GUIDE CHANGE FD	12
⊙	302BG21831	2BG21831	GUIDE CHANGE DU	12
	302BG26031	2BG26031	PLATE MAIN	16
	302BG27531	2BG27531	WIRE,BYPASS UPPER LOWER	7
	302BG27571	2BG27571	WIRE,REGISTRATION SWITCH	6

• Parts with "⊙"" indicates the spare parts.

SP	Part.No.	Alternative.	Description	Fig.No.
	302BG27611	2BG27611	WIRE,BYPASS JUNCTION	2
	302BG27752	2BG27752	WIRE,LPH(M)	15
⊙	302BG28261	2BG28261	DB HV PWB	16
	302BG28512	2BG28512	WIRE,LPH(K)	15
	302BG28772	2BG28772	WIRE,LPH(C)	15
	302BG28782	2BG28782	WIRE,LPH(Y)	15
	302BG28821	2BG28821	WIRE,LPH(M) R	15
	302BG28831	2BG28831	WIRE,LPH(K) R	15
	302BG28841	2BG28841	WIRE,LPH(C) R	15
	302BG28851	2BG28851	WIRE,LPH(Y) R	15
⊙	302BG93111	2BG93111	PARTS,DV-810Y(J/E)	9,17
⊙	302BG93121	2BG93121	PARTS,DV-810Y(U)	9,17
⊙	302BG93131	2BG93131	PARTS,DV-810M(J/E)	9,17
⊙	302BG93141	2BG93141	PARTS,DV-810M(U)	9,17
⊙	302BG93151	2BG93151	PARTS,DV-810C(J/E)	9,17
⊙	302BG93161	2BG93161	PARTS,DV-810C(U)	9,17
⊙	302BG93210	2BG93210	PARTS,MCH UNIT,SP	9
	303B882100	3B882100	SET AK-640A(240)(OPTION)	19
	303B882110	3B882110	SET AK-640B(240)(OPTION)	20
⊙	3A722040		PULLEY 24,CONVEYING	11
⊙	3A821110		GEAR 21	6,14
	3AK02080		PULLEY,FINISHER	20
	3B803500		FRONT RETAINER,SLIDER	19,20
	3B803510		REAR RETAINER,SLIDER	19,20
	3B803520		MOUNT,SLIDER	19,20
	3B803530		JUNCTION PLATE,SLIDER	19,20
	3B803540		JUNCTION PLATE,MACHINE	19,20
	3B803550		MOUNT,MACHINE	19,20
	3B803560		STOPPER,JUNCTION PLATE	19,20
	3B803570		RAIL,RELEASE	19,20
	3B803600		SLIDER,FINISHER	19,20
	3B803610		HANDLE,RELEASE	19,20
⊙	3B827040		SENSOR 12,SEPARATION	2,15
	3B860510		RETAINER M,RELEASE	19,20
	3B860520		HOOK M,RELEASE	19,20
	3B860530		ACTUATOR PLATE M,SAFETY SWITCH	19,20
	3B860540		RAIL M,RELEASE	19,20
	3B860550		JUNCTION PLATE M,RAIL	19,20
	3B860560		FILM,CONVEYING	19,20
	3B860610		MOUNT BASE M,BASE	20

SP	Part.No.	Alternative.	Description	Fig.No.
	3B860620		FRAME M,BASE	20
	3B860630		LEFT STAY M,BASE	20
	3B860640		RIGHT STAY M,BASE	20
	3B860650		FRONT GUIDE M,BASE	20
	3B860660		REAR GUIDE M,BASE	20
	3B860670		SHAFT M,BASE	20
	3B860680		LEFT COVER M,BASE	20
	3B860690		RIGHT COVER M,BASE	20
	3B882050		SET AK-640A(120)(OPTION)	19
	3B882060		SET AK-640A(230)(OPTION)	19
	3B882080		SET AK-640B(120)(OPTION)	20
	3B882090		SET AK-640B(230)(OPTION)	20
	3BH26030		PIN,OPTION	16
	3CY04100		PLATE NUMBER	4
	3CY05080		LABEL,CASSETTE	4
	3CY06020		LOWER SPRING B,PAPER FEED	5
	3CY06030		RETAINER M4	4
	3CY06041		CURSOR A,CASSETTE	4
	3CY06050		CURSOR B,CASSETTE	4
	3CY06060		LID A,CURSOR	4
	3CY06071		CURSOR C,CASSETTE	4
	3CY06080		LID C,CURSOR	4
	3CY06090		RACK CURSOR	4
⊙	3CY06100		GEAR 20,CURSOR	4
⊙	3CY06110		SHEET,LIFT PLATE	4
	3CY07080		BUSHING 6	12
	3H027010		GASKET SHIELD PRN	16
	3HK27050		CORE 8-16X10	15
	5AAVCLIP+002	2BM02460	LUTCH	1
⊙	5AAXAP068GEA	2BF60040	168PIN DIMM 64M	18
⊙	5AAXAP069GEA	2BF27050	IC DIMM-128M	16,18
⊙	5EZND2402601+01	2BM27340	DC MOTOR	3,14
⊙	5MMM176CJ007	2BM07330	BUSH METAL	7
⊙	5MMS626SD003	2BM04100	PLATE MAGCHATCH	1
	5MMS636SD009	3BH26020	PLATE,OPTION	16
	5MMT143SZ014	2BR20470	STUD SCREW M3	12
	5MMW261SD004	3B706550	SPRING COVER R	2,3
	5MMW261SD004	3B706550	SPRING COVER R	2,3
	5MMW261SD009	2BM17220	SPRING SOLENOID	12
⊙	5MMW361LD018	2BM14190	SP JOINT T SW D1234	14

• Parts with "⊙'" indicates the spare parts.

SP	Part.No.	Alternative.	Description	Fig.No.
	5MMW676LD002	2BM07080	SPRING BOTTOM MPF	7
	5MVB743SL004	2BL26210	RAIL OPTION A	16
	5MVB743SL005	2BL26220	RAIL OPTION B	16
⊙	5MVG115DB002	2BM14540	GEAR WORM	3,14
⊙	5MVG127DH001	2B700380	GEAR MANUAL 40301X1013	7
⊙	5MVM176DB012	2BM07320	BUSH POM B	7
	5MVS217DB003	2BM17180	PLATE LEVER SOL	12
	5MVS446VE001	2BL06470	PLATE SIZE C	4
⊙	5MVS531XN001	2BM07170	PAD FRICTION	7
	5MVS665KB001	2BM40060	CUT WASHER	13,14
⊙	5MVX111DN003	2A806250	RING STOPPER	5,6,7,11, 12,13,14
	5MVX421DN003	2BL06490	LOCK COVER RIGHT	2,3
	5MVX621SH003	2BM26020	GUIDE CF CARD	16
⊙	5MVX652DN001	2BM07050	ACTUATOR CAM MPF	7
⊙	5MVX653DB001	2BM07060	ACTUATOR PAPER MPF	7
	B1003050		BINDING SCREW CVM3X5	19,20
	B1004100		BINDING SCREW CVM4X10	20
	B1303050		BINDING SCREW BVM3X5 (BLACK)	19,20
	B1304060		BINDING SCREW BVM4X6 (BLACK)	19,20
	B1304100		BINDING SCREW BVM4X10 (BLACK)	19
	B1A54080		+BIND TAP-TITE S SCREW M4X08	19,20
	B1B04060		+BIND SCREW M4X06(TRIVALENT CHROMATING)	20
	B3024140		BINDING TAP-TIGHT S SCREW M4X14	19,20
	B4104060		TRIPLE SCREW M4X6(CHROMIUM)	20
	B4144080		+TP TAP-TITE P SCREW(CHROMIUM)	19,20
	B4303050		TRIPLE SCREW M3X5 (BLACK)	19,20
	BAA63080		+TP TAP-TITE P SCREW M3X08	9
	BAB54200		+TP TAP-TITE S SCREW M4X20(TRIVALENT CHROMATING)	19,20
	D1000900		STOP RING (E-9)	20
⊙	G3006080	45506083	BEARING,#608ZZ	15
	J0220020	41529101	PLUG EL 2P,ELP-02V	16
	J0223020	41529100	RECEPTACLE EL 2P,ELR-02V	16
	J0463080		PLUG,QR/P15-8S-C(HIROSE)	4
	J0464080		RECEPTACLE,QR/P15-8S-C(02)(HIROSE)	2
	M0207000	49826601	BINDING BAND,KB-100-1	16
	M2104210		EDGING,EDS-2	6
	M2104220		EDGING,EDS-1717U	16
	M2104270		EDGING,EDS-2323U(KITAGAWA)	13,16
	M2104350		EDGING,EDS-0607M(KITAGAWA)	14

SP	Part.No.	Alternative.	Description	Fig.No.
	M2105720		MINIATURE CLAMP,UAMS-05-2	6
	M2105730		MINIATURE CLAMP,UAMS-07-0	3,13
	M2105740		MINIATURE CLAMP,UAMS-05S-2	2,6,13,14, 15,16
	M2108290		SPACER,KGPS-10S	16
	M2109010	49513902	WIRE SADDLE,WS-2NS	2,19,20
	M2109020	49829401	WIRE SADDLE,WS-2WS	14,16
	M2109060	49427223	LOCKING WIRE SADDLE,LWS-2NS	15,16
	M2109070	49427224	LOCKING WIRE SADDLE,LWS-3NS	14
	M2109080	49828500	LOCKING WIRE SADDLE,LWS-4NS	13
	M2109310		WIRE SADDLE,HL-28-0(KITAGAWA)	14
	M70A5010		CLAMP,EMT-4N(TAKEUCHI)	15
	M70C0010		FERRITE CORE,SFT-59SN(TAKEUCHI)	15,16
	M70CA010		FERRITE CORE,SFT-72SN(TAKEUCHI)	15
⊙	NCQ05070		EEPROM,24LC256-I/P	15

• Parts with "⊙"" indicates the spare parts.

CLASSIFICATION OF THE SCREWS IN ILLUSTRATION

REF.	ITEM#	DESCRIPTION
ANE	B3023120	BINDING TAP TIGHT SCREW M3X12
AZD	B1B04060	+BIND SCREW M4X06(TRIVALENT CHROMATING)
AZE	BAA64100	+TP TAP-TITE P SCREW M4X10
AZF	B4A04100	+TP-A SCREW M4X10(TRIVALENT CHROMATING)
BAB	B1003060	BINDING SCREW CVM3X6
BAL	B1003050	BINDING SCREW CVM3X5
BAY	B1004200	BINDING SCREW CVM4X20
BHA	B3023060	BINDING TAP TITE S SCREW M3X6
BHB	B3023080	BINDING TAP TIGHT SCREW M3X8
BHD	B3024080	BINDING TAP-TIGHT SCREW M4X8
BHF	B3314080	BINDING TAP-TITE P SCREW M4X08
BHG	B3023100	BINDING TAP TIGHT SCREW M3X10
BHK	B3023140	BINDING TAP TIGHT SCREW M3X14
BHN	B8013080	BINDING TAP-TIGHT SCREW M3X08
BHU	B8013120	BINDING TAP-TITE P SCREW M3X12
CBM	B4B04080	+TP-A SCREW M4X08(TRIVALENT CHROMATING)
CBN	B1B03200	+BIND SCREW M3X20(TRIVALENT CHROMATING)
CBP	B1B14080	+BINDING SCREW WITH SW M4X08
CBQ	B1B73100	+BIND TAP-TITE B SCREW M3X10
CBR	B4043080	TRIPLE TAP-TITE P SCREW M3X08
CBS	B0B63060	+PAN TAP-TITE P SCREW M3X06
E04	D1000400	STOP RING (E-4)
E06	D1000600	STOP RING (E-6)
E07	D1000700	STOP RING (E-7)
HAO	B4043080	TRIPLE TAP-TITE P SCREW M3X08
HCP	B4003060	TRIPLE SEREW M3X6
KAL	E0020100	SPRING PIN 2X10
KAM	E0020120	SPRING PIN 2X12
KFA	E5120080	SPRING PIN H7A 2X8 SUS
KFL	E6125180	PARALLEL PIN TYPE B 2.5X18 SUS
KFO	E5120100	SPRING PIN H7A 2X10 SUS
KKJ	E0025250	SPRING PIN 2.5X25
RAH	D2000800	STOP RING S8

REF.	ITEM#	DESCRIPTION
RBS	E0025100	SPRING PIN 2.5X10
RDD	D4000400	STOP RING CSTW-4
RDE	D4000500	STOP RING CSTW-5
ZAF	B1A54060	+BIND TAP-TITE S SCREW M4X06
ZAG	B1A54080	+BIND TAP-TITE S SCREW M4X08
ZAH	B1A63080	+BIND TAP-TITE P SCREW M3X08
ZAI	B1A53060	+BIND TAP-TITE S SCREW M3X06
ZAJ	B1A53100	+BIND TAP-TITE S SCREW M3X10
ZAK	B1A53140	+BIND TAP-TITE S SCREW M3X14
ZAL	B1A54100	+BIND TAP-TITE S SCREW M4X10
ZAM	B1A63120	+BIND TAP-TITE P SCREW M3X12
ZAN	B1A64100	+BIND TAP-TITE P SCREW M4X10
ZAP	B1B04200	+BIND SCREW M4X20(TRIVALENT CHROMATING)
ZAQ	B1B53300	+BIND TAP-TITE S SCREW M3X30
ZAR	B1B64250	+BIND TAP-TITE P SCREW M4X25
ZAS	B1B64350	+BIND TAP-TITE P SCREW M4X35
ZAT	B4A03060	+TP-A SCREW M3X06(TRIVALENT CHROMATING)
ZAU	BAA63080	+TP TAP-TITE P SCREW M3X08
ZAX	E5125100	PARALLEL PIN H7A 2.5X10 SUS
ZAY	E5130120	PARALLEL PIN H7A 3X12 SUS
ZAZ	B1A53080	+BIND TAP-TITE S SCREW M3X08
ZBE	B4B03050	+TP-A SCREW M3X05(TRIVALENT CHROMATING)
ZBF	E0020140	SPRING PIN 2X14
ZBG	B1B03050	+BIND SCREW M3X05(TRIVALENT CHROMATING)
ZBH	B1B04080	+BIND SCREW M4X08(TRIVALENT CHROMATING)
ZBJ	B4A04060	+TP-A SCREW M4X06(TRIVALENT CHROMATING)
ZBK	B1B03120	+BIND SCREW M3X12(TRIVALENT CHROMATING)
ZBL	B1B64080	+BIND TAP-TITE P SCREW M4X08
ZBM	B2B04060	+COUNTER-SUNK HEAD SCREW BFHM4X06
ZBN	B2B63100	+CONTER-SUNK HEAD TAP-TITE P M3X10
ZBP	E0030160	SPRING PIN 3X16
ZBU	B9A90010	+PAN SCREW 6-32X0.25

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