



OKIDATA

Service Guide

OKIPAGE 10i / OKIPAGE 10i/n
LED PAGE PRINTER PRODUCTS

Adobe Acrobat printable reference copy
of the OKIDATA Service Training Manual.
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Chapter 0 Introduction

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OkiLink (BBS) Technical Training

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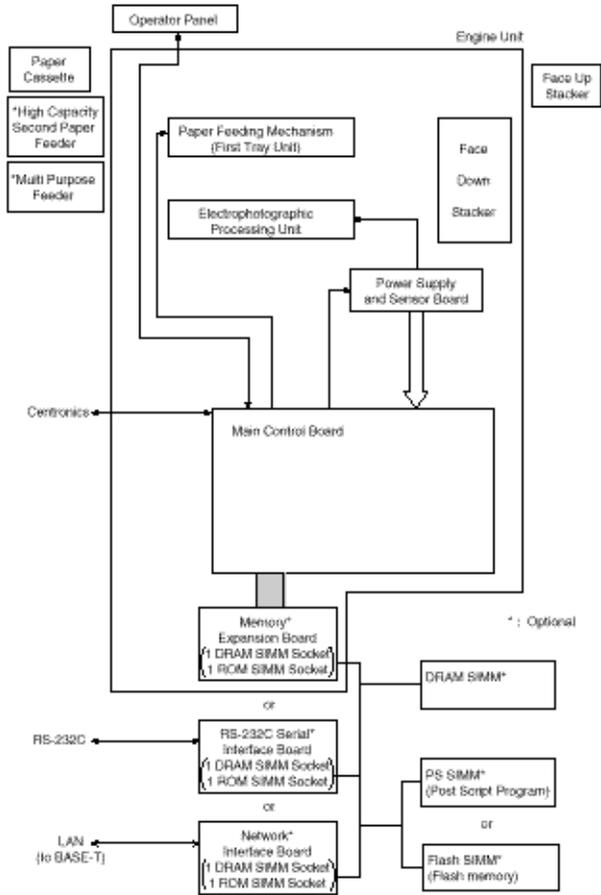


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Chapter 1 Configuration

OKIPAGE 10i consists of control and engine blocks in the standard configuration, as shown in Figure 1-1.

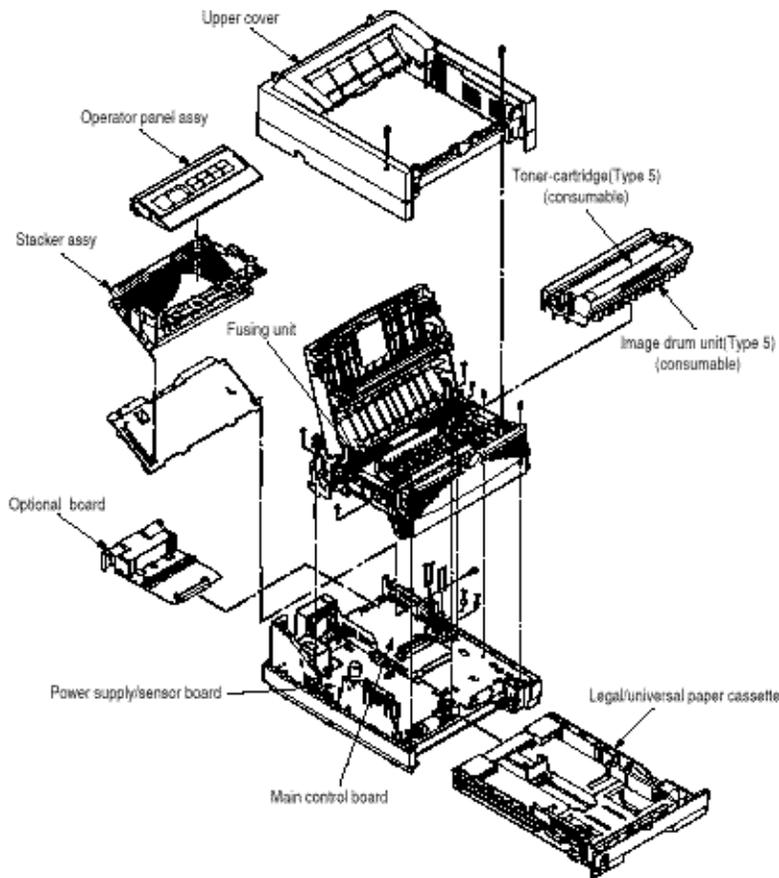
In addition, the options marked with asterisk (*) are available.



The printer unit consists of the following hardware components:

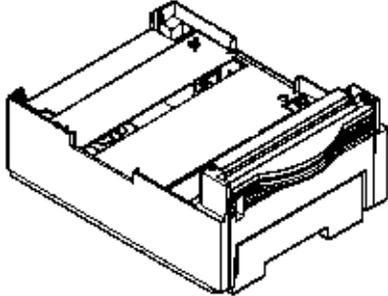
- Electrophotographic Processor
- Paper Feeder
- Controller
- Operator Panel
- Power Supply Unit

The printer unit configuration is shown in Figure 1-2.

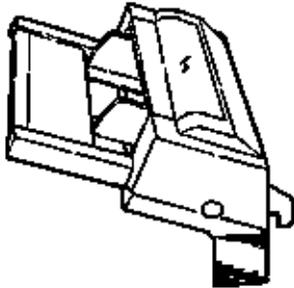


The options shown below are available for use with OKIPAGE 10i. These are available separately from the printer unit.

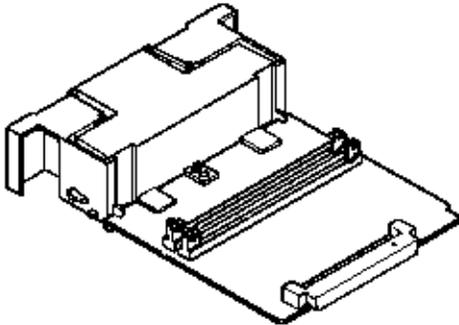
- (1) High Capacity Second Paper Feeder



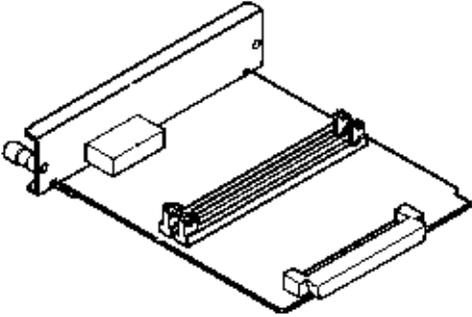
- (2) Power Envelope Feeder



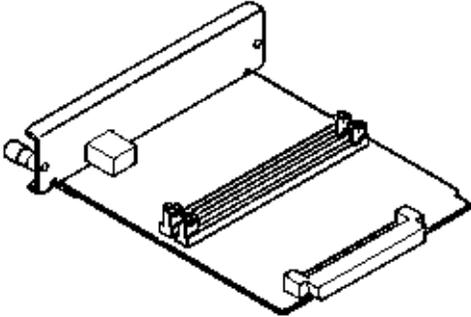
- (3) 1MB Memory Expansion Board



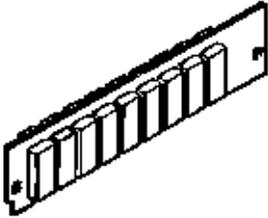
- (4) RS-232C Serial Interface Board



(5) Network Interface Board

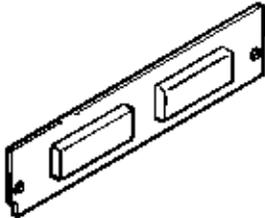


(6) DRAM SIMM Memory



Drum SIMM is available in increments of 1MB (min.) to 16MB (max.) on each SIMM. The access time of SIMM memories are 60ns, 70ns, 80ns, and 100ns.

(7) PostScript program SIMM



(1)	Type	Desktop
(2)	External dimensions (excludes protruding portion)	Height 7.9" (200 mm) Width 13.0" (330 mm) Depth 14.9" (378 mm)
(3)	Weight	26 lbs. (10 kg)
(4)	Developing method Exposing method	Dry electrophotography LED stationary head
(5)	Paper used	<Type> <ul style="list-style-type: none">● Standard paper- Xerox 4200 (20 lbs.)● Application paper (manual face-up feed)- Label- Envelope- OHP paper (transparency) <Size> <ul style="list-style-type: none">● Standard sizes- Letter- Legal- Legal-13- Executive- COM-10- Monarch- DL- C5- COM-9- A4- A5- B5 (JIS)- A6● Applicable sizes- Width: 3.87" to 8.5" (116 to 216 mm)- Length: 5.83" to 14" (148 to 355.6 mm) <Thickness> <ul style="list-style-type: none">- Automatic feed: 16 to 28 lbs. (60 to 135 g/m²)- Manual feed: 5.83" to 14" (148 to 355.6 mm)

- (6) Printing speed Continuous printing: 10 pages per minute with Letter size paper. [Except Second Paper Feeder 8.8PPM), Multi-Purpose Feeder (8.3PPM)].
- Warm-up time: 80 seconds, typical at room temperature [77° F (25° C), AC120/230 V].
- First page print time: 14 seconds typical for the Letter size paper after warm-up.
- (7) Paper feeding method Automatic feed or manual feed
- (8) Paper delivery method Face down/face up
- (9) Resolution 600 x 600 dots/inch
600 x 1200 dots/inch
- (10) Power input 120 VAC + 5.5%, -15%
230V + 10%
- (11) Power consumption Peak: Approx. 460W
Typical: Approx. 215W
Idle: Approx. 61W
Power save mode: Approx. 18W
- (12) Temperature and humidity

	In operation	Power off mode	During Storage	Unit
Temperature	50-90 (10-320)	32-110 (0-43)	14-110 (-10-43)	°F (°C)
Humidity	2-80	10-90	10-90	%RH
Maximum wet bulb temperature	77 (25)	80.4 (26.8)	-----	°F (°C)
Minimum difference between wet and dry bulb temperature	35.6 920	35.6 (2)	-----	°F (°C)

- Storage conditions specified above apply to printers in packed condition.
- Temperature and humidity must be in the range where no condensation occurs.

- (13) Noise During operation: 50 dB (A) or less
Standby: 38 dB (A) or less
Quiet mode: Background level
- (14) Consumables Toner cartridge 2,000 (5% duty)
Image drum cartridge 20,000 at continuous printing
16,000 (3 page/job)
10,000 (1 page/job)
-

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1.5.1 Certification Label

1.5.2 Warning Label

1.5.3 Warning/Caution Marking

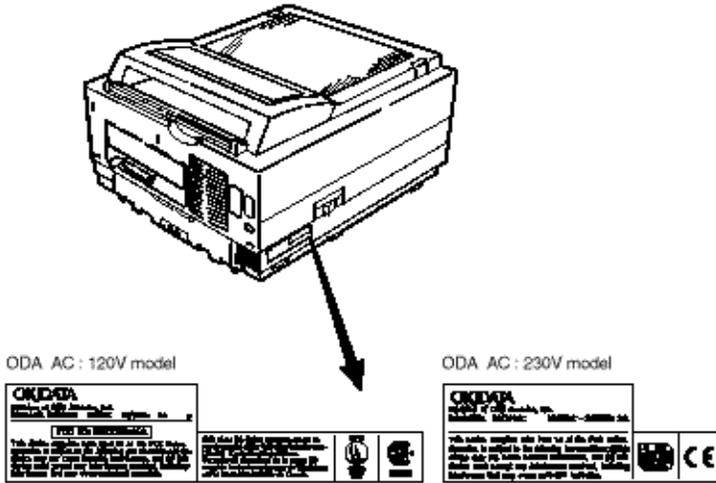
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Chapter 1 Configuration

The safety certification label is affixed to the printer in the position described below.



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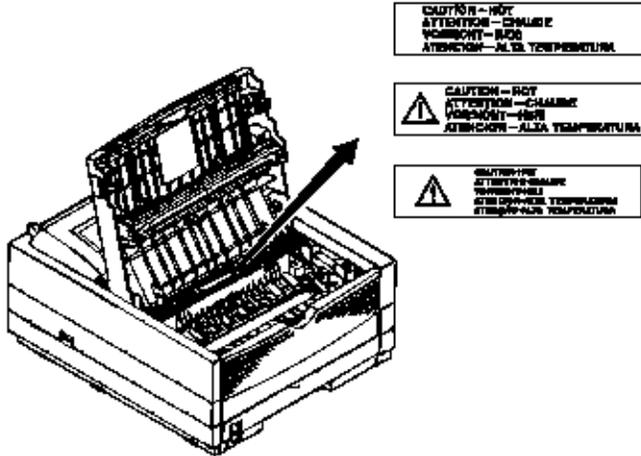


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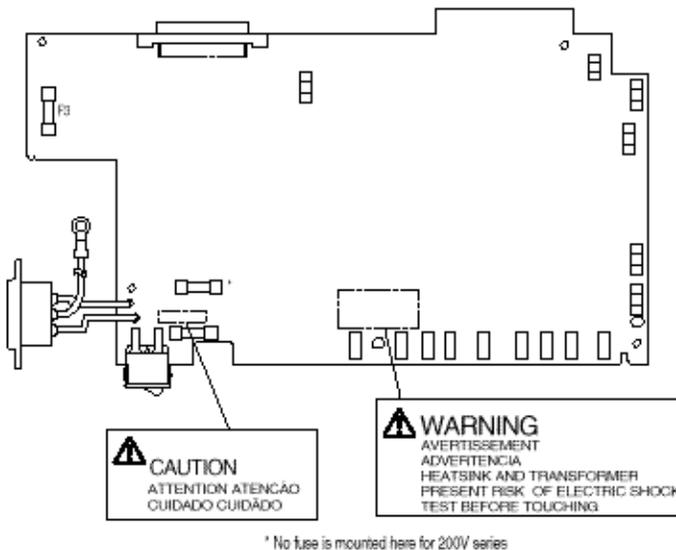
Chapter 1 Configuration

The warning labels are affixed to the sections which may cause bodily injury.

Follow the instructions on warning labels during maintenance.



The following warning and caution markings are made on the power supply/sensor board.



ENGLISH

Heatsink and transformer core present risk of electric shock. Test before touching.

FRENCH

Le dissipateur thermique et le noyau du transformateur présentent des risques de choc électrique. Testez avant de manipuler.

SPANISH

Las disipadores de color el núcleo del transformador pueden producir un choque eléctrico. Compruebe antes de tocar.

PORTUGUESE

O dissipador de calor e o núcleo do transformador apresentam risco de choque elétrico. Teste antes de tocar.

ENGLISH

Circuits maybe live after fuses open.

FRENCH

Il se peut que les circuits soient sous tension une fois que les fusibles ont été retirés.

SPANISH

Las circuitos pueden estar activos una vez que se hayan abierto los fusibles.

PORTUGUESE

Os circuitos podem estar energizados após os fusíveis se queimarem.

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Chapter 2 Operation Description

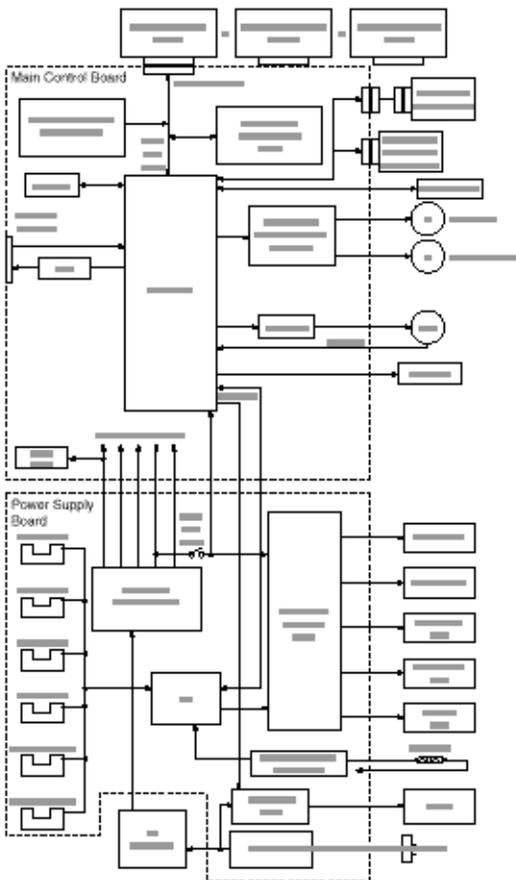
OKIPAGE 10i consists of a main control board, a power supply/sensor board, an operator panel, an electrophotographic process mechanism, and revision for illumination of LED head.

The main control board receives data via the host I/F, it then decodes, edits and stores the data in memory. After completing the editing of a single page of data, it references the font memory and generates bit image data, which is transferred to the LED head in one dot line units.

Through the electrophotographic process mechanism, the data is printed on the paper.

The operator panel is used for operations and status display.

OKIPAGE 10i block diagram is shown in Figure 2-1.





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Chapter 2 Operation Description

The main control board consists of a single chip CPU, two program/font ROMs, four DRAMs, an EEPROM, a host interface circuit, and a mechanism driving circuit.

(1) Single chip CPU

The single chip CPU is a custom CPU (32-bit internal bus, 32-bit external bus, 28.24-MHz clock, with input frequency from a 7.06-MHz clock) which incorporates the RISC CPU and its peripheral devices, and has the following functions:

Built-in device	Function
Chip select controller	Control of ROM, RAM and I/O device
Bus controller	
DRAM controller	
DMA controller	Transfer of image data from DRAM to video output port
Parallel interface controller	Control of Centronics parallel interface
Serial interface controller	Control of RS-232C serial interface
Video output port	Control of LED head
LED STB output port	
Timer	Generation of various control timing Monitoring of paper running and paper size
Serial I/O Port	Control of operator panel, EEPROM, and options
I/O Port	Input and output of sensor and motor signals.

(2) Program and Font ROMs

The Program and Font ROMs store the equipment program and various types of fonts. EPROM or Mask ROM is used as Program and Font ROMs. The mounting locations of these Program and Font ROMs vary depending on the type of the ROMs (for the mounting location see Section 7.4).

(3) DRAM

The DRAM is a 2MB resident memory on the main control board that stores edited data, image data, DLL data and macro data.

(4) EEPROM

1,024-bit Electrically Erasable PROM (EEPROM), is loaded with the following kinds of data:

- Menu data
- Various counter data (page counter, drum counter)
- Adjusting parameters (LED head drive time, print start position, paper feed length)

(5) Parallel Interface

Parallel data is received from a host system via parallel interface which conforms to the IEEE1284 specification.

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Chapter 2 Operation Description

The power supply/sensor board consists of an AC filter circuit, a low voltage power supply circuit, a high voltage power supply circuit, heater drive circuit, and photosensors.

(1) Low Voltage Power Supply Circuit

This circuit generates the following voltages.

Output voltage	Use
+5 V	Logic circuit supply voltage
+ 30 V	Motor and fan drive voltage and source voltage for high-voltage supply
+8 V	RS-232C line voltage
-8 V	RS-232C line voltage and PS board supply voltage
_3.3V	LED head supply voltage

(2) High Voltage Power Supply Circuit

This circuit generates the following voltages required for electrophotographic process from +5 V, according to the control sequence from the main control board. When cover open state is detected, +5 V supply is interrupted automatically to stop the supply of all high-voltage outputs.

Output	Voltage	Use	Remarks
CH	-1.3 KV	Voltage applied to charging roller	
DB	-265 V/+300 V	Voltage applied to developing roller	
SB	-500 V/ 0 V	Voltage applied to toner supply roller	
TR	+500 V to +3.5 KV/-1100 V	Voltage applied to transfer roller	Variable
CB	+400 V/-1350 V	Voltage applied to clearing roller	

(3) Photosensor

The photosensor mounted on this power supply/sensor board monitors the status of paper being fed through the printer during printing.

The sensor layout diagram is shown in Figure 2-2.

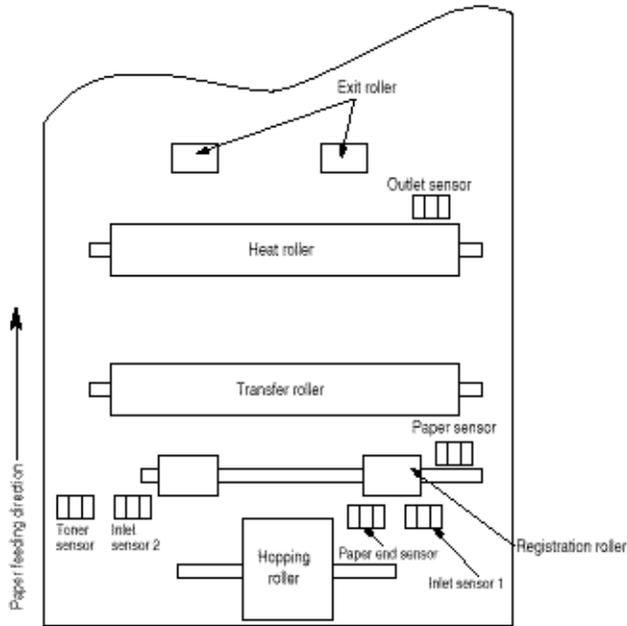


Figure 2-2

Sensor	Function	Sensing state
Inlet sensor 1	Detects the leading part of the paper and gives the monitor timing for switching from hopping operation to feeding operation. Monitors paper feeding situation and paper size based on the paper arrival time and running time.	ON: Paper exists. OFF: No paper exists.
Inlet sensor 2	Detects the paper width	ON: A4 or larger OFF: Small than A4
Paper sensor	Detects the leading portion of the paper. Monitors the paper feeding situation.	ON: Paper exists. OFF: No paper exists.
Outlet sensor	Monitors the paper feeding and size according to the time of arrival to and leaving the past the sensor.	ON: Paper exists. OFF: No paper exists.
Paper and sensor	Detects the end of the paper.	ON: Paper exists. OFF: No paper exists.
Toner low sensor	Detects the lack of toner.	- - - -



2.3.1 Electrophotographic Process Mechanism

2.3.2 Electrophotographic Process

2.3.3 Process Operation Descriptions

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This mechanism actuates the printing of image data supplied by the main control board on the paper by electrophotographic process.

The layout of the electrophotographic process mechanism is shown in Figure 2-3.

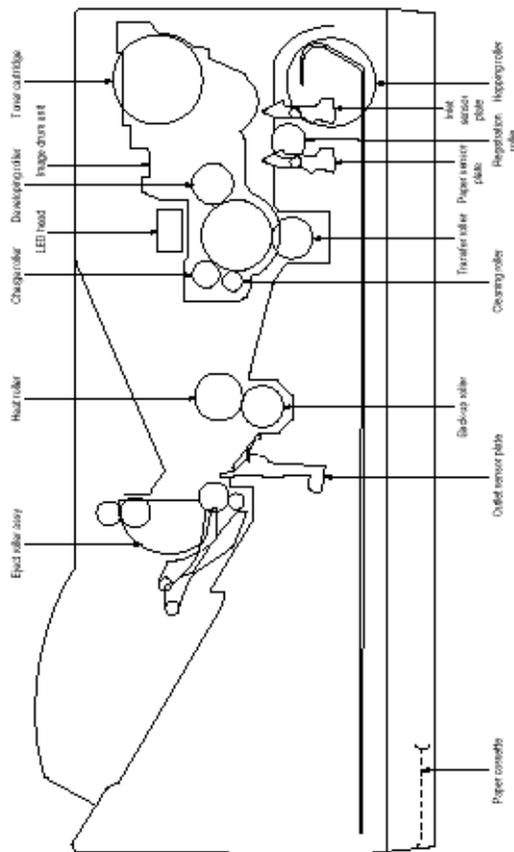


Figure 2-3

(1) Image Drum Unit

The image drum unit consists of a sensitive drum, a charger, and a developer. The unit forms a toner image on the sensitive drum, using an electrostatic latent image formed by the LED head.

(2) Registration Motor

The registration motor is a pulse motor of 48 steps/rotation with two-phase excitement by the signal from the main control board. It drives the hopping and registration rollers via two one-way clutches according to the direction of rotation.

(3) Main (Drum) Motor

The main or drum motor is a pulse motor of 48 steps/rotation with two-phase excitement by the signal from the main control board and is the main motor of this mechanism.

(4) LED Head

Image data for each dot line from the main control board is received by the shift register and latch register. The 4992 LED's are driven to radiate the image data on the image drum.

(5) Fuser

The fuser consists of a heater, a heat roller, a thermistor and a thermostat.

The AC voltage from the power supply/sensor board is applied to the heater controlled by the HEATON signal from the main control board. This AC voltage heats the heater. The main control board monitors the heat roller temperature via the thermistor, and regulates the heater roller to keep it at a designated temperature in the menu, depending on the thickness of the paper (tray 1&2: light=165°C, medium light=170°C, medium=175°C, medium heavy and heavy=195°C; manual feeding and power envelope feeder: light=175°C, medium light=180°C, medium=185°C, medium heavy=190°C, heavy=195°C, transparency = 160°C) by connecting or disconnecting the AC voltage supply to the heater.

When an abnormal rise of the heater roller temperature takes place, the thermostat of the heater voltage supply circuit becomes active and forcibly cuts the AC voltage supply.

The temperature setting of the fuser can be changed through operator panel setting.

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The electrophotographic processing is outlined below. The electrophotographic printing process is shown in Figure 2-4.

1 Charging

The surface of the image drum is charged uniformly with a negative charge by applying the negative voltage to the charge roller.

2 Exposure

Light emitted from the LED head irradiates the negatively charged surface of the image drum. The surface potential of the irradiated portion of the image drum surface becomes lower, forming the electrostatic latent image associated with the print image.

3 Developing and toner recovery

When the negatively charged toner is brought into contact with the image drum, it is attracted to the electrostatic latent image by static electricity, making the image visible. At the same time, the residual toner on the image drum is attracted to the developing roller by static electricity.

4 Transfer

When paper is placed over the image drum surface, the positive charge which is opposite in polarity to that of the toner, is applied to the reverse side of the paper by the transfer roller. The toner is attracted by the positive charge and is transferred onto the paper. This results in the transfer of the toner image formed on the image drum onto the paper.

5 Temporary cleaning

Residual toner which remains on the image drum without being transferred is evened out by the cleaning roller and is temporarily attracted to the cleaning roller by static electricity.

6 Fusing

The toner image transferred onto the paper is fused to the paper by heat and pressure.

An electrophotographic process timing chart is shown in Figure 2-5.

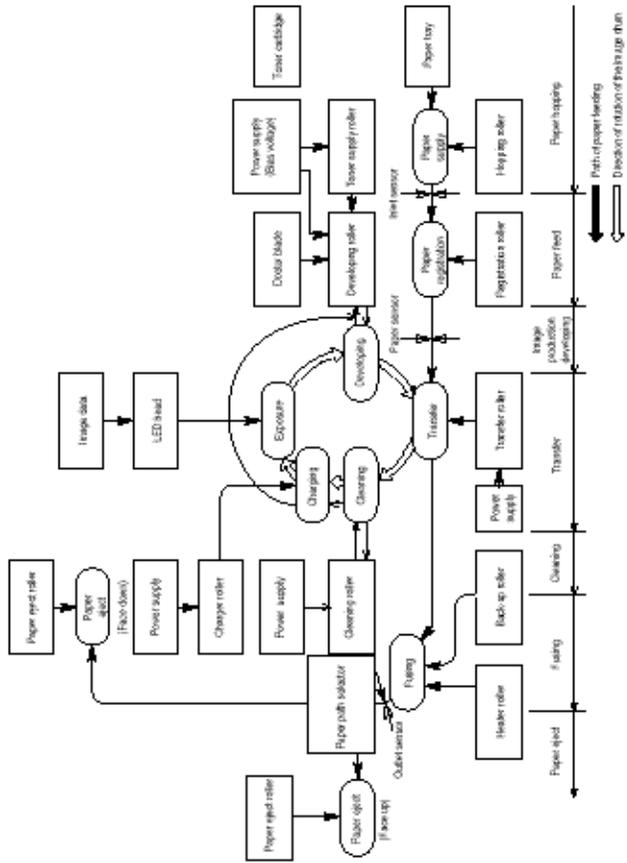


Figure 2-4

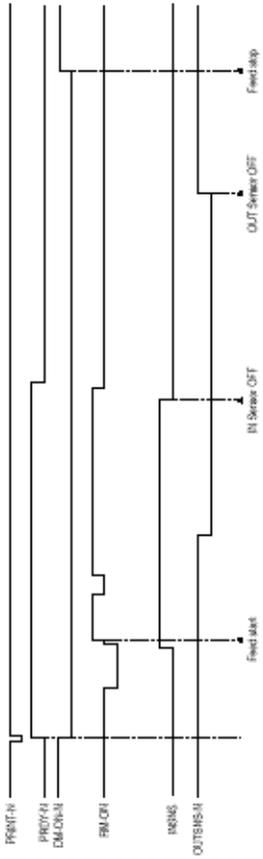
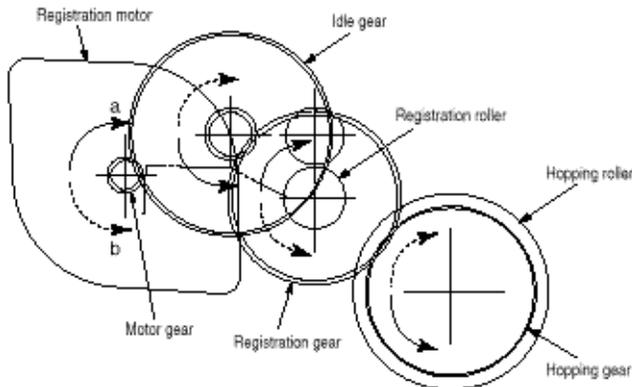


Figure 2-5

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(1) Hopping and Feeding

Hopping and feeding motions are actuated by a single registration motor in the mechanism as shown below:

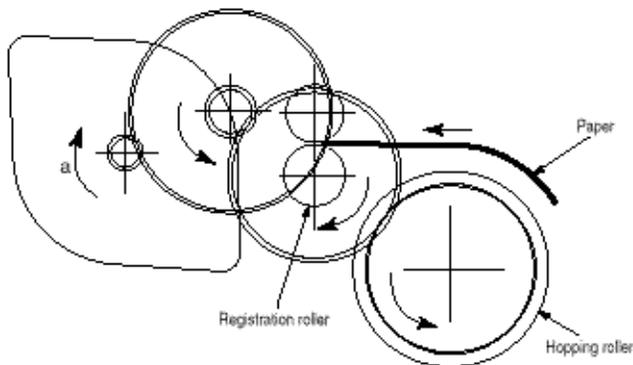


The registration motor turning in direction "a" drives the hopping roller. The registration motor turning in direction "b" drives the registration roller. The registration and hopping gears have one-way bearing, so turning any of these gears in the reverse direction will not transmit the motion to the corresponding roller.

(a) Hopping

1 For hopping, the registration motor turns in direction "a" (clockwise direction) and drives the hopping roller to advance the paper until the inlet sensor turns on (in this case, the registration gear also turns, but the registration roller is prevented from turning by the one-way bearing).

2 After inlet sensor is turned on by the paper advance, the paper is further advanced to a predetermined distance until the paper hits the registration roller (the skew of the paper can thus be corrected).

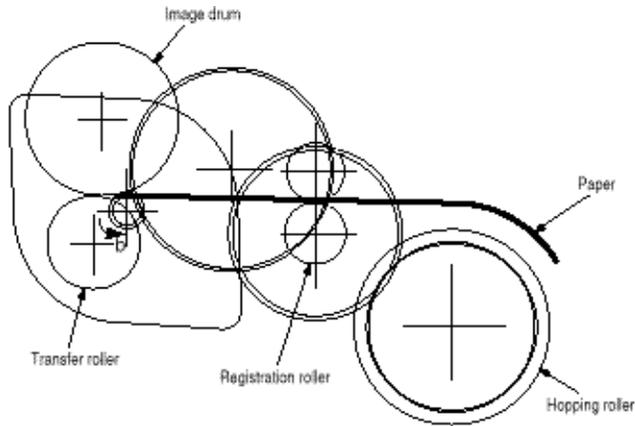


(b) Feeding

1 When hopping is completed, the registration motor turning in direction "b" (counter-clockwise direction)

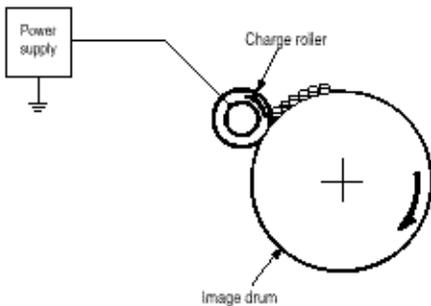
drives the registration roller to advance the paper (in this case, the hopping gear also turns, but the hopping roller is prevented from turning by the one-way bearing).

2 The paper is further advanced in synchronization with the print data.

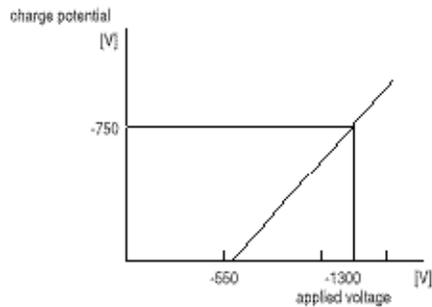


(2) Charging

Charging is actuated by the application of the DC voltage to the charge roller that is in contact with the image drum surface.

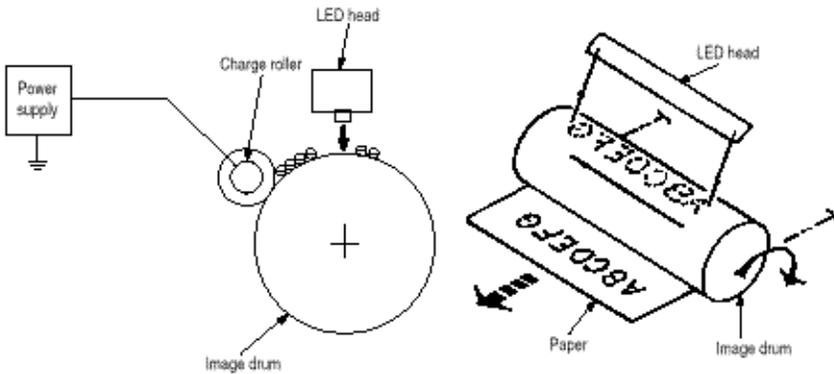


The charge roller is composed of two layers, a conductive layer and a surface protective layer, both having elasticity to secure good contact with the image drum. When the DC voltage applied by the power supply exceeds the threshold value, charging begins. The applied voltage is proportional to the charge potential, with offset of approximately -550V.

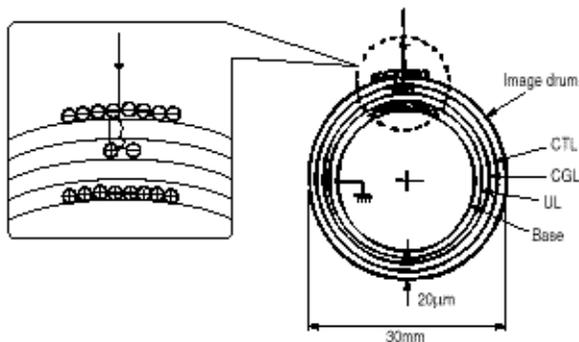


(3) Exposure

Light emitted by the LED head irradiates the image drum surface. The surface potential of the irradiated portion of the image drum drops, forming an electrostatic latent image associated with the image signal.



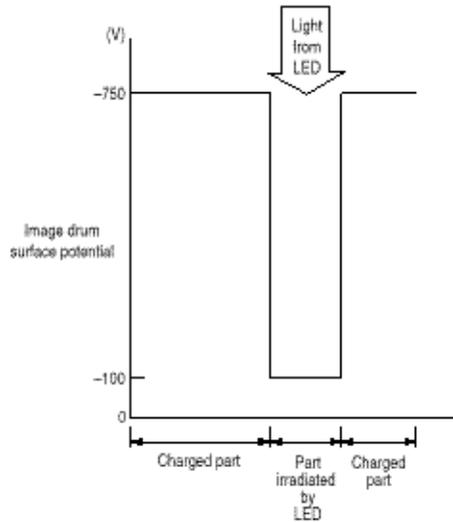
The image drum is coated with an underlayer (UL), a carrier generation layer (CGL), and carrier transfer layer (CTL) on aluminum base. The organic photo conductor layer (OPC), comprising CTL and CGL, is about 20 μm thick.



The image roller surface is charged to about -750 V by the contact charge of the charge roller.

When the light from the LED head irradiates the image drum surface, the light energy generates positive and negative carriers in the CGL. The positive carriers are moved to the CTL by an electrical field acting on the image drum. Likewise, the negative carriers flow into the aluminum layer (ground).

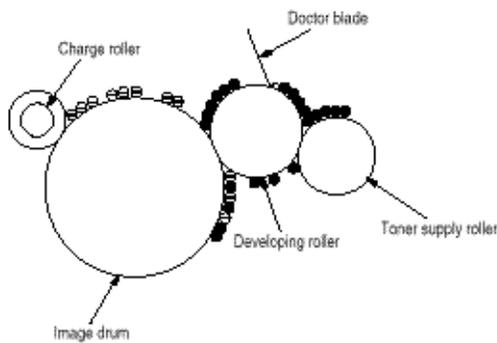
The positive carriers moved to the CTL combine with the negative charges on the image drum surface accumulated by the contact charge of the charge roller, lowering the potential on the image drum surface. The resultant drop in the potential of the irradiated portion of the image drum surface forms an electrostatic latent image on it. The irradiated portion of the image drum surface is kept to about -100 V.



(4) Developing

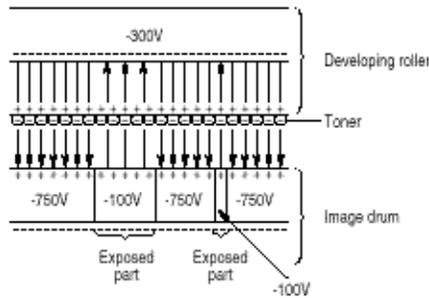
Toner is attracted to the electrostatic latent image on the image drum surface, converting it into a visible toner image. Developing takes place through the contact between the image drum and the developing roller.

1 As the toner supply roller rotates while rubbing on the developing roller, a friction charge is generated between the developing roller and the toner, allowing the toner to be attracted to the developing roller (the developing roller surface is charged positive and the toner, negative).



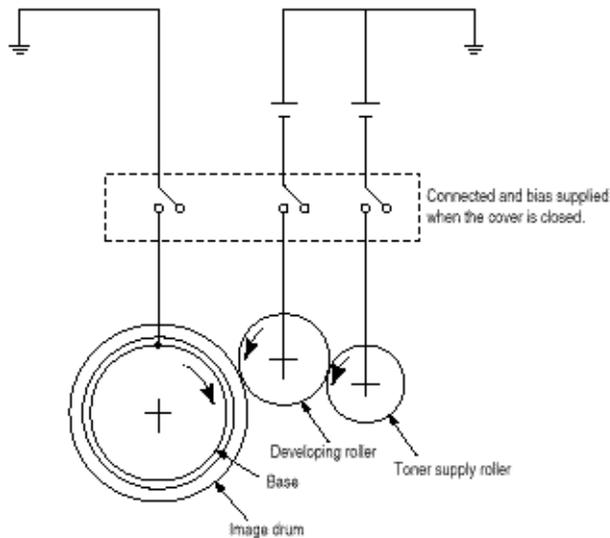
2 The toner attracted to the developing roller is scraped off by the doctor blade, forming a thin coat of toner on the developing roller surface.

3 Toner is attracted to the exposed portion (low-potential part) of the image drum at the contact of the image drum and the developing roller, making the electrostatic latent image visible.



An illustration of activities at the contact point of the image drum surface and the developing roller (arrow marks denote the direction of the electrical field).

Note: The bias voltage required during the developing process is supplied to the toner supply roller and the developing roller, as shown below. -500 VDC is supplied to the toner supply roller, -265 VDC to the developing roller.

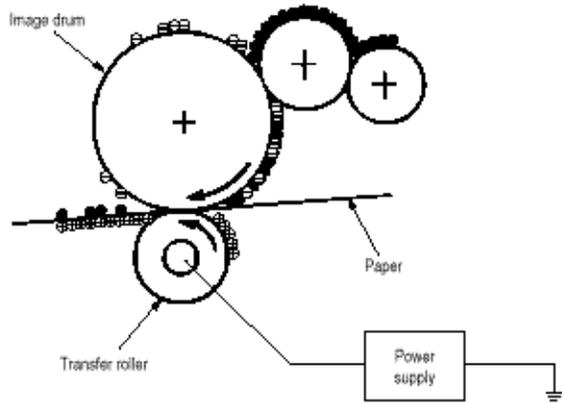


(5) Transfer

The transfer roller is composed of conductive sponge material, and is designed to get the image drum surface and the paper in a close contact.

Paper is placed over the image drum surface, and the positive charge, opposite in polarity to that of the toner, is applied to the paper from the reverse side.

The application of a high positive voltage from the power supply to the transfer roller causes the positive charge inducement on the transfer roller surface, transferring the charge to the paper as it contacts the transfer roller. The toner with negative charge is attracted to the image drum surface, and it is transferred to the upper side of the paper due to the positive charge on the reverse side of the paper.

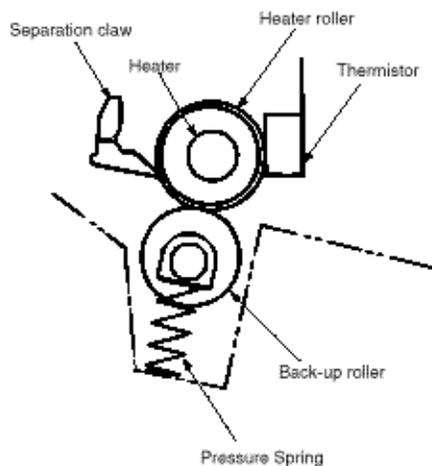


(6) Fusing

When the transfer is completed, the toner image is fused to the paper by heat and pressure as the paper with unfused toner image passes between the heater roller and the back-up roller. The heater roller with Teflon coating incorporates a 400W heater (Halogen lamp), which generates heat.

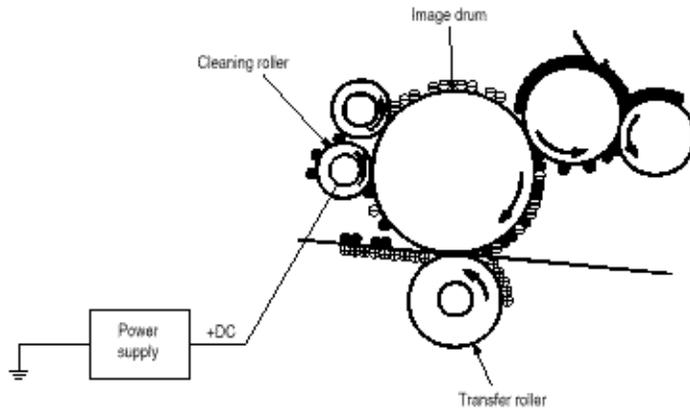
A thermistor which is in contact with the heater roller regulates the temperature of the heater roller to a designated temperature in the menu, depending on the thickness of the paper (tray 1&2: light=165°C, medium light=170°C, medium=175°C, medium heavy and heavy=195°C/manual feeding and power envelope feeder: light=175°C, medium light=180°C, medium=185°C, medium heavy=190°C, heavy=195°C, transparency = 160°C). A safety thermostat cuts voltage supply to the heater off by opening the thermostat in the event of abnormal temperature rises.

The back-up roller is held under a pressure of 3.76 kg applied by the pressure spring on each side.



(7) Cleaning

When the transfer is completed, the residual toner left on the image drum is attracted to the cleaning roller temporarily by static electricity, and the image drum surface is cleaned.



(8) Cleaning of rollers

The charge, transfer and cleaning rollers are cleaned for the following cases:

- Warming up when the power is turned on.
- Warming up after the opening and closing of the cover.
- When the number of sheets accumulated reaches 10 or more, and the printout operation ends.

Changes in bias voltage applied to each roller move the attaching toner off the roller to the image drum and return it to the developer.

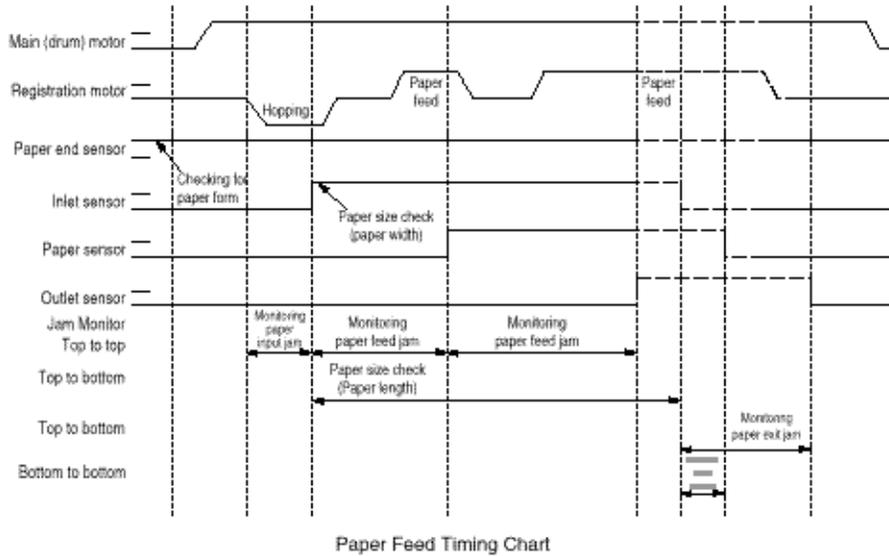
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Chapter 2 Operation Description

The paper jam detection function monitors the paper condition when the power is turned on and during printing. When any of the following conditions arises, this function interrupts the printing process. If any of the following errors is encountered, printing can be recovered by removing the jammed paper (by opening the upper cover, removing the jammed paper and closing the upper cover).

Error	Cause of error
Paper Input jam	<ul style="list-style-type: none"> ● The paper is in contact with the inlet sensor when the power is turned on. ● After hopping operation is attempted three times, the leading edge of the paper does not reach the inlet sensor.
Paper feed jam	<ul style="list-style-type: none"> ● The paper is in contact with the paper sensor when the power is turned on. ● The leading edge of the paper does not reach the paper sensor within a predetermined feeding distance since the paper has reached the inlet sensor. ● The trailing edge of the paper does not pass over the paper sensor within a predetermined feeding distance after the same has passed over the inlet sensor. ● The leading edge of paper does not reach the outlet sensor within a predetermined feeding distance after the paper has reached the paper sensor.
Paper exit jam	<ul style="list-style-type: none"> ● The paper is in contact with the outlet sensor when the power is turned on. ● The paper does not pass over the outlet sensor within a predetermined feeding distance after the leading edge of the paper has reached the outlet sensor. ● The paper size check for manual feeding finds that the paper size is free size.
Paper size error	<ul style="list-style-type: none"> ● The size of the paper is monitored by the inlet sensor 1. The paper is not detected by the inlet sensor 1 within predetermined feeding distance. ● The inlet sensor 2 detects that the size of the loaded paper is A4 or larger, or smaller than A4. The detected paper size differs from the paper size set by command or menu. ● The paper size check for manual feeding finds that the paper size is free size.



Paper Feed Check List

Type of error	Monitor	Error		
		Standard value	Plus	Minus
Paper feed error	Hopping start to In sensor on	72.0	36.0	-
Paper feed jam	In sensor on to Write sensor on	20.0	22.0	-
Paper feed jam	Write sensor on to Out sensor on	140.5	25.0	-
Paper size error	In sensor on to Out sensor on	Depends on the paper length	45.0	45.0
Paper exit jam	Out sensor on to Out sensor off	Depends on the paper length	45.0	45.0
Paper feed jam	In sensor off to Write sensor Off	22.2	22.0	-

Note: Hyphen "-" in the table represents "not checked".

Paper Length List

Type	Paper length	Check range	
		Min.	Max.
A4	297.0	252.0	342.0
A5	210.0	165.0	255.0
B5	257.0	212.0	302.0
LETTER	279.4	234.4	324.4
LEGAL 13	330.2	285.2	375.2
LEGAL 14	355.6	310.6	400.6
EXEC	266.7	221.7	311.7
A6	148.0	103.0	193.0
A6	148.0	103.0	193.0
Monarch	190.5	145.5	235.5
COM-9	225.4	180.4	270.4
COM-10	241.3	196.3	286.3
DL	220.0	175.0	265.0
C5	229.0	184.0	274.0

Free	110.1-355.6	65.0	400.6
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Unit: mm

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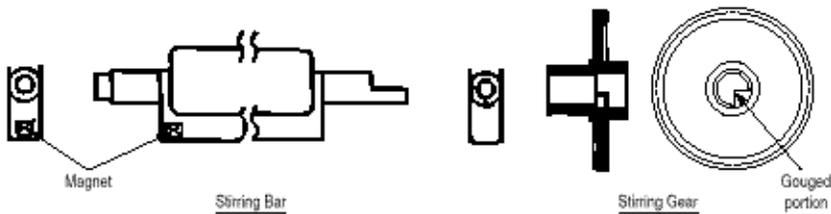
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Chapter 2 Operation Description

When the stacker cover is opened, the cover open microswitch on the power supply/sensor board is turned off to cut +5V supply to the high voltage power supply circuit. This results in the interruption of all high-voltage outputs. At the same time, the CVOPN signal is sent to the main control board to notify that the microswitch is off, and the main control board carries out the cover open process.

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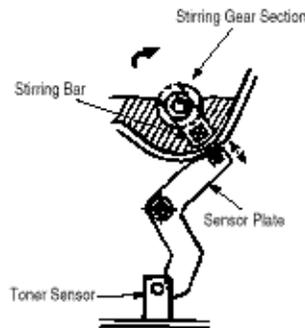
- **Device**
The Toner Low Detection device consists of a stirring gear which rotates at a constant rate, a stirring bar and a magnet on the stirring bar. The stirring bar rotation is driven by the link to the gouged portion in the stirring gear.



- **Operation**
Toner Low is detected by monitoring the time interval of the encounter of the magnet set on the sensor plate and the magnet on the stirring bar.

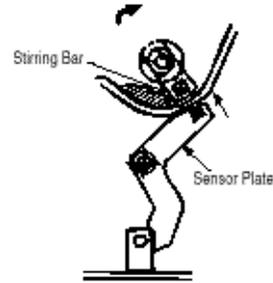
Operation during Toner Full State

- The stirring bar rotates due to the mechanical transmission of energy originating from the interlocking with the stirring gear.
- Even when the magnet on the stirring bar reaches the maximum height, the stirring bar is pushed by the stirring gear, since the other side is being dipped in the toner.

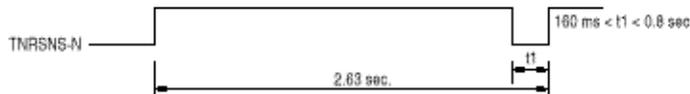


Operation during Toner Low State

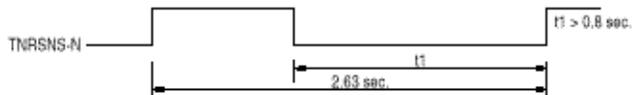
- When the stirring bar reaches the maximum height, it falls to the minimum height due to its own weight, since there is no resistance provided by the toner on the other side. Because of this, the time interval during which it is in encounter with the magnet of the sensor plate becomes longer. By monitoring this time interval, Toner Low state can be detected.



TONER FULL state



TONER LOW state



- When the Toner Low state is detected 2 times consecutively, Toner Low is established.
- When the Toner Full state is detected 2 times consecutively, Toner Low is canceled.
- When there is no change with the toner sensor for 2 cycles (2.63 sec. x 2) or more, then the Toner Sensor Alarm is activated.
- The toner sensor is not monitored while the main (drum) motor is in a halt.

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Chapter 3 Parts Replacement

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The section explains the procedures for replacement of parts, assemblies, and units in the field. Only the disassembly procedures are explained here. For reassembly, reverse the disassembly procedure.

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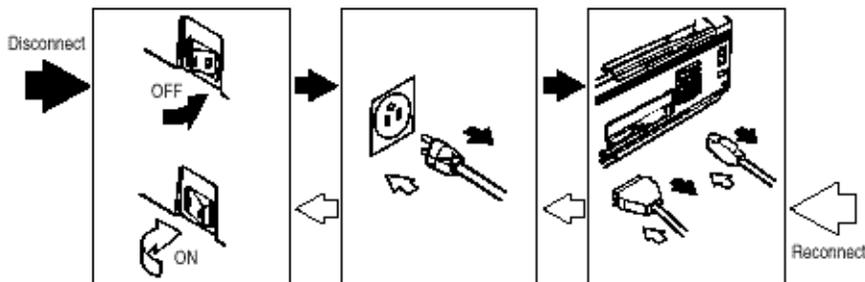
(1) Before starting to replace parts, remove the AC cord and interface cable.

(a) Remove the AC cord in the following sequence:

- i) Turn off ("o") the power switch of the printer.
- ii) Disconnect the AC inlet plug of the AC cord from the AC receptacle.
- iii) Disconnect the AC cord and interface cable from the printer

(b) Reconnect the printer in the following procedure.

- i) Connect the AC cord and interface cable to the printer.
- ii) Connect the AC inlet plug to the AC receptacle.
- iii) Turn on ("I") the power switch of the printer.



(2) Do not disassemble the printer as long as it is operating normally.

(3) Do not remove parts which do not have to be touched; try to keep the disassembly to a minimum.

(4) Use specified service tools.

(5) When disassembling, follow the laid out sequences. Parts may be damaged if these sequences are not followed.

(6) Since screws, collars and other small parts are likely to be lost, they should temporarily be attached to the original positions during disassembly.

(7) When handling IC's such as microprocessors, ROMs and RAMs, or circuit boards, do not wear gloves that are likely to generate static electricity.

(8) Do not place printed circuit boards directly on the equipment or floor.

[Service Tools]

The tools required for field replacement of printed circuit boards, assemblies and units are listed in Table 3-1.

Table 3-1 Service Tools

No.	Service Tools	Q' ty	Application	Remarks
1	 No. 1-100 Philips screwdriver	1	2-2.5 mm screws	
2	 No. 2-100 Philips screwdriver	1	3-5 mm screws	
3	 No. 3-100 screwdriver	1		
4	 No. 5-200 screwdriver	1		
5	 Digital multimeter	1		
6	 Pliers	1		
7	 Handy cleaner	1		
8	 LED Head cleaner	1	Cleans LED head	

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This section explains the layout of main components of the equipment.

[Lower base unit]

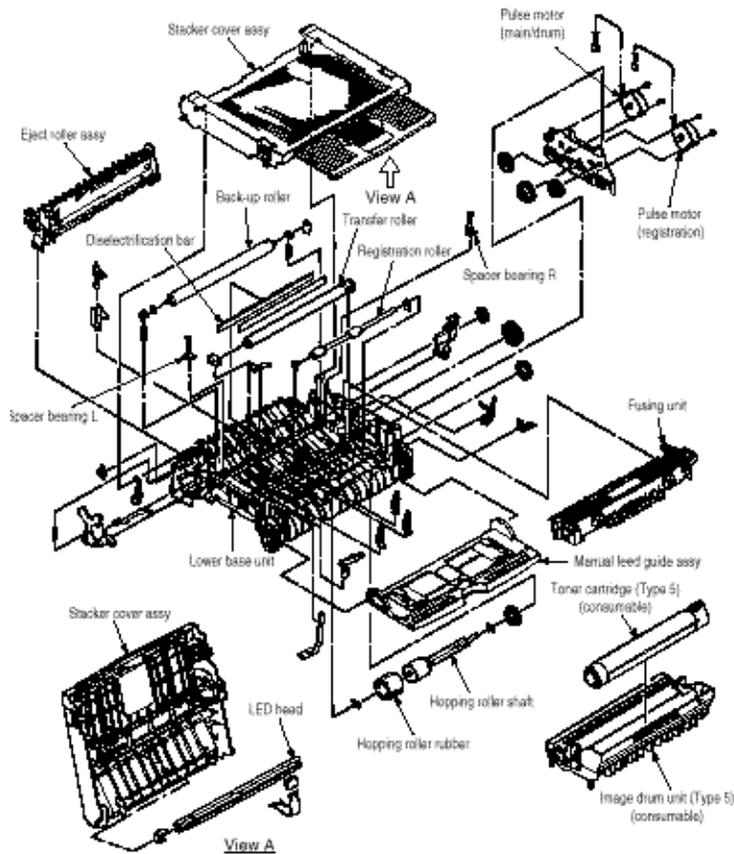


Figure 3-1

[Upper cover unit]

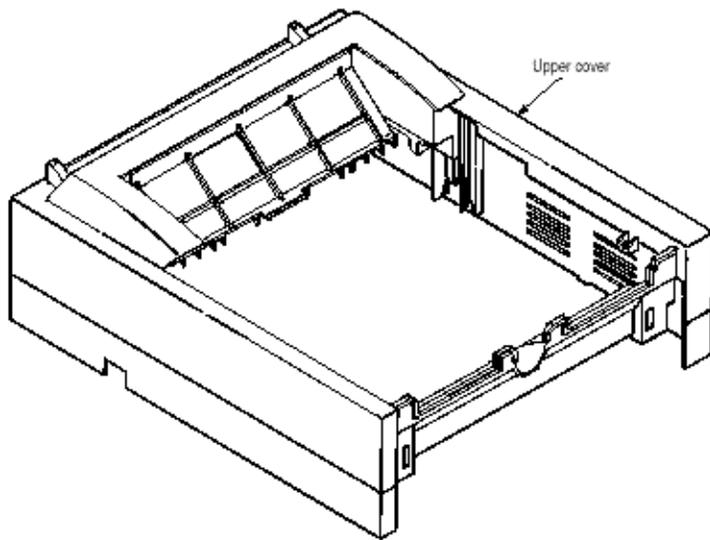


Figure 3-2

[Base unit]

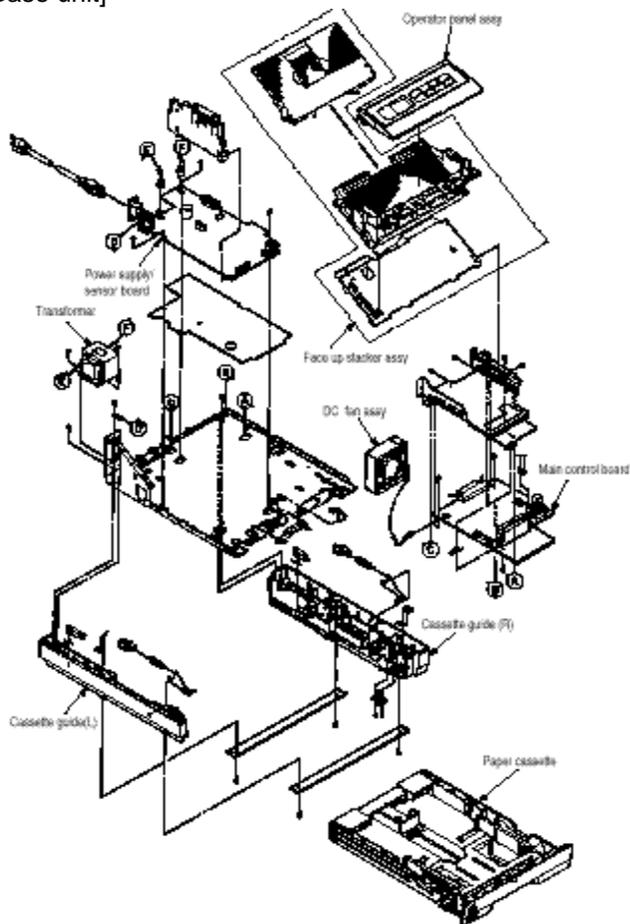


Figure 3-3

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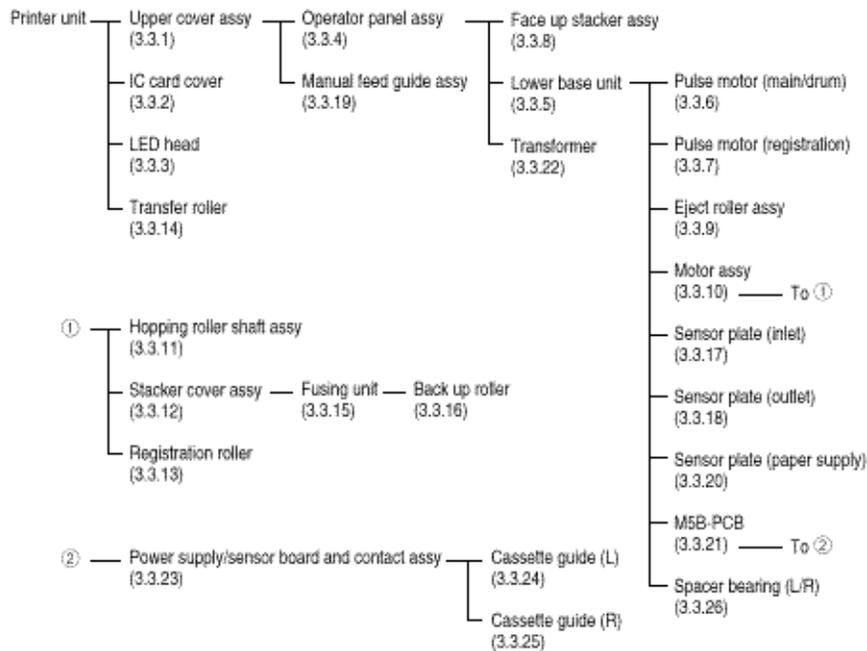


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Chapter 3 Parts Replacement

This section explains how to change parts and assemblies listed in the disassembly diagram below.

In the parts replacement procedure, those parts marked with the part number inside (1) with white letters are RSPL parts.



3.3.1 Upper Cover Assy

3.3.2 IC Card Cover

3.3.3 LED Head

3.3.4 Operator Panel Assy

3.3.5 Lower Base Unit

3.3.6 Pulse Motor (Main/Drum)

3.3.7 Pulse Motor (Registration)

3.3.8 Face Up Stacker Assy

3.3.9 Eject Roller Assy

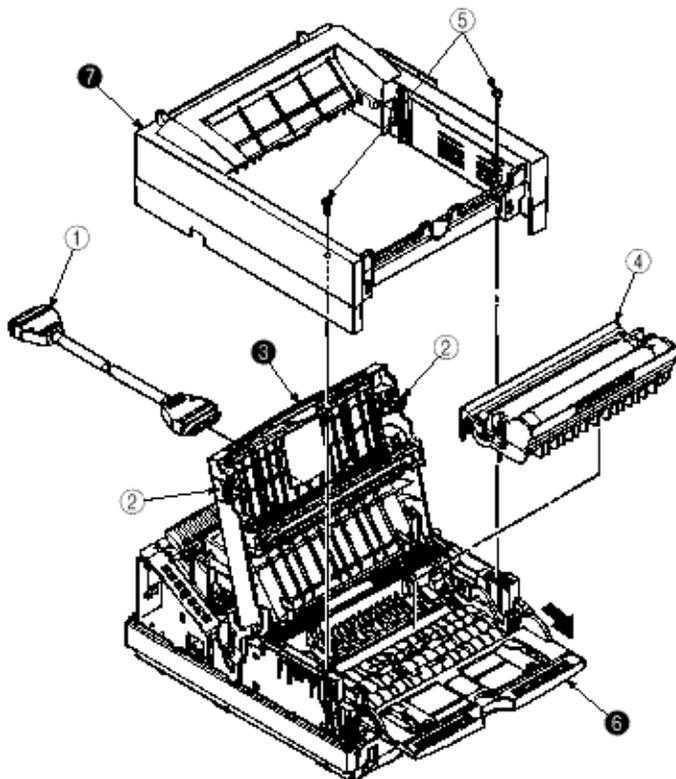
3.3.10 Motor Assy

- 3.3.11 Hopping Roller Shaft Assy
- 3.3.12 Stacker Cover Assy
- 3.3.13 Registration Roller
- 3.3.14 Roller Transfer Assy
- 3.3.15 Fusing Unit
- 3.3.16 Back-up Roller
- 3.3.17 Sensor Plate (Inlet)
- 3.3.18 Sensor Plate (Outlet)
- 3.3.19 Manual Feed Guide Assy
- 3.3.20 Sensor Plate (Paper Supply)
- 3.3.21 M5B-PCB
- 3.3.22 Transformer
- 3.3.23 Power Supply/Sensor Board and Contact Assy
- 3.3.24 Cassette Guide L Assy
- 3.3.25 Cassette Guide R Assy
- 3.3.26 Spacer Bearing (L/R)

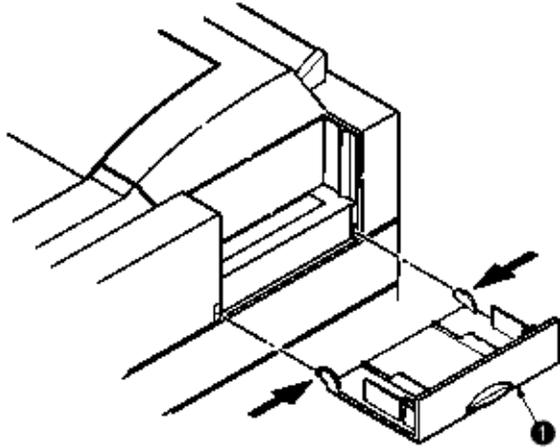
-
- (1) With the power switch turned off, unplug the AC power cord from the outlet.
 - (2) Disconnect the interface cable (1).
 - (3) Press the knobs (2) on left and right sides and open the stacker cover Assy (3).
 - (4) Take out the image drum unit (4).
 - (5) Remove two screws (5), and open the manual feed guide Assy (6). Lift the front side of the upper cover (7) up and unlock the latches at two locations on the back side. Lift and remove the upper cover Assy (7).

Notes: 1. When removing or reinstalling the upper cover, be careful not to get the motor cables tangled or caught.

2. When reinstalling the screws (5), be sure to direct the screws into pre-existing threads.



(1) Open the IC card cover (1), press it from both sides at the hinges in the directions of arrows shown below and remove it.

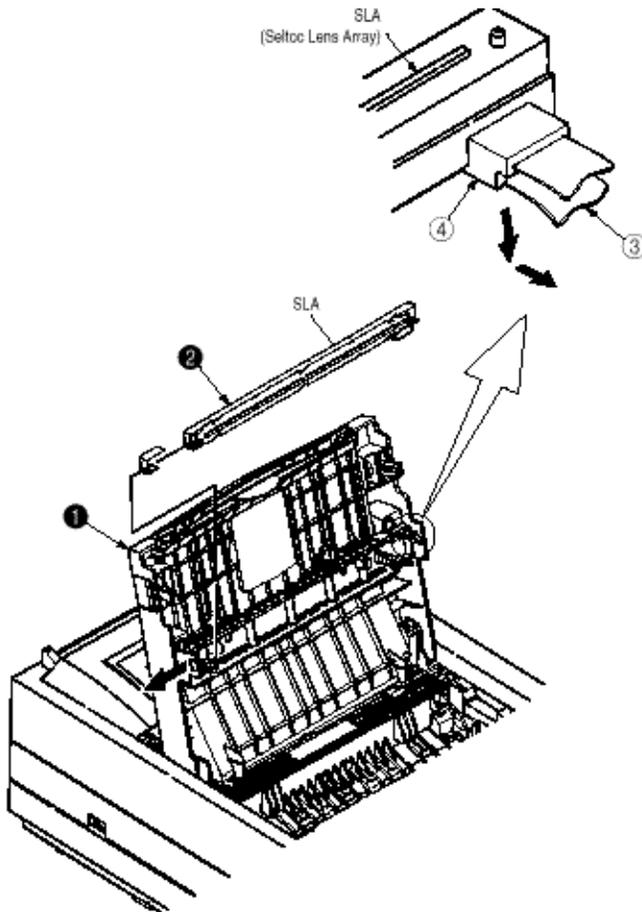


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-
- (1) Press the knobs on left and right sides and open the stacker cover assy (1).
 - (2) Open the hook section on the left side of the stacker cover and remove the LED head (2).

Note:

- Be sure not to touch directly or push on the SLA part of the LED head.
- Do not remove the LED cable (3) from the connector.
- Remove connector (4) and cable (3) together as an assembly from the LED head.
- After mounting the new LED head and reinstalling the cable, set drive time of the LED head according to the marking on the LED head (see 4.2.1).





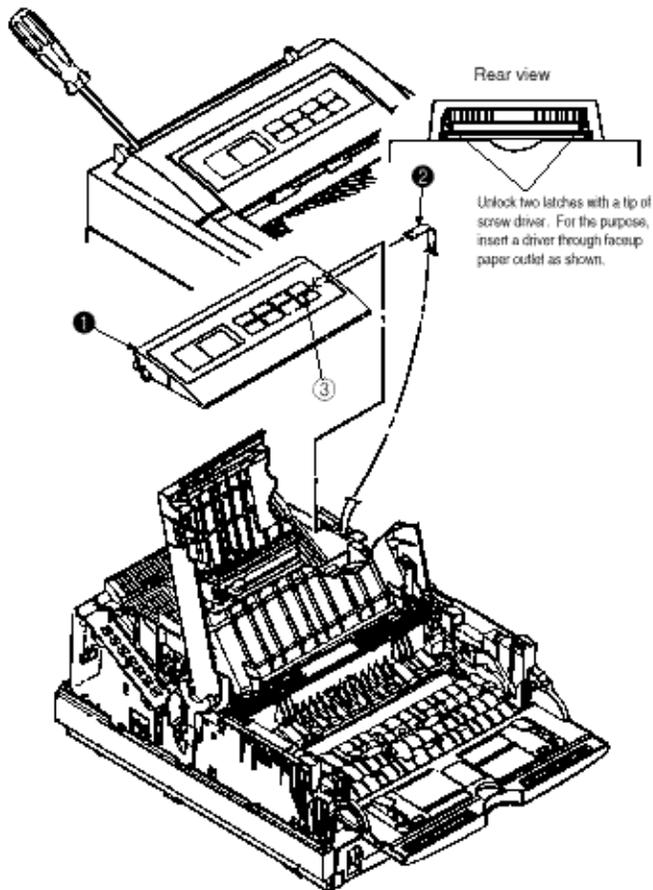
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Chapter 3 Parts Replacement

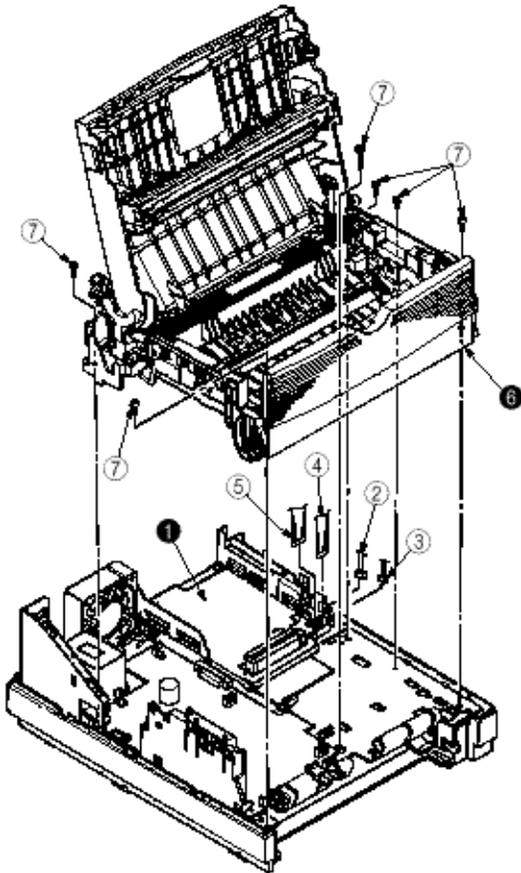
(1) Unlock two latches on the upper cover from the rear side, lift the operator panel assy (1) from the back and remove it.

(2) Remove the Sumi card (operator panel) (2) from the connector (CN1) (3).

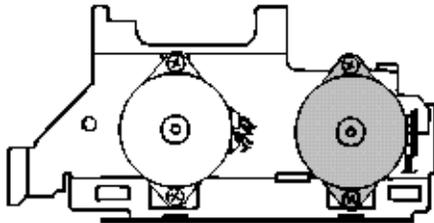
Note: You can remove the operator panel assy while the upper cover installed on the unit. However, it is much easier to remove the panel assy after removal of upper cover.



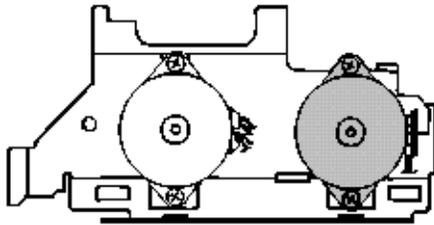
-
- (1) Remove the upper cover assy (see 3.3.1).
 - (2) Remove the operator panel assy (see 3.3.4).
 - (3) Remove the face up stacker assy (see 3.3.8).
 - (4) Remove the connecting cables (2) and (3) of the pulse motors from the connectors (DM, RM) of the M5B-PCB 1.
 - (5) Remove the LED head cables (4) and (5) from the connectors (HEAD1, HEAD2).
 - (6) Open the manual feed guide assy, remove six screws (7), then remove the lower base unit (6).



-
- (1) Remove the upper cover assy (see 3.3.1).
 - (2) Remove the lower base unit (see 3.3.5).
 - (3) Remove two screws (1) and remove the pulse motor (main/drum) (2) from the motor bracket (3).

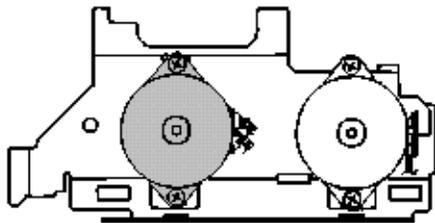


View A

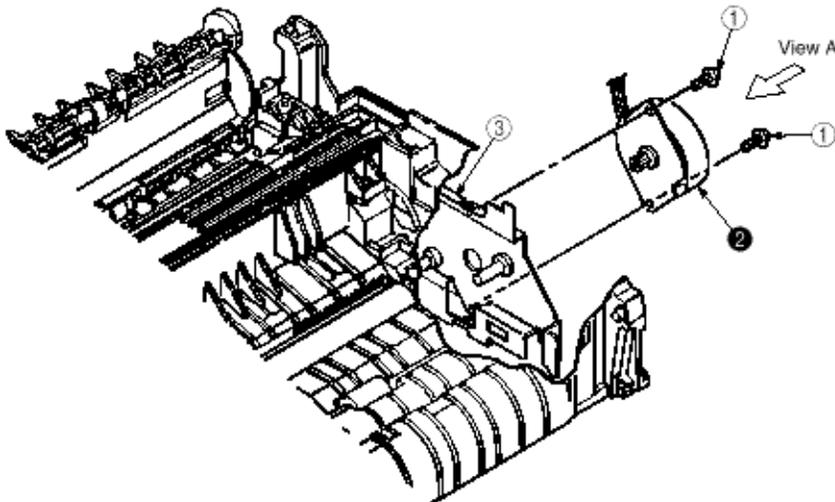


View A

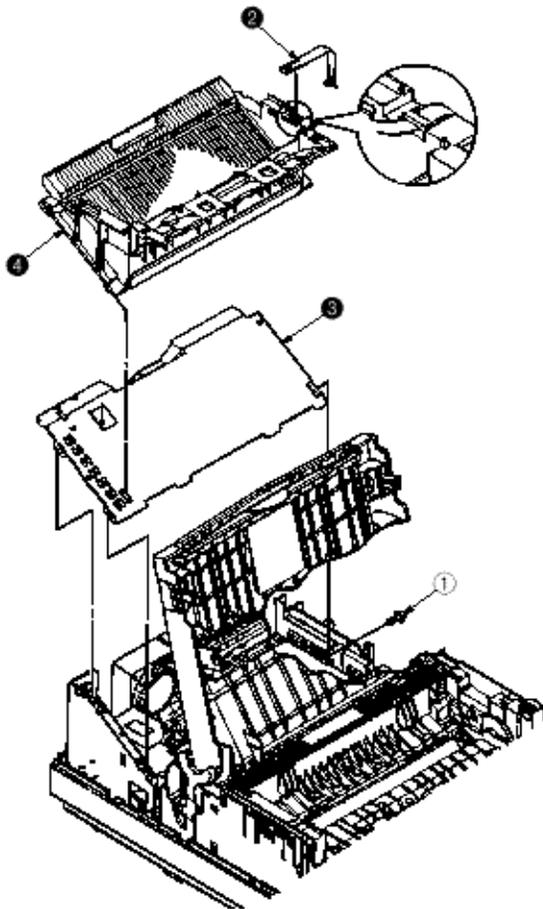
-
- (1) Remove the upper cover assy (see 3.3.1).
 - (2) Remove the lower base unit (see 3.3.5).
 - (3) Remove two screws (1) and remove the pulse motor (registration) (2) from the motor bracket (3).



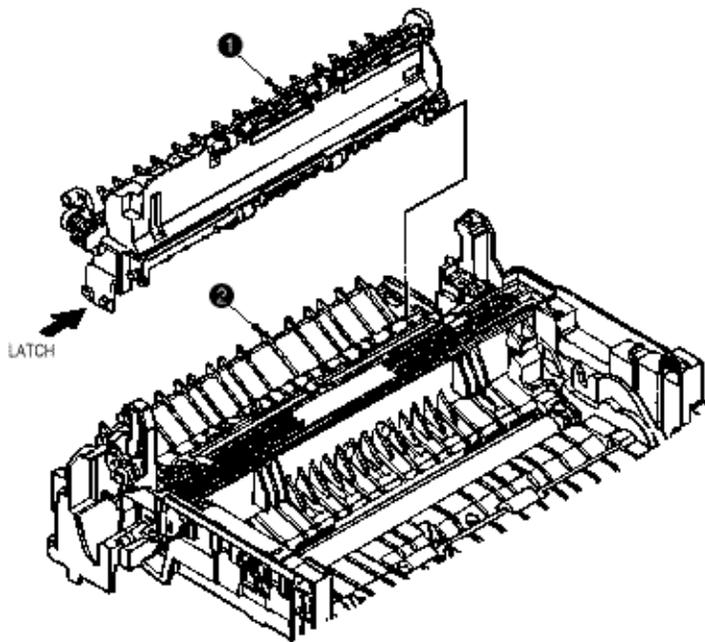
View A



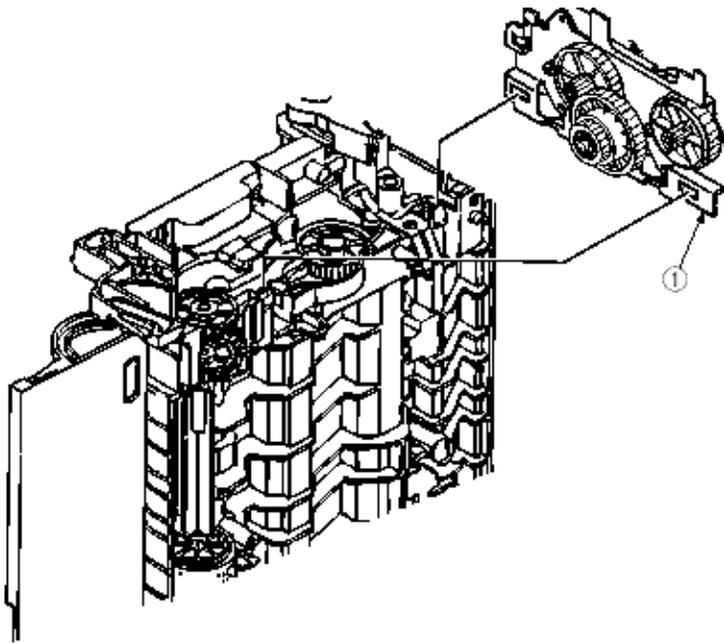
-
- (1) Remove the upper cover assy (see 3.3.1).
 - (2) Remove the operator panel assy (see 3.3.4).
 - (3) Remove the screw (1) and remove the Sumi card (operator panel cable) (2) off the latch section of face up stacker (4). Remove both the shield plate (3) and face up stacker (4) together.
 - (4) Unlock the latches at two locations, and remove the face up stacker (4).



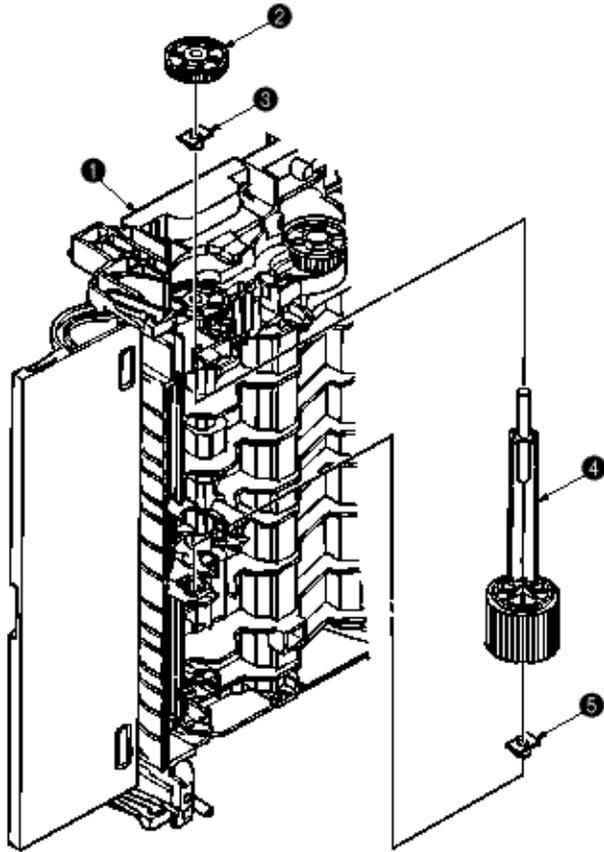
-
- (1) Remove the upper cover assy (see 3.3.1).
 - (2) Remove the operator panel assy (see 3.3.4).
 - (3) Remove the face up stacker assy (see 3.3.8).
 - (4) Remove the lower base unit (see 3.3.5).
 - (5) Disengage the eject roller assy (1) from the lower base (2) by pressing the latch section of the eject roller assy (1) in the direction of the arrow shown below, and remove the eject roller assy (1).



-
- (1) Remove the upper cover assy (see 3.3.1).
 - (2) Remove the operator panel assy (see 3.3.4).
 - (3) Remove the face up stacker assy (see 3.3.8).
 - (4) Remove the lower base unit (see 3.3.5).
 - (5) Stand the lower base unit on its side as shown, and unlock two latches, then remove the motor assy (1).



-
- (1) Remove the upper cover assy (see 3.3.1).
 - (2) Remove the operator panel assy (see 3.3.4).
 - (3) Remove the face up stacker assy (see 3.3.8).
 - (4) Remove the lower base unit (see 3.3.5).
 - (5) Remove the motor assy (see 3.3.10).
 - (6) With the lower base unit (1) standing on its side, remove the one-way clutch gear (2) and the bearing (A) (3).
 - (7) Remove the hopping roller shaft assy (4) (the bearing (B) (5) comes off, so be careful not to lose it).



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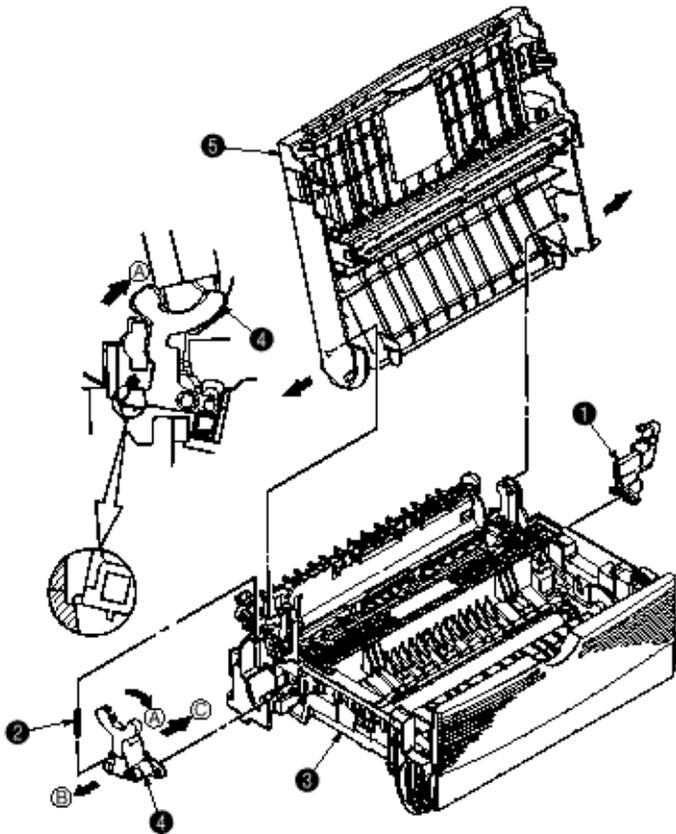


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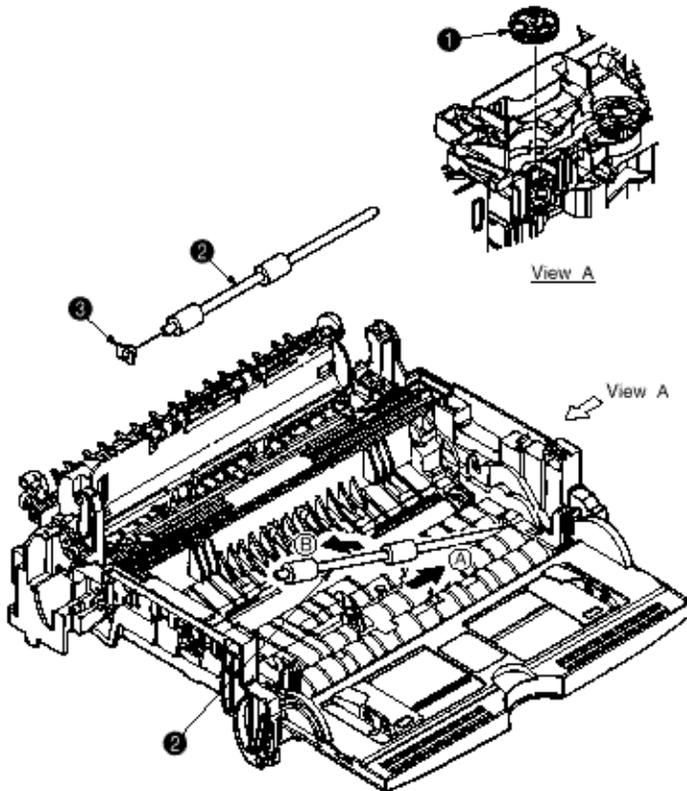
Chapter 3 Parts Replacement

- (1) Remove the upper cover assy (see 3.3.1).
- (2) Remove the operator panel assy (see 3.3.4).
- (3) Remove the face up stacker assy (see 3.3.8).
- (4) Remove the reset lever R (1).
- (5) Detach the reset spring (2) from the lower base unit (3), turn the reset lever L (4) in the direction of arrow A until it stops, and remove it in the direction of arrow B .
- (6) Unlock two latches of the lower base unit (3), then remove the stacker cover assy (5).

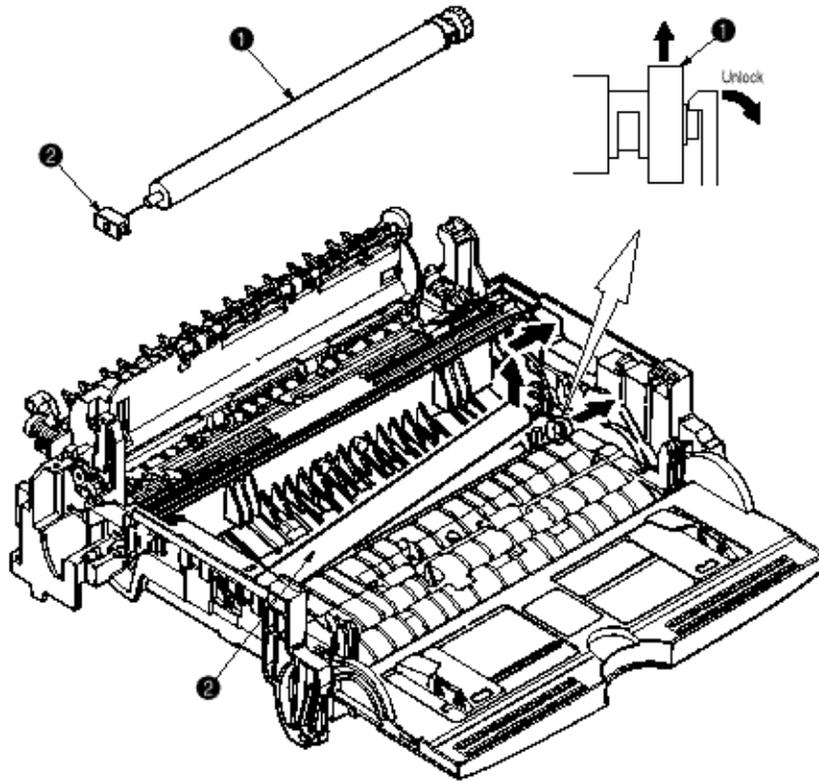
Note: When reinstalling the reset lever L (4), fit it onto the guide of the lower base unit (3), turn it in the direction of arrow C while pressing down the shaft of back up roller, and engage the reset lever L (4).



-
- (1) Remove the upper cover assy (see 3.3.1).
 - (2) Remove the operator panel assy (see 3.3.4).
 - (3) Remove the face up stacker assy (see 3.3.8).
 - (4) Remove the lower base unit (see 3.3.5).
 - (5) Remove the motor assy (see 3.3.10).
 - (6) With the lower base unit standing on its side, remove the one-way clutch gear (2).
 - (7) Press the registration roller (2) in the direction of arrow (A) and lift up the left side of it, then remove the registration roller (2) and the bearing (registration) (3).
 - (8) Pull out the registration roller (2) in the direction of arrow (B).



-
- (1) With the power switch turned off, unplug the AC cord from the outlet.
 - (2) Open the stacker cover.
 - (3) Release the roller transfer assy (1) by unlocking the latch of the main unit (never apply excessive force when unlocking the latch).
 - (4) Lift the right side of the roller transfer assy (1), and shift it to the right side, then pull it out from the main unit (at this time, the bearings (2) of the left and right sides of the roller transfer assy (1) will also come off).

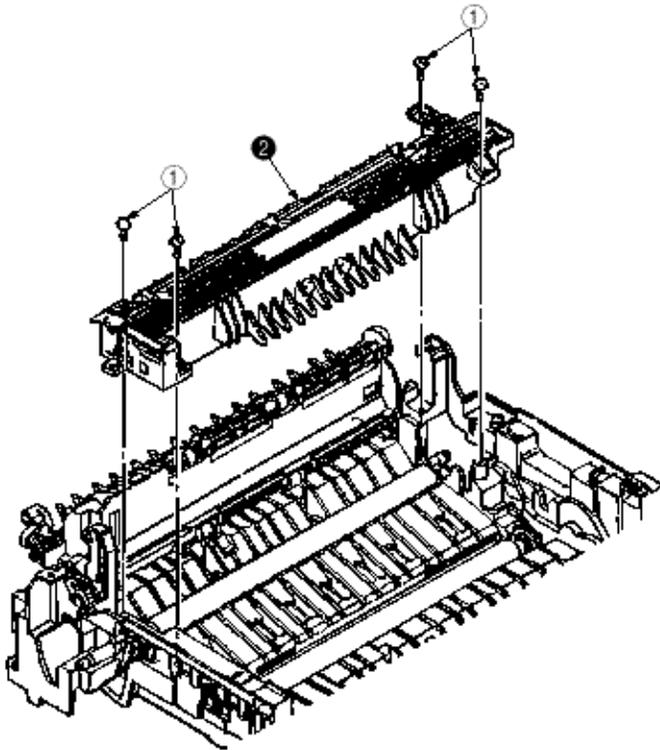


-
- (1) Remove the upper cover assy (see 3.3.1).
 - (2) Remove the operator panel assy (see 3.3.4).
 - (3) Remove the face up stacker assy (see 3.3.8).
 - (4) Remove the stacker cover assy (see 3.3.12).
 - (5) Remove four screws (1), lift and remove the fusing unit (2).

Caution: Fusing unit may be hot. Use care when handling.

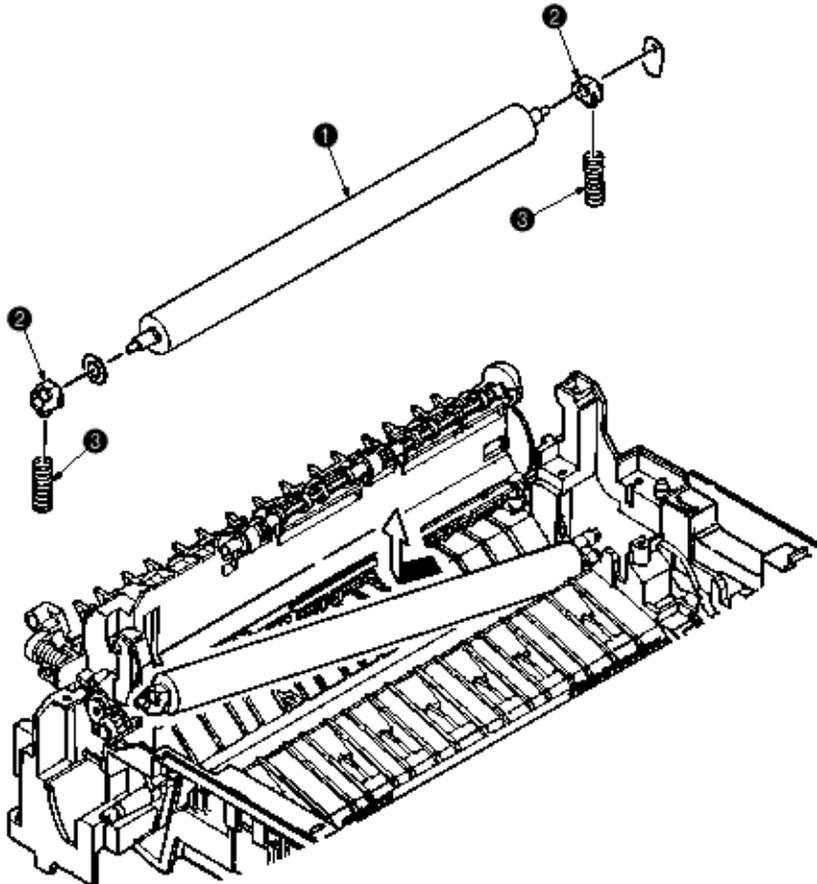
Notes:

1. When reinstalling or removing the fusing unit, tighten or loosen the screws while holding the fusing unit assy (2) down with your hand (it is being pushed up by back up roller).
2. When reinstalling the screws (1), be sure to direct the screws into pre-existing thread and avoid damaging the threads.
3. Do not apply excessive torque when tightening the screws (1).

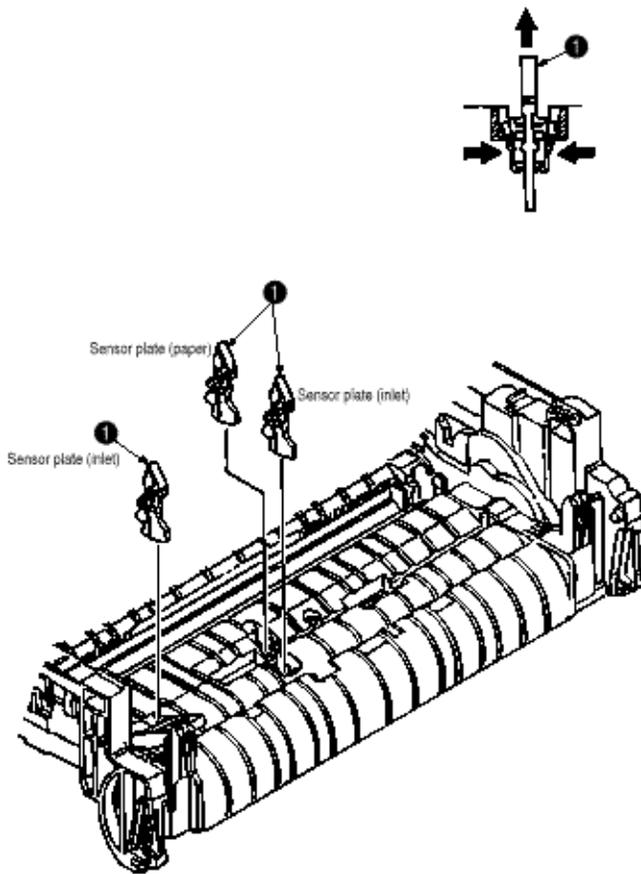


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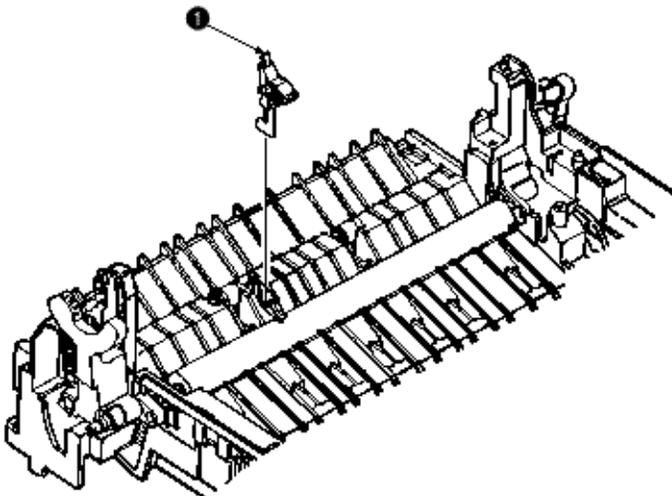
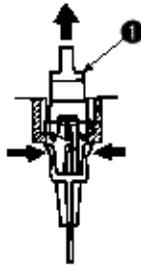
-
- (1) Remove the fusing unit assy (see 3.3.15).
 - (2) Lift the left side of the back-up roller (1), and pull it out to the left side (at this time, two bushings (back-up) (2) and the bias springs (back-up) (3) will also come off).



-
- (1) Remove the upper cover assy (see 3.3.1).
 - (2) Remove the operator panel assy (see 3.3.4).
 - (3) Remove the face up stacker assy (see 3.3.8).
 - (4) Remove the lower base unit (see 3.3.5).
 - (5) Press the clamps of three sensor plates (inlet and paper) (1), and remove them by pressing them upward from the bottom.



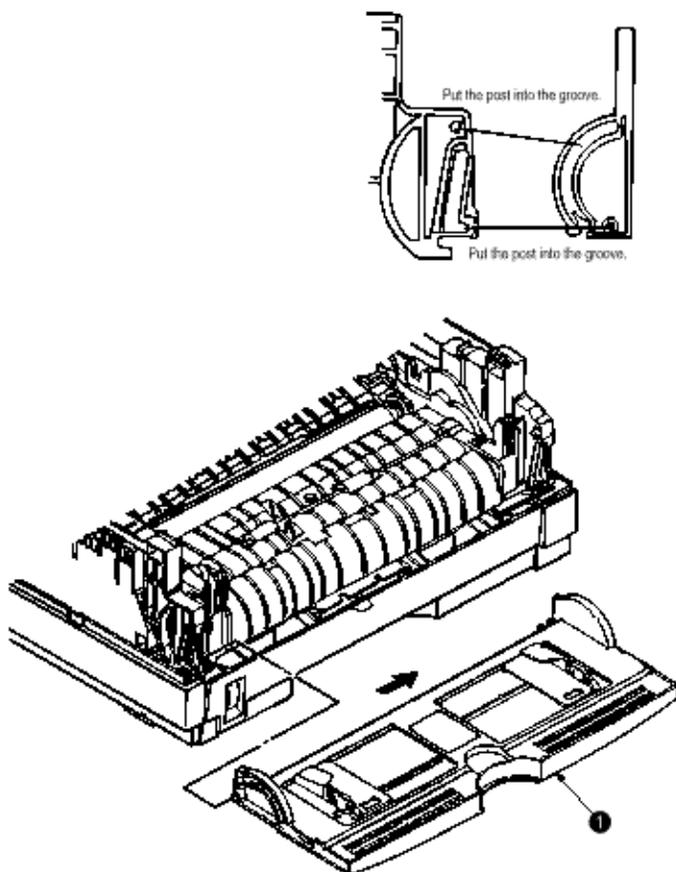
-
- (1) Remove the upper cover assy (see 3.3.1).
 - (2) Remove the operator panel assy (see 3.3.4).
 - (3) Remove the eject roller assy (see 3.3.9).
 - (4) Remove the face up stacker assy (see 3.3.8).
 - (5) Remove the lower base unit (see 3.3.5).
 - (6) Remove the fusing unit assy (see 3.3.15).
 - (7) Press the clamps of the sensor plate (outlet) (1), and remove the sensor plate by pushing it up.



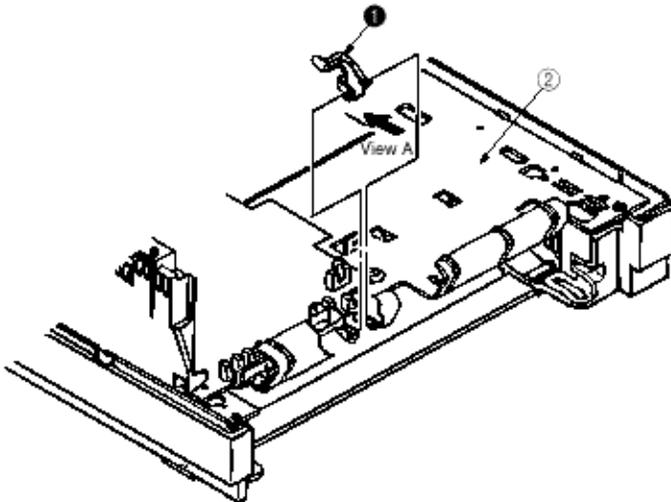
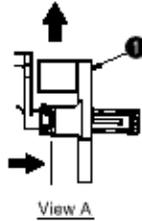
(1) Remove the upper cover assy (see 3.3.1).

(2) Open the manual feed guide assy (1), and release the engagement on both sides with the main unit by carefully bending the manual feed guide assy (1).

Note: When remounting, verify the proper the engagements as shown in the diagram.

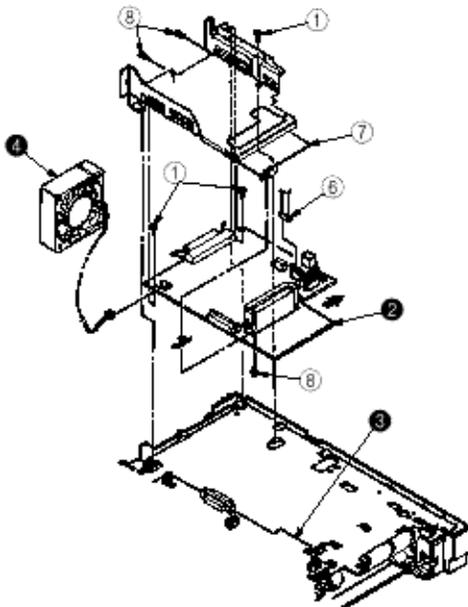


-
- (1) Remove the upper cover assy (see 3.3.1).
 - (2) Remove the operator panel assy (see 3.3.4).
 - (3) Remove the face up stacker assy (see 3.3.8).
 - (4) Remove the lower base unit (see 3.3.5).
 - (5) Press the clamps of the sensor plate (paper supply) (1) to unlock the latch, and remove it from the base plate (2).



-
- (1) Remove the upper cover assy (see 3.3.1).
 - (2) Remove the operator panel assy (see 3.3.4).
 - (3) Remove the face up stacker assy (see 3.3.8).
 - (4) Remove the lower base unit (see 3.3.5).
 - (5) Remove the connector (2NDTRAY) (6).
 - (6) Remove three screws (1).
 - (7) Move the M5B-PCB (2) in the direction of arrow to disconnect it from the power supply/sensor board (3).
 - (8) Remove the connector FAN, and disconnect the fan motor (4).
 - (9) Remove the M5B-PCB (2), together with the PCB guide plate (remove the fan motor (4) at the same time).
 - (10) Remove three screws (8) and remove the PCB guide plate (7) from the M5B-PCB (2).

Note: When reinstalling the M5B-PCB (2) onto the guide plate (7), be careful not to bend the base plate (it is desirable to place a block underneath it to prevent bending).



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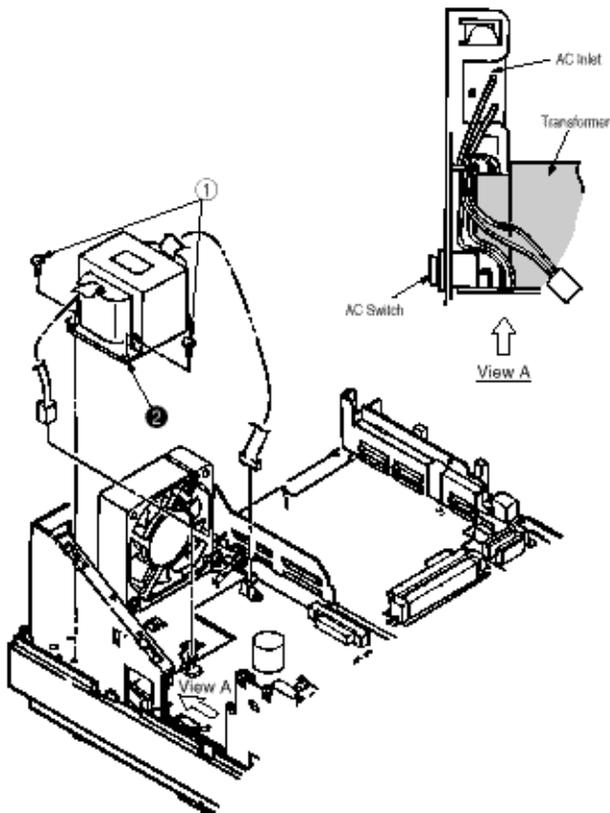


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Chapter 3 Parts Replacement

- 1) Remove the upper cover assy (see 3.3.1).
- (2) Remove the operator panel assy (see 3.3.4).
- (3) Remove the face up stacker assy (see 3.3.8).
- (4) Remove the connectors (CN1 and CN2).
- (5) Remove two screws (1), and remove the transformer (2).

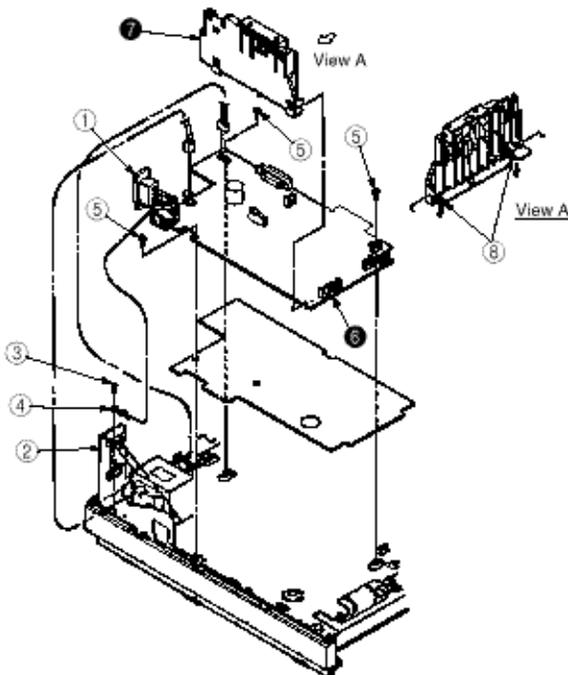
Note: When reinstalling the transformer, be sure to lay the AC and transformer's primary side cables under the divider (see view A diagram below).



- (1) Remove the upper cover assy (see 3.3.1).
- (2) Remove the lower base unit (see 3.3.5).
- (3) Remove the M5B-PCB (see 3.3.21).
- (4) Remove the transformer (see 3.3.22).
- (5) Remove the AC inlet (1) from the base plate (2).
- (6) Remove the screw (3) and remove the grounding (earth) wire (4).
- (7) Remove three screws (5), and remove the power supply/sensor board (6) and contact assy (7) together.
- (8) Unlock two latches (8), and remove contact assy (7) from the power supply/sensor board (6).

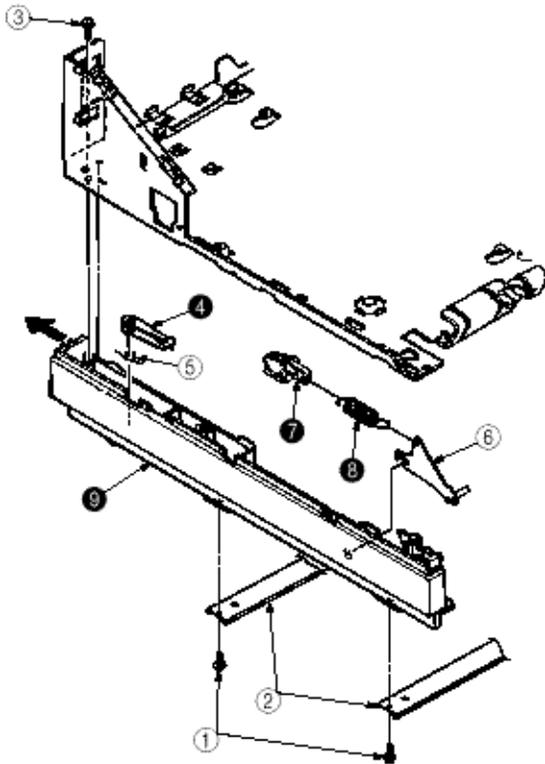
Notes:

1. Be careful about the sensor (paper supply) when reinstalling the lower base.
2. Make sure that no excessive force is applied to the power supply switch.
3. When installing the power supply/sensor onto the base plate, be careful not to bend the base plate (it is desirable to place a block underneath it to prevent bending).



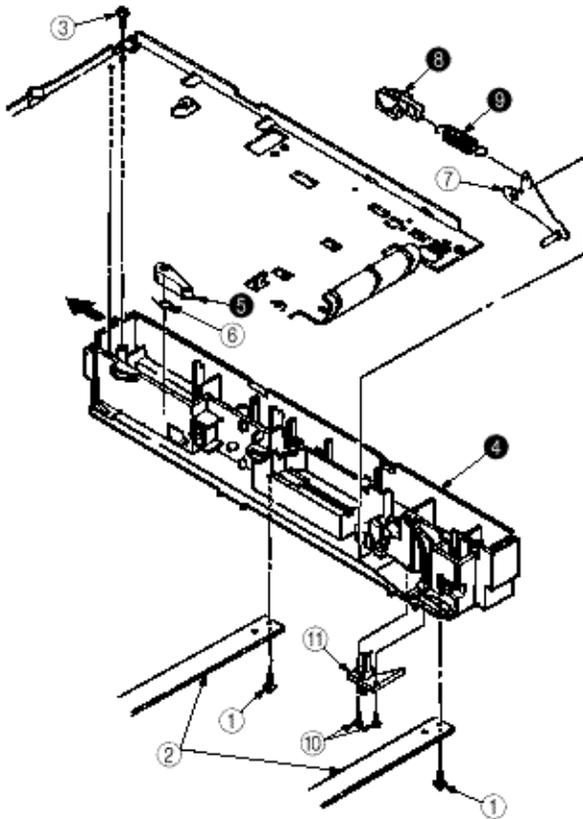
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-
- (1) Remove the paper cassette.
 - (2) Remove the upper cover assy (see 3.3.1).
 - (3) Remove the lower base unit (see 3.3.5).
 - (4) Remove the M5B-PCB (see 3.3.21).
 - (5) Remove the transformer (see 3.3.22).
 - (6) Remove the power supply/sensor board (see 3.3.23).
 - (7) Remove two screws (1), and remove the guide rails (2).
 - (8) Remove the screw (3), and remove the cassette guide L (9) by shifting it in the direction of the arrow as shown below.
 - (9) Remove cassette lock lever (4) and torsion spring (5).
 - (10) Remove cassette lock lever spring (8) then remove the sheet link (L) (6) and Pull block (7).



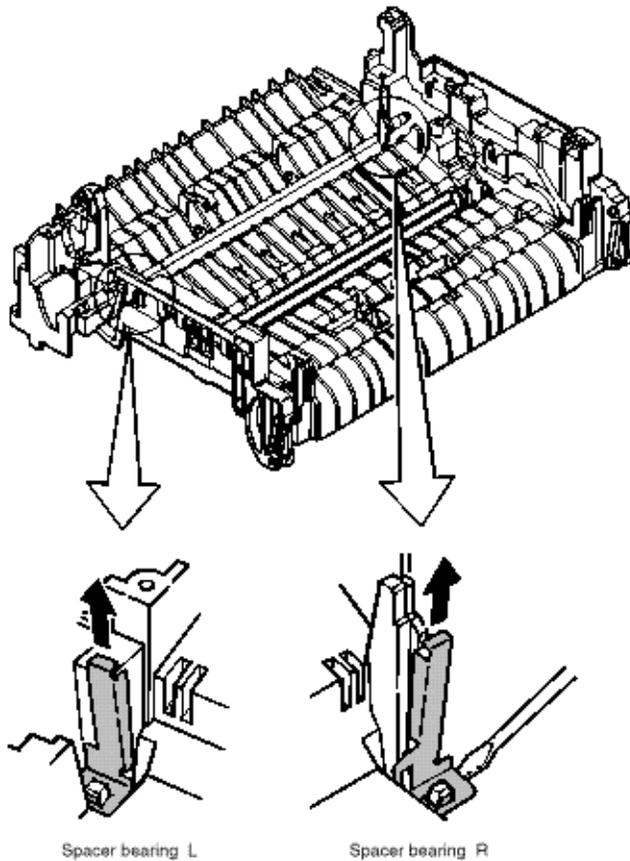
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- (1) Remove the paper cassette.
- (2) Remove the upper cover assy (see 3.3.1).
- (3) Remove the lower base unit (see 3.3.5).
- (4) Remove the M5B-PCB (see 3.3.21).
- (5) Remove two screws (1), and remove the guide rails (2).
- (6) Remove the screw (3), and remove the cassette guide R (4) by shifting it in the direction of arrow.
- (7) Remove the cassette lock lever (5) and torsion spring (6).
- (8) Remove the cassette lock lever spring (9), then remove the sheet link (R) (7) and link pull block (8).
- (9) Remove two screws (10), and remove the square-shaped connector (11).



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-
- (1) Remove the back-up roller (see 3.3.16).
 - (2) Remove spacer bearing (L/R) with a tip of screw driver.





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Chapter 4 Adjustment

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This chapter provides explanations concerning the adjustment necessary when replacing a part. The adjustment is made by changing the parameter value set in EEPROM on the main control board. The parameter can be set by the key operation from the operator panel. This printer has three kinds of maintenance modes, and it is necessary to select one of the modes when replacing any parts.

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4.1.1 User Maintenance Mode

4.1.2 System Maintenance Mode

4.1.3 Engine Maintenance Mode

4.1.4 EEPROM Initialization

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To enter into the user maintenance mode, turn the POWER switch on while holding the MENU key down.

Function

There are five functions as follows:

- Hex dump
- Drum counter reset
- Menu reset
- Operator panel menu disable
- X-adjust / Y-adjust

Detailed descriptions of these functions are provided in Appendix D, **DIAGNOSTICS TEST**.

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Note: This mode is used only by maintenance personnel and it should not be released to the end-users.

To enter into the system maintenance mode, turn the POWER switch on while holding the

Recover key down.

Function

There are six functions as follows:

- Page count display
- Loop test
- Page count printing enable/disable
- EEPROM reset
- Rolling ASCII continues printing

Detailed descriptions of these functions are provided in Appendix D, **DIAGNOSTICS TEST**.

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Chapter 4 Adjustment

Note: This mode is used only by maintenance personnel, and it should not be released to the end users.

(1) To enter into the engine maintenance mode, turn the power on while holding ENTER and FORM FEED keys down.

(2) Functions of this mode are selected by the menu.

(3) The way to exit out of this mode varies depending on the settings.

(4) There are following engine maintenance modes:

a) Head drive time setting. Sets the drive time of the LED head.

b) Head width setting. Sets the width of the LED head (39 or 40 chips).

c) Printing start position setting. Sets the starting position of printing.

d) Drum count total display. The total image drum rotation count of the printer, as counted by the engine section, is displayed on the LCD.

e) Drum count display. The total image drum rotation count, as counted by the engine section, is displayed on the LCD.

f) Standard tray paper feeding quantity setting. Sets the amount of paper to be fed from the standard tray.

g) High Capacity Second Paper Feeder paper feeding quantity setting. Sets the amount of paper to be fed from High Capacity Second Paper Feeder.

h) High Capacity Second Paper Feeder downloading table selection. Selects the downloading table of High Capacity Second Paper Feeder.

i) Power Envelope Feeder paper feeding quantity setting. Sets the amount of paper to be fed from Power Envelope Feeder.

j) Power Envelope Feeder downloading table selection. Selects the downloading table of Power Envelope Feeder.

k) Engine Reset. All EEPROM areas used by the engine section are reset to factory default values.

The followings, however, are not reset:

- Menu Level-1
- Menu Level-2
- Operator Panel Menu Disable/Enable

- LED HEAD No.
- LED HEAD WID
- Page Print Disable/Enable

After reset, the printer returns to normal operating mode.

Note: "Printing start position setting" is for shipping. Do not change its default value.

Detailed descriptions of these functions are provided in Appendix D, **DIAGNOSTICS TEST**.

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Chapter 4 Adjustment

The corresponding area of the EEPROM is initialized for each event as shown in Table 4-1.

Table 4-1

EEPROM area Event	Menu level 1	Menu level 2	Firmware revision area	Information for destination (Factory default)	Engine area	Drum counter	Page counter	XY adjust	LED head drive time	Remarks
Menu resetting for user maintenance	<input type="checkbox"/>									
EEPROM resetting for system maintenance	<input type="checkbox"/>	<input type="checkbox"/>								
Engine resetting for engine maintenance					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Firmware revision check error LCD display: EEPROM RESETTING	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>		This initialization occurs when the existing ROM is replaced by a ROM whose revision No. is different from the existing ROM.
Engine revision error LCD display: ENGINE RESET					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	This initialization occurs when a new EEPROM is mounted.
Engine ID error LCD display: ENGINE RESET					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	
Setting of data for destination	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>				<input type="checkbox"/>		
User information error LCD display: EEPROM RESETTING	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>				<input type="checkbox"/>		This resetting occurs when an irregular user information is detected.

Represents initialization



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Chapter 4 Adjustment

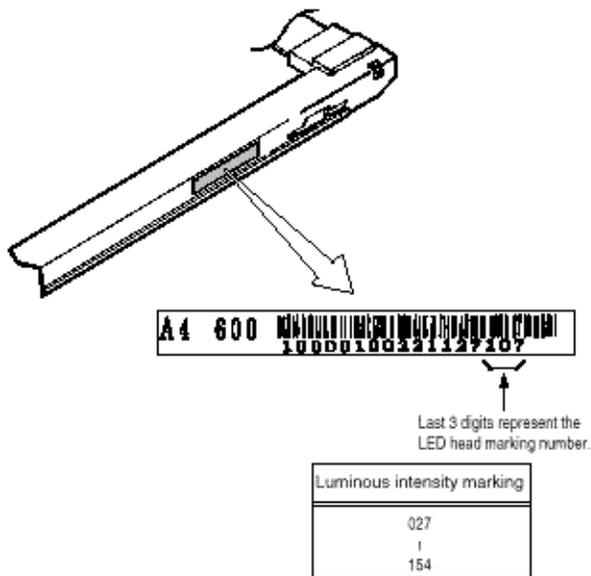
Adjust is necessary when replacing any of the following parts.

Part Replaced	Adjustment
LED Head	Set the LED head drive time.
Image Drum Cartridge	Reset the image drum counter (refer to User's manual)
Main Control Board	EEPROM data Upload / Download

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Note: When the luminous intensity marking of the replacement LED head (new part) is same as that of the removed LED head (old part), do not reset the LED head drive time.

- Luminous Intensity Marking Label



- Setting of LED Head Drive Time

Drive time of the LED head is set by setting the parameter of drive time of EEPROM according to the luminous intensity marking on the LED head.

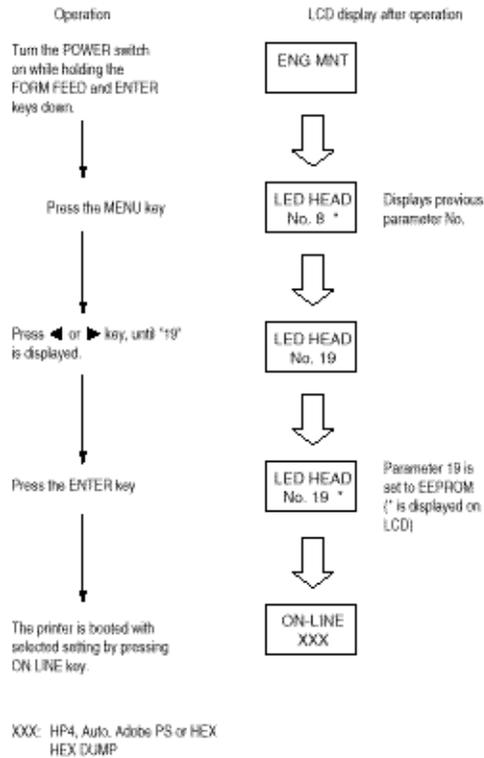
- Corresponding table of luminous intensity marking and drive time parameter

Luminous intensity marking on LED head	Drive time parameter	Luminous intensity marking on LED head	Drive time parameter
027-028	27	065-069	14
029-030	26	070-073	13
031-032	25	074-079	12
033-035	24	080-084	11
036-037	23	085-090	10
038-040	22	091-096	9
041-043	21	097-103	8
044-046	20	104-110	7
047-049	19	111-118	6
050-052	18	119-126	5
053-057	17	127-135	4

058-060	16	136-144	3
061-064	15	145-154	2

b. Setting

Example: Method for setting the parameter to 19 (for a case where the previous parameter setting was 8).



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Chapter 4 Adjustment

When the controller printed circuit board is replaced, the contents of the old EEPROM shall be copied to the new EEPROM on the new board to preserve customer settings. For the purpose, use the EEPROM operation on the Option of the Maintenance Utility. To copy follow the steps below.

- (1) Be sure to confirm that the printer and the PC are connected with a centronics I/F cable. Then execute the Maintenance Utility. (Note: Printer Status Monitor shall be deinstalled.)
- (2) Select the Option on the Maintenance Utility.
- (3) Click the "UPLOAD EEPROM" button on the "EEPROM Operations".
- (4) The contents of the EEPROM data is displayed on the "DIALOG" of the Maintenance Utility. The contents of the old EEPROM is now copied into the memory of the PC.
- (5) Replace the controller P.C.B. with a new one while it displays the above "DIALOG".
- (6) After the replacement, click "Download EEPROM" on the "EEPROM Operations". EEPROM upload has been completed.

In case of troubles such as centronics I/F failure, etc. EEPROM data may not be uploaded properly. In such case, it is necessary to adjust the following settings manually after the replacement using the Maintenance Utility.

- LED driver time (See 4.2.1)
- Factory setting (ODA/OEL/INT-A/INT-L)

The maintenance utility is designed to be used only by field engineer and it should not be released to the end-users.



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Chapter 5 Periodical Maintenance

The parts are to be replaced periodically as specified below.

Part name	Condition for replacement	Cleaning	Remarks
Toner cartridge (Type 5)	About 2,000 sheets of paper have been printed.	LED head	Consumables
Image drum cartridge (Type 5)	About 20,000 sheets of paper have been printed. See 1.4 (14)		Consumables

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Remove any toner or dust accumulated inside the printer. Clean in and around the printer with a piece of cloth when necessary. Use the handy cleaner (service tool) to clean inside the printer.

Note: Do not touch the image drum, LED lens array, or LED head connector block.

5.2.1 Cleaning of LED Lens Array

5.2.2 Cleaning Page Function

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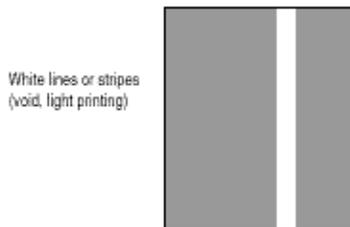


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Chapter 5 Periodical Maintenance

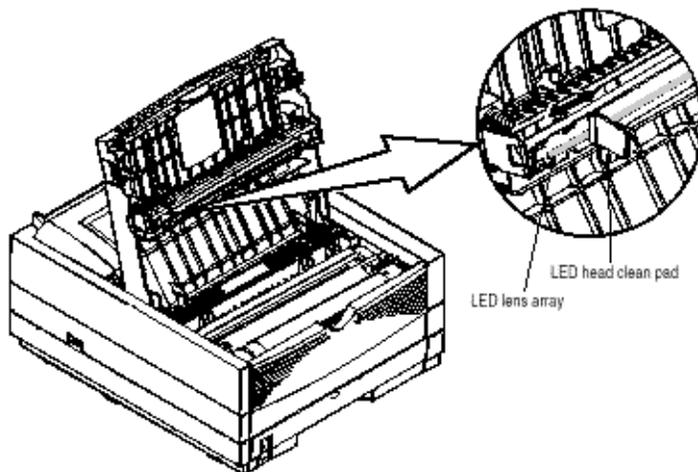
Clean the LED lens array or replace the toner cartridge when white lines or stripes (void, light printing) are generated vertically down the page, as shown below.

Note: The LED lens array must be cleaned with an LED head cleaner included in the replacement toner kit.



(1) Set the LED head cleaner to the LED lens array as shown in the figure, then slide the cleaner back and forth horizontally.

Note: Gently press the LED head cleaner onto the LED lens array.



(2) Throw the cleaner pad away.



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Chapter 5 Periodical Maintenance

There is a charge roller cleaning function with this printer, which can be executed by the user.

(1) While the printer is in off-line mode, press both ◀ and ▶ keys simultaneously for at least 2 seconds. The printer enters the cleaning mode.

(2) The LCD displays "CLEANING" on the upper line, and on the lower line, "MANUAL LETTER REQUEST" is displayed, scrolling one character width at a time from right to left. "LETTER" on the lower line may instead be "A4" depending on the printer designation. While the lower line scrolls the message, the message on the upper line remains fixed in place.

When the above messages appear on the LCD, the user can verify that the printer has entered the cleaning mode and that it is requesting insertion of a letter (or A4) size paper into the manual feederslot.

(3) Insert a sheet of paper into the manual feeder slot.

(4) Toner attached to the image drum is transferred onto the inserted sheet, and the sheet is ejected with the toner residues printed. While this process is going on, the LCD displays "PRINT CLEANING" message.

(5) The printer returns to off-line mode.

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-
- (1) Check the troubleshooting section in the Printer Handbook.
 - (2) Gather as much information about the situation as possible.
 - (3) Inspect the equipment under the conditions close to those in which the problem had occurred.
-

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-
- (1) Is the printer being run in proper ambient conditions?
 - (2) Are supplies (toner) and routine replacement part (image drum cartridge) being replaced properly?
 - (3) Is the printing paper normal (acceptable quality)?
 - (4) Is the image drum cartridge being loaded properly?
-

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-
- (1) Do not touch, or bring foreign matter into contact with the surface of the image drum.
 - (2) Do not expose the image drum to direct sunlight.
 - (3) Keep hands off the fuser unit as it heats up during operation.
 - (4) Do not expose the image drum to light for longer than 5 minutes at room temperature.
-

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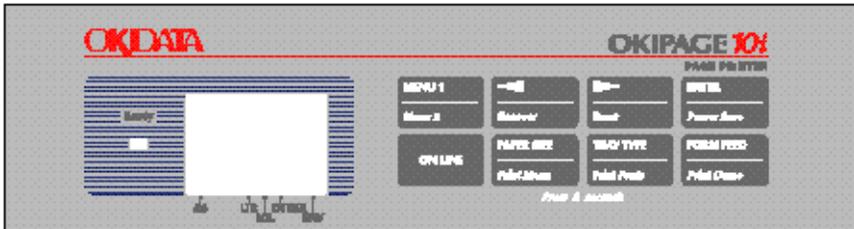
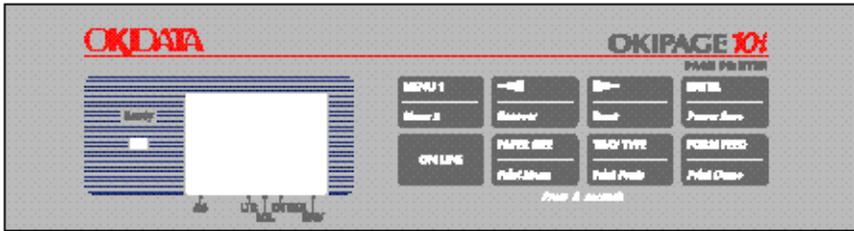


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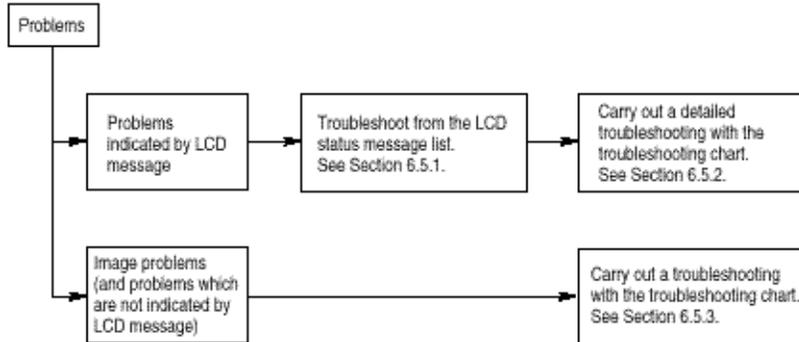
(1) Operator panel display

The failure status of the printer is displayed by the liquid crystal display (LCD) of the operator panel. Take proper corrective action as directed by messages which are being displayed on the LCD.



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Should there be a problem with the printer, carry out troubleshooting according to the following procedure flow:



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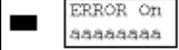
The status and problems which may be displayed by messages on the LCD are listed in Table 6-1.

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Chapter 6 Troubleshooting Procedures

Category	LCD status message	Problem or status		Remedy
Controller errors		An error occurred in the controller. n = Exception Code aaaaaaa = Error Address		- Normal operation cannot be ensured. Turn the power off, then back on to restart.
		Code (nn)	Error	
		1-3 D-F	Reserved	- If normal operation is not recovered by this restart procedure, replace the main control board.
		4	Address Error Exception (Load command, command fetch)	
		5	Address Error Exception (Store command)	
		6	Bus Error Exception (command fetch)	
		7	Bus Error Exception (Load command, store command)	
		8	System Call Extension	
		9	Brake Point Exception	
		A	Reserved Instruction Exception	
		B	Coprocessor Unusable Exception	
		C	Arithmetic Overflow Exception	



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Category	LCD status message	Problem or status		Remedy
Controller errors		An error occurred in the controller.		<ul style="list-style-type: none"> - Turn the power off, then back on to recover from the error. - If normal operation is not recovered by this restart procedure, use the following remedial actions.
		Code (nn)	Error	
		On	A failure occurred in the controller. n = Exception Code	Replace the main control board.
		10	An error was detected by program ROM check.	Replace the main control board.
		20	An error was detected by font ROM check.	Replace the main control board.
		30	An error was detected by resident RAM check.	Replace the main control board.
		40	An error was detected by EEPROM check.	Replace the EEPROM or main control board.
		50	An error was detected by optional software ROM check.	Check the optional software ROM board for proper connection or replace it.
		52	PS only can't happen.	
		53	PS only undefined sys call.	
		60	An error was detected by program ROM check.	<ul style="list-style-type: none"> -Check the optional RAM board for proper connection. -Check the mounting position of short plugs and additional RAM chips (see Section 7.4). -Replace the optional RAM board.
		70	An error was detected by program ROM check.	<ul style="list-style-type: none"> -Check the fan motor for proper connection and for any presence of foreign matter in the fan (see Section 6.5-2-(6)). -Replace the fan or the main control board.

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Category	LCD status message	Problem or status		Remedy
Controller errors		Code (nn)	Error	
		71	A failure occurred with the fuser (timeout error etc).	See Section 6.5.2-(4).
		72	A failure occurred with the fuser (thermistor open error).	See Section 6.5.2-(4).
		73	A failure occurred with the fuser (thermistor short error).	See Section 6.5.2-(4).
		74	SSIO Error	<ul style="list-style-type: none"> - Check the connection between the main control board and the power supply/sensor board. - Replace the main control board or power supply/sensor board.
		77	A toner sensor fault has occurred when the TOTAL DRUM COUNT is 30 or less.	<ul style="list-style-type: none"> - Check the installing of image drum unit. - Replace the power supply/sensor board.
		80	I/F timeout occurred between the main control board and the operator panel.	<ul style="list-style-type: none"> - Check the operator panel for proper connection. - Replace the flexible cable, operator panel or main control board.
		81		See Section 6.5.2-(5).
		90		<ul style="list-style-type: none"> - Turn the power off, then back on again. - Replace the main control board.
		91		
		F0		
		F1		<ul style="list-style-type: none"> Note: When replaced the main control board, be sure to install the EEPROM from the old board to the new board.



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Category	LCD status message	Problem or status		Remedy
Controller errors		Code (nn)	Error	
		F2	Optional Timeout error	<ul style="list-style-type: none"> - Turn the power off, then back on again. - Replace the main control board. Note: When replaced the main control board, be sure to install the EEPROM from the old board onto the new board.
		F3	Optional status error	<ul style="list-style-type: none"> - Turn the power off, then back on again. - Repair or replace the defective front feeder paper sensor cable and 2-pin connector on the main control board or reconnect the connectors. - Replace the main control board.
		F4	BG program error	<ul style="list-style-type: none"> - Turn the power off, then back on again. - Replace the main control board.
		F5	System timer program error. Defect in the cable of the front feeder paper sensor and the 2-pin connector on the main control board. Poor connection of connectors.	
		F6	IPT2 program error	
		F7	IPT1 program error	

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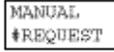
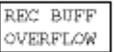
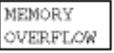
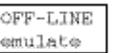
Category	LCD status message	Problem or status	Remedy
Jam errors		<p>A jam occurred during paper hopping from the tray.</p> <p>tray : TRAY1, TRAY2, FEEDER, MANUAL</p>	<ul style="list-style-type: none"> - Check the paper in the cassette. Open and then close the cover. When the cover is closed recovery printing is performed and the error display is released. - If this error occurs frequently, see Section 6.5.2 (2)-1.
		<p>A jam occurred during paper feeding after completion of paper hopping from the tray.</p> <p>tray : TRAY1, TRAY2, FEEDER, MANUAL</p>	<ul style="list-style-type: none"> - Open the cover, remove the paper, then close the cover. When the cover is closed, recovery printing is performed and the error display is released. - If this error occurs frequently, see Section 6.5.2 (2)-2.
		<p>tray : TRAY1, TRAY2, FEEDER, MANUAL</p>	<ul style="list-style-type: none"> - Open the cover, remove the paper, then close the cover. When the cover is closed, recovery printing is performed and the error display is released. - If this error occurs frequently, see Section 6.5.2 (2)-3.
Paper size error		<p>Paper of improper size is being feed from the tray.</p> <p>tray : TRAY1, TRAY2, FEEDER, MANUAL</p>	<ul style="list-style-type: none"> - Check the paper in the tray or check to see if more than one sheet of paper were being fed simultaneously. - Set the designated paper in the tray. - Open the cover, then close it to perform recovery printing and release the error display. - If this occurs frequently, see Section 6.5.2 (3).

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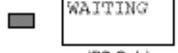
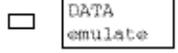
Category	LCD status message	Problem or status	Remedy
Size error (continued)	■ 	Manual loading of paper indicated by the first line message is requested. The paper size is one of the following: LETTER, EXECUTV LEGAL 14, LEGAL 13, A4 SIZE, A5 SIZE, A6 SIZE, B5 SIZE, FREE SIZE, COM-10, MONARCH, DL ENV, C5 ENV	Load the requested paper in the manual tray.
Buffer overflow	■ 	The receive buffer is overflowing.	- Press the operator panel <i>RECOVER</i> key on the operator panel to release the error display. - Change the setting of the host or printer so that the host can detect the busy status of the printer. Resend the data from the host to the printer. - Replace the interface cable
	■ 	The page buffer is overflowing because it received too much data for printing on the page. Macro buffer is overflowing. The DLL buffer is overflowing.	- Press the <i>RECOVER</i> key to release the error display. - Install additional optional RAM board or reduce the print data.
	■ 	The printer overrun because the print data is too complicated to be printed.	- Press the <i>RECOVER</i> key on the operator panel to release the error display. - Simplify page data formatting.
Daily status	■ 	The printer is in the off-line mode. The second line indicates the emulation. emulate: AUTO, PCL, PPR, FX, AdobePS, HEX	Normal operation.
	■ 	The printer is processing data.	

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Category	LCD status message	Problem or status	Remedy
Daily status	 (PS only)	PostScript mode only. The printer is in the middle of a job and wait for data to be processed.	Normal operation.
		The printer is printing a page.	
		The printer is processing data in the on-line mode. Ready ON: The data that is not printed remains in the buffer. Ready flashing: The printer is receiving data or in printing process. emulate: AUTO, PCL, PPR, FX, AdobePS, HEX	
		All fonts of the printers are being printed during self-test.	
		The current menu setting is being printed. Ready ON: Executed by command entry. Ready flashing: Executed by key operation.	
		Message displayed when the power is turned on. When the power is turned on, the LEDs are turned on for approximately 1 second, conducting a test to verify the conditions of the LEDs and LCD.	
	Message displayed to indicate that the controller is undergoing an initialization when the power is turned on. This message is displayed after the turning on of the LEDs as described above.		



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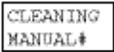
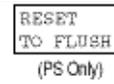
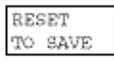
Chapter 6 Troubleshooting Procedures

Category	LCD status message	Problem or status	Remedy
Daily status		Message displayed to indicate that in order reflect the changes in the menu to the editing environment, RESET must be executed. This message is displayed when the printer is unable to conduct automatic reset due to the existence of temporary attributes such as DLL/Macro/user Pattern/user Symbol Set.	Normal operation.
		Indicates data is downloading to flash memory.	
		Indicates that an error occurred during downloading to flash memory.	
		The demo page is being printed. Ready LED on: Executed by command entry. Ready LED blinking: Executed by key operation.	
		When the number of copies being printed is two or more, the number of copies being printed is displayed. This message is displayed together with another message on the first line. nnn: Current page mmm: Total page	
		PostScript mode only. This message is displayed when ON LINE key is pressed while the printer is processing a job, if the JOB RESET in menu is off, the printer goes off-line after completing the job.	
		This message is displayed when the printer is performing the cleaning print.	



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Category	LCD status message	Problem or status	Remedy
Daily status	■ 	Manual loading of paper indicated by the second line message is being requested for cleaning. The paper size(#) may be one of the following: # : LETTER REQUEST, A4 SIZE REQUEST	Normal operation.
	■ 	PostScript mode only. This message is displayed when ON LINE key is pressed while the printer is processing a job, if the JOB RESET in menu is on. Even while this message is being displayed, the printer continues to process the job normally.	- Press ON-LINE key again. The printer goes back to on-line mode and continues to process the job. - Press Reset key. The job is canceled.
	■ 	PostScript mode only. This message is displayed during canceling of a job. The message goes off when the job cancellation is completed.	Normal operation.
	■ 	The data which remained unprinted in the buffer is deleted and the printer is initialized to user default settings. The temporary DLLs, macros and user pattern are deleted.	
	■ 	This message is displayed when the printer cannot reset automatically to exit from the menu because there are date and DLL's and macros having temporary attributes, when the printer is changed from set mode to another mode.	
	□ 	Toner is running out. This message is displayed together with another message on the first line. Normal operation can be continued.	Replace the toner cartridge.
	□ 	A fault occurred with the toner sensor. This message is displayed together with another message on the first line. Normal operation can be continued.	Replace the power supply/sensor board.



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Category	LCD status message	Problem or status	Remedy
Daily status	<input type="checkbox"/> TONEREMP	Displays that the amount of toner is near empty (this status will appear after 100 sheets from a TONER LOW indication). It is indicated by being combined with other messages in the first line. Normal operation can be continued.	
	<input type="checkbox"/> TONEREMP CHG CART	Displays that the amount of toner is near empty. After 100 sheets from a TONER LOW indication, this status will appear and printing will stop. If pressing ON-LINE SW, other 31 sheets can be printed and stopped. And from the next time on, the printing is stopped each sheet.	
	<input type="checkbox"/> CHG DRUM	This message is displayed together with another message on the first line. Normal operation can be continued.	<ul style="list-style-type: none"> - Replace the image drum cartridge. - After replacing the drum cartridge, reset the drum counter (refer to the Printer Handbook).
	<input type="checkbox"/> NO PS	Unavailable printer language was designated by PJJ command (warning).	<ul style="list-style-type: none"> - To clear, press <i>RECOVER</i> key when "CLEARABLE WARNINGS=ON" is selected in the menu. - check the host program.
	<input type="checkbox"/> PWR SAVE	The printer is in the power-saving mode. This message is displayed together with another message on the first line.	Normal operation.
	<input checked="" type="checkbox"/> ERROR PS AdobePS (PS Only)	PostScript mode only This message appears when the interpreter detects an error while a job is being processed. The remainder of the job is ignored.	<ul style="list-style-type: none"> - Check the printer setting of the host. - Check the printer job data to see if there is any unsupported or illegal operation in the data.



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If the problems cannot be corrected by using the LCD status message/problem list, follow the troubleshooting flowcharts given here.

No.	Trouble	Flowchart number
1.	The printer does not work normally after the power is turned on.	(1)
2.	Jam alarm - Paper input jam - Paper feed jam - Paper exit jam	
3.	Paper size error	(3)
4.	Fusing unit error	(4)
5.	SSIO (Synchronous Serial Input/Output) error I/F timeout (no response) between the printer and an optional tray (High Capacity Second Paper Feeder, Power Envelope Feeder).	(5)
6.	Fan error	(6)

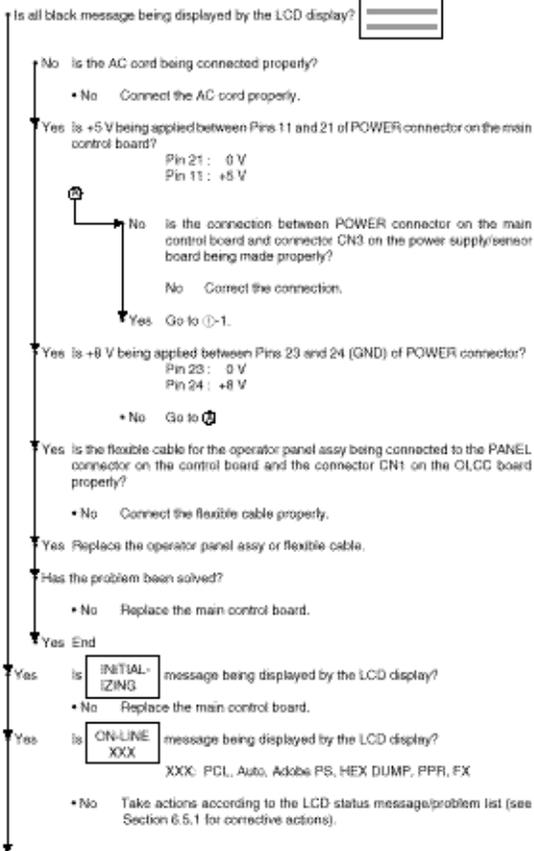
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• Turn the power off, then back on.



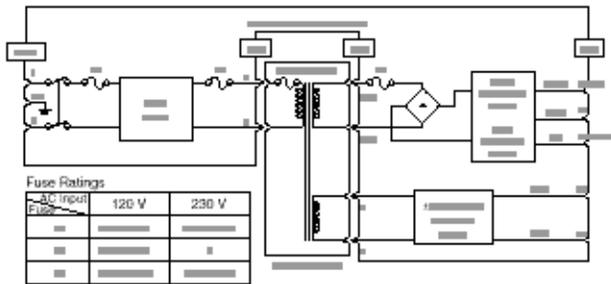
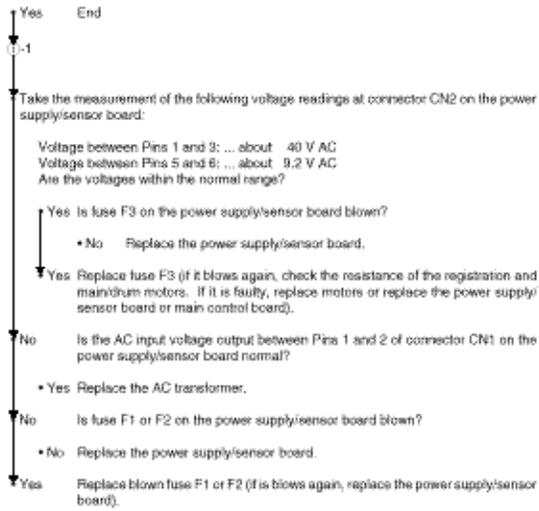
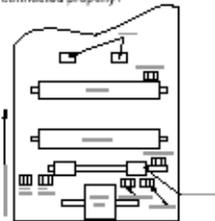
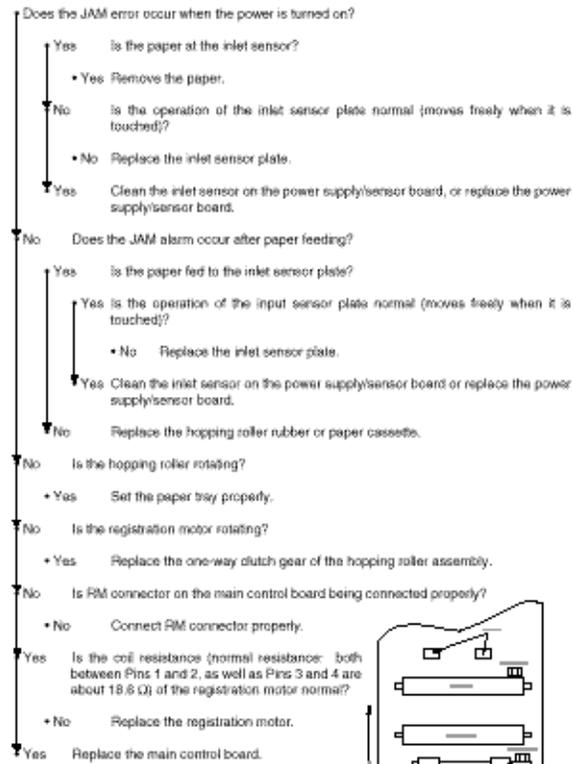


Figure E-1 Low-voltage Power Supply Block Diagram

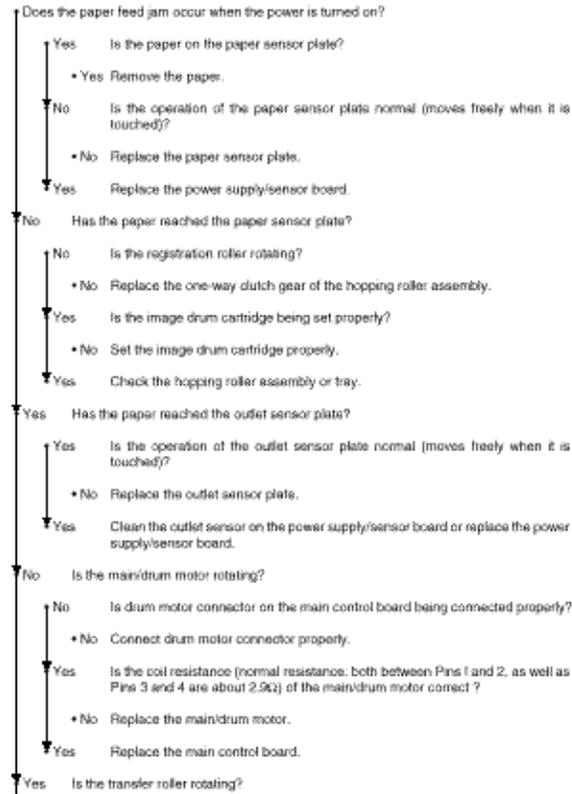
[JAM error]

②-1 Paper input jam

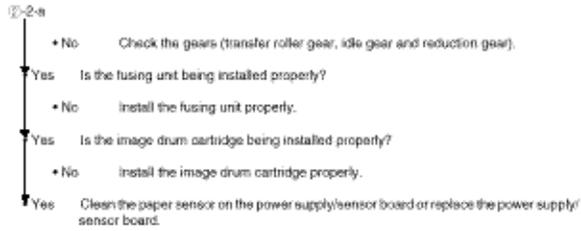


[JAM error]

②-2 Paper feed jam

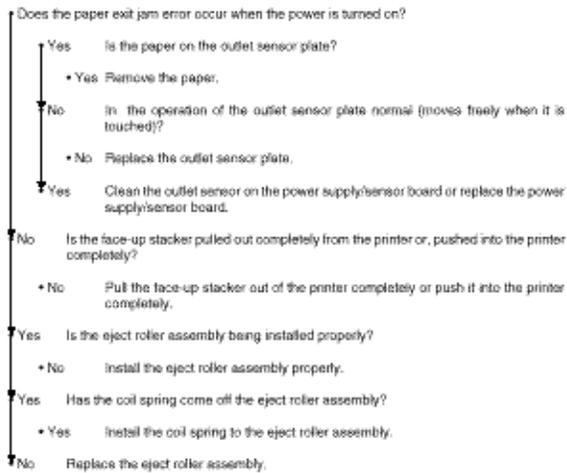


②-2-a



[JAM error]

②-3 Paper exit jam

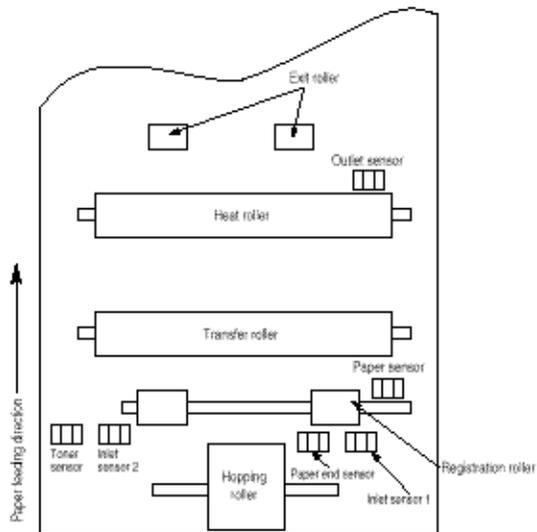




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- Is paper of the specified size being used?
- No Use paper of the specified size.
- Yes Are inlet sensor plates 1 and 2 operating properly (moves freely when they are touched)?
- No Replace the inlet sensor plate or clean the inlet sensor on the power supply/sensor board.
- Yes Does the outlet sensor plate operate properly (moves freely when it is touched)?
- No Replace the outlet sensor plate or clean the outlet sensor on the power supply/sensor board.
- Yes Replace the power supply/sensor board.



- Turn the power off, then back on again.
- Yes Is the thermistor open or shorted? Measure the resistance between thermistor contacts (heater contacts 120V/3Ω or 240V/10Ω, and thermistor contacts 220KΩ at room temperature) (see Fig. 6-2 or Section 7.3).

 - Yes Replace the fusing unit.
 - No Do the thermistor contacts touch the contact assembly properly when the fusing unit is mounted in the printer?

 - No Adjust the contacts of the contact assembly.
 - Yes Is the heater of the fusing unit turned on (when the heater is turned on, light is emitted)?

 - Yes Check the thermistor contacts or replace the main control board or the fusing unit.
 - No Is the AC voltage being supplied to the contacts for the heater of the contact assembly? (see Fig. 6-2)

 - No Replace the main control board or the power supply/sensor board.
 - Yes Check the heat contacts of the fusing unit and the contact assembly for poor contact (see Fig. 6-4 contact ③).

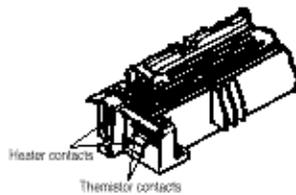


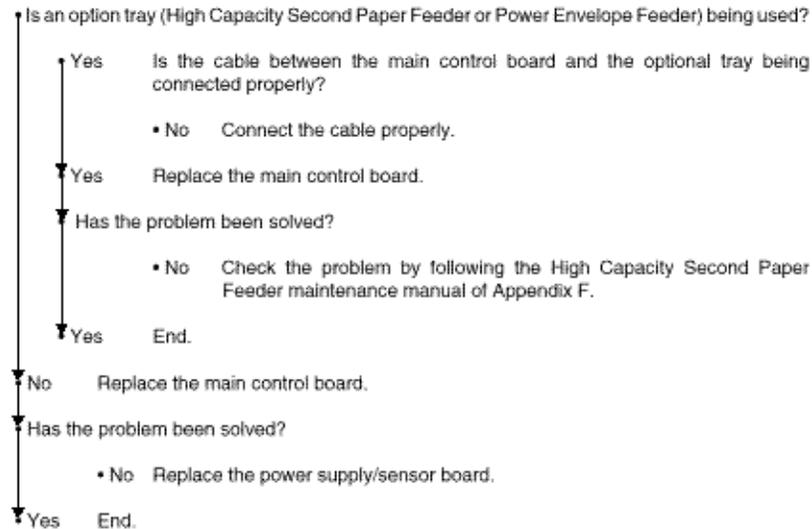
Fig. 6-2



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Chapter 6 Troubleshooting Procedures

6.5.2 (5) Synchronous serial I/O error (ERROR 74) or I/F timeout between printer and optional tray (ERROR 81)





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Is the fan rotating?

- Yes Replace the main control board.

No Is FAN connector on the main control board being connected properly?

- No Connect FAN connector properly.

Yes Replace the fan or main control board.

Procedures for troubleshooting for abnormal image printouts are explained below. Figure 6-3 below shows typical abnormal images.

Problem	Flowchart number
Images are light or blurred entirely (Figure 6-3 A)	(1)
Dark background density (Figure 6-3 B)	(2)
Blank paper is output (Figure 6-3 C)	(3)
Black vertical belts or stripes (Figure 6-3 D)	(4)
Cyclical defect (Figure 6-3 E)	(5)
Missing print	(6)
Poor fusing (images are blurred or peels off when the printed characters and images on the paper are touched by hand)	(7)
White vertical belts or streaks (Figure 6-3 F)	(8)



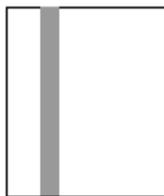
(A) Light or blurred images entirely



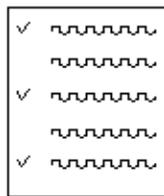
(B) Dark background density



(C) Blank paper



(D) Black vertical belts or stripes



(E) Cyclical defect

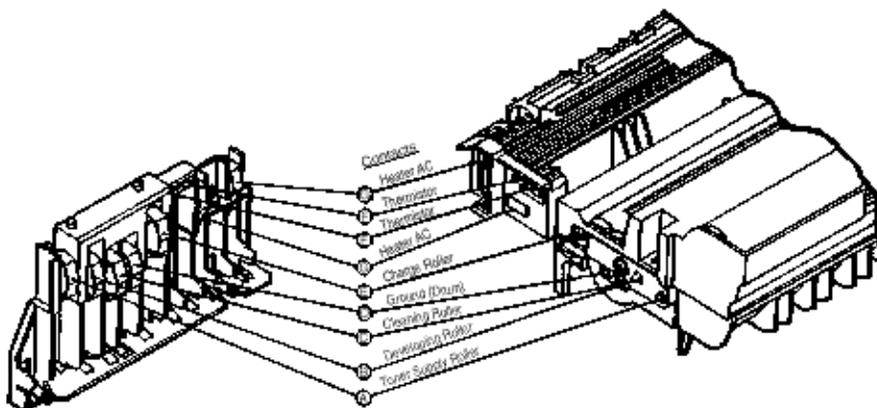
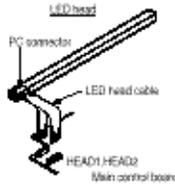


(F) White vertical belts or streaks

Figure 6-3

- Is toner low (is the TONER LOW message displayed)?
 - Yes Supply toner.
- No Is paper of the specified grade being used?
 - No Use paper of the specified grade.
- Yes Is the lens surface of the LED head dirty?
 - Yes Clean the lens.
- No Is the LED head being installed properly (check the HEAD1 and HEAD2 connectors of the main control board and PC connector on the LED head for proper connection)?
 - No Install the LED head properly.
- Yes Is the contact plate of the transfer roller in contact with the contact assembly of the power supply/sensor board properly (see Fig. 6-5)?
 - No Adjust the contact plate of the transfer roller to make a proper contact with the power supply/sensor board and shaft of the transfer roller.
- Yes Are the contact of the developing roller and the contact of the toner supply roller of the image drum cartridge in contact with the contact assembly properly (see Fig. 6-4 (a) and (b))/?
 - No Adjust the contacts of the developing and toner supply roller to make a proper contact with the contact assembly.
- Yes Replace the transfer roller.
- Has the problem been solved?
 - Yes End
- No Replace the image drum cartridge.
- Has the problem been solved?
 - Yes End

Note: After replacing the image drum cartridge, set the printer in the user maintenance mode by turning the power on while pressing the MENU key and reset the drum counter (see Printer Handbook).
- No Is the tension between the back-up roller (7.52kg) and the surface of back-up roller normal?
 - No Replace the back-up roller or bias spring.
- Yes Replace the main control board or power supply/sensor board.



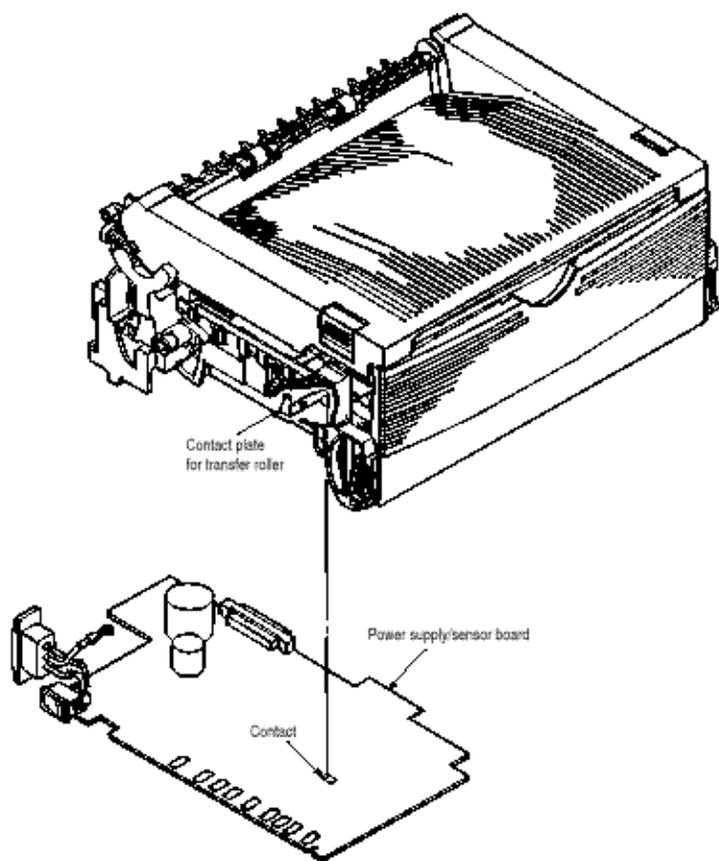


Figure 6-5

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- Has the image drum been exposed to external light?
- Yes Install the image drum in the printer and wait about 30 minutes.
- No Perform the cleaning page function (see Section 5.2.2).
- Has the problem been solved?
- Yes End.
- No Is the heat roller of the fusing unit dirty?
- Yes Clean the heat roller.
- No Is the contact of the cleaning roller of the image drum cartridge in contact with the contact assembly properly (see Fig. 6-4 )?
- No Adjust the contact of the cleaning roller to make a proper contact with the contact assembly.
- Yes Replace the image drum cartridge.
- Has the problem been solved?
- Yes End
- Note:** After replacing the image drum cartridge, set the printer to the user maintenance mode by turning the power on while pressing the MENU key, and reset the drum counter (see Printer Handbook).
- No Replace the main control board or power supply/sensor board.

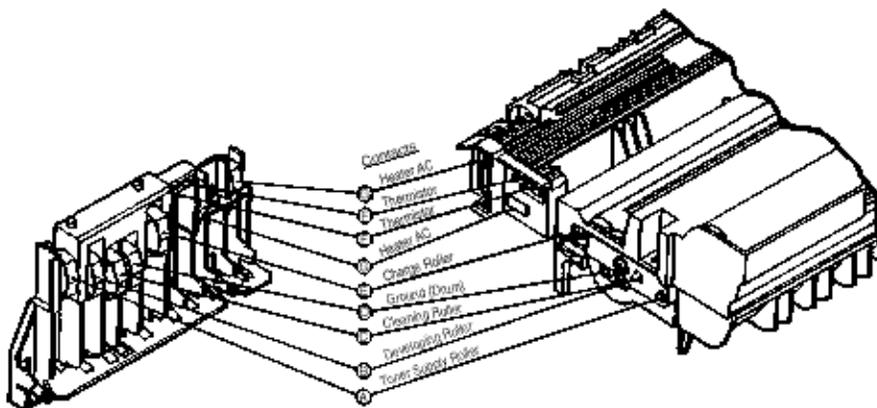


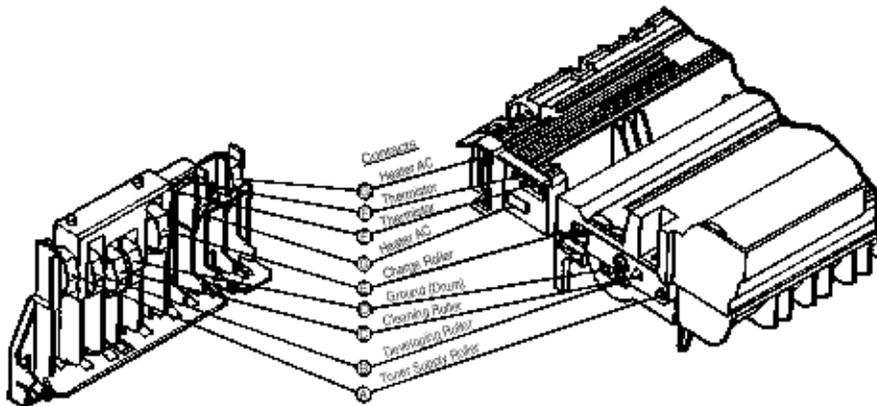
Figure 6-4



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Chapter 6 Troubleshooting Procedures

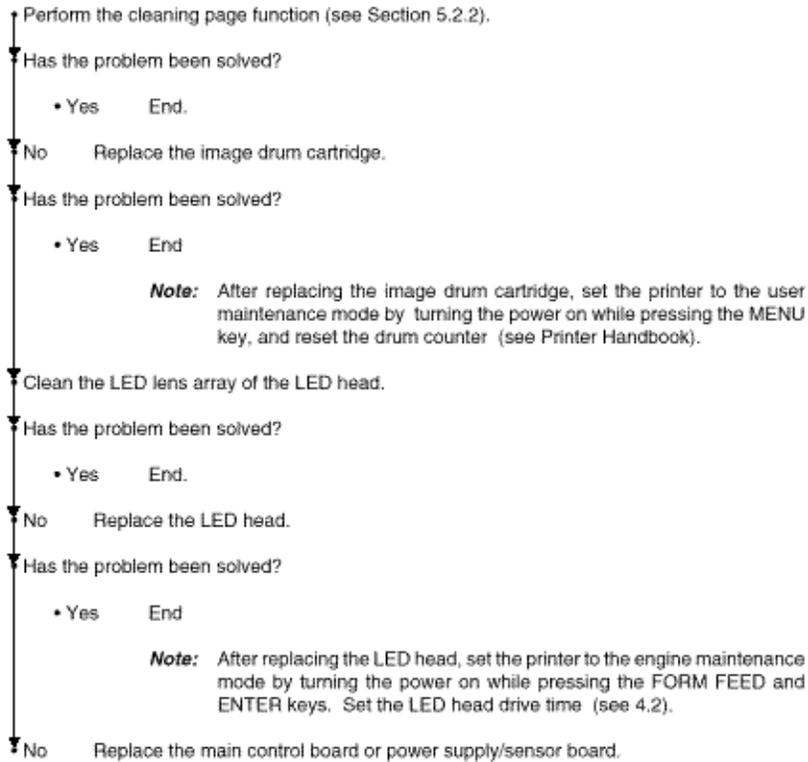
- Is the LED head being connected properly (check the HEAD1 and HEAD2 connectors on the main control board and PC connector on the LED head)?
- No Connect the LED head properly or replace the head cable(s).
- Yes Is the contact of the image drum cartridge in proper contact with the ground contact properly (see Fig. 6-4 ④)?
- No Adjust the ground contact (Drum) of the contact assembly.
- Yes Replace the LED head.
- Has the problem been solved?
- Yes End
- Note:** After replacing the LED head, set the printer to the engine maintenance mode by turning the power on while pressing the FORM FEED and ENTER keys. Set the LED head drive time (see 4.2).
- No Replace the main control board or power supply/sensor board.





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Chapter 6 Troubleshooting Procedures





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Chapter 6 Troubleshooting Procedures

	Frequency	Remedy
Image drum	3.71" (94.2mm)	Replace or clean the image drum cartridge.
Developing roller	1.86" (47.12mm)	Replace the image drum cartridge.
Toner supply roller	2.96" (75.27mm)	Replace the image drum cartridge.
Charging roller	1.21" (30.63mm)	Replace the image drum cartridge.
Cleaning roller	0.93" (23.56mm)	Replace the image drum cartridge.
Transfer roller	2.01" (51.0mm)	Replace the transfer roller.
Heat roller	2.47" (62.8mm)	Replace the fusing unit assy.
Back-up roller	2.72" (69.08mm)	Replace the back-up roller.

Notes: After replacing the image drum cartridge, set the printer to the user maintenance mode by turning the power on while pressing the MENU key, and reset the drum counter (see Printer Handbook).

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- Is the contact plate of the transfer roller in proper contact with the power supply/sensor board (see Fig. 6-5)?
- No Adjust the contact plate so that it touches the power supply/sensor board and the shaft of the transfer roller properly.
- Yes Replace the transfer roller.
- Has the problem been solved?
- Yes End
- No Is the tension between the back-up roller (7.52kg) and the surface of back-up roller normal?
- No Replace the back-up roller or bias spring.
- Yes Are the contacts of the toner supply roller, developing roller, image drum and charging roller in proper contact with the contact Assy (see Fig. 6-4 (A), (B), (C), (D), (E))?
- No Adjust the contacts so that they touch the contact Assy properly.
- Yes Replace the image drum cartridge.
- Has the problem been solved?
- Yes End
- Note:** After replacing the image drum cartridge, set the printer in the user maintenance mode by turning the power on while pressing the MENU key, and reset the drum counter (see Printer Handbook).
- No Is the LED head being installed properly (check HEAD1 and HEAD2 connectors on the main control board and PC Connector on the LED head)?
- No Install the LED head properly.
- Yes Replace the LED head or the head cable(s).
- Has the problem been solved?
- Yes End
- Note:** After replacing the LED head, set the printer to the engine maintenance mode by turning the power on while pressing the FORM FEED and ENTER keys. Set the LED head drive time (see 4.2).
- No Replace the main control board or power supply/sensor board.

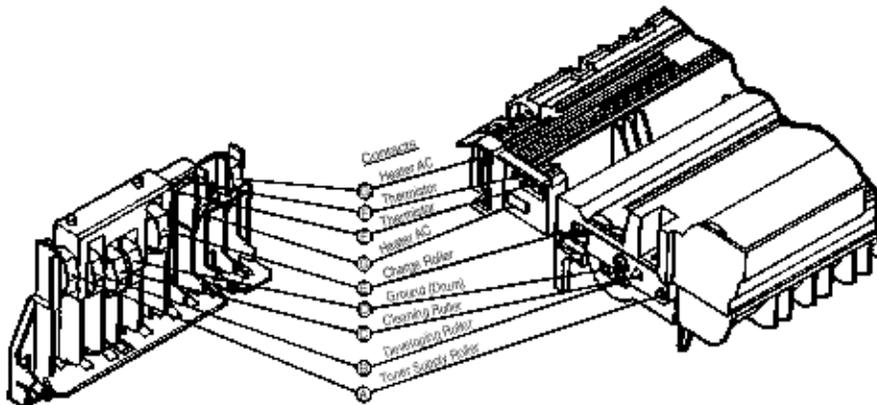


Figure 6-4

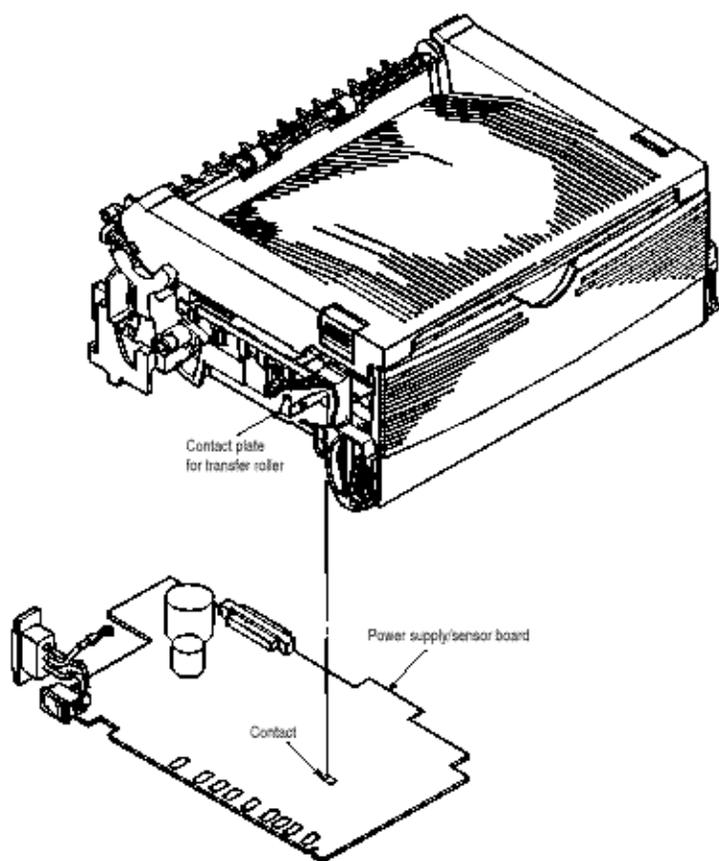


Figure 6-5

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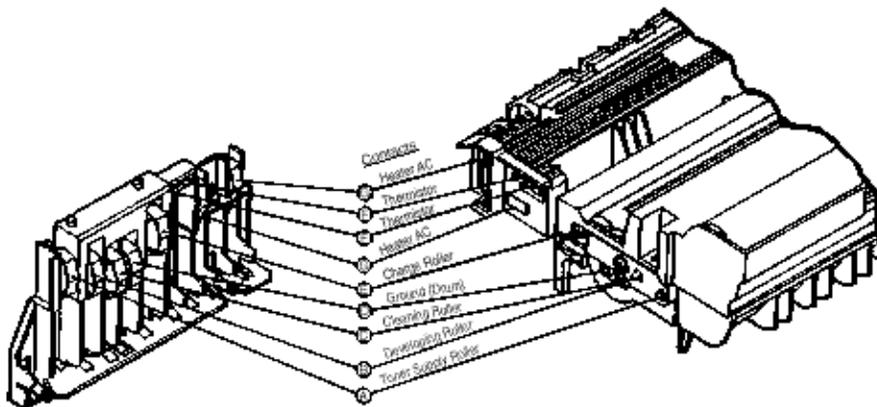


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Chapter 6 Troubleshooting Procedures

Poor fusing (images are blurred or peels off when the printed characters and images on the paper are touched by hand)

- Is paper of the specified grade being used?
 - No Use paper of the specified grade.
- Yes Is the tension between the back-up roller (7.52kg) and the surface of back-up roller normal?
 - No Replace the back-up roller or bias spring.
- Yes Is the contact of the fusing unit assy in proper contact with the contact assy (see Fig. 6-4 ③)?
 - No Adjust the contact of the fusing unit assy to make a proper contact with the contact assembly.
- Yes Replace the fusing unit assy.
- Has the problem been solved?
 - Yes End
 - No Replace the main control board or power supply/sensor board.





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Chapter 6 Troubleshooting Procedures

- Are the LED lens dirty?
- Yes Clean the LED lens.
- No Is the contact plate of the transfer roller in proper contact with the power supply/sensor board (see Fig. 6-5)?
- No Adjust the contact plate to make a proper contact with the power supply/sensor board.
- Yes Replace the transfer roller.
- Has the problem been solved?
- Yes End
- No Is the tension between the back-up roller (7.52kg) and the surface of back-up roller normal?
- No Replace the back-up roller or bias spring.
- Yes Is the LED head being installed properly (check HEAD1 and HEAD2 connectors on the main control board and PC connector on the LED head)?
- No Install the LED head properly.
- Yes Replace the LED head.
- Has the problem been solved?
- Yes End
- Note:** After replacing the LED head, set the printer to the engine maintenance mode by turning the power on while pressing the FORM FEED and ENTER keys. Set the LED head drive time (see 4.2).
- Yes Replace the image drum cartridge.
- Has the problem been solved?
- Yes End
- Note:** After replacing the image drum cartridge, set the printer to the user maintenance mode by turning the power on while pressing the MENU key. Reset the drum counter (see Printer Handbook).
- No Replace the main control board or power supply/sensor board.

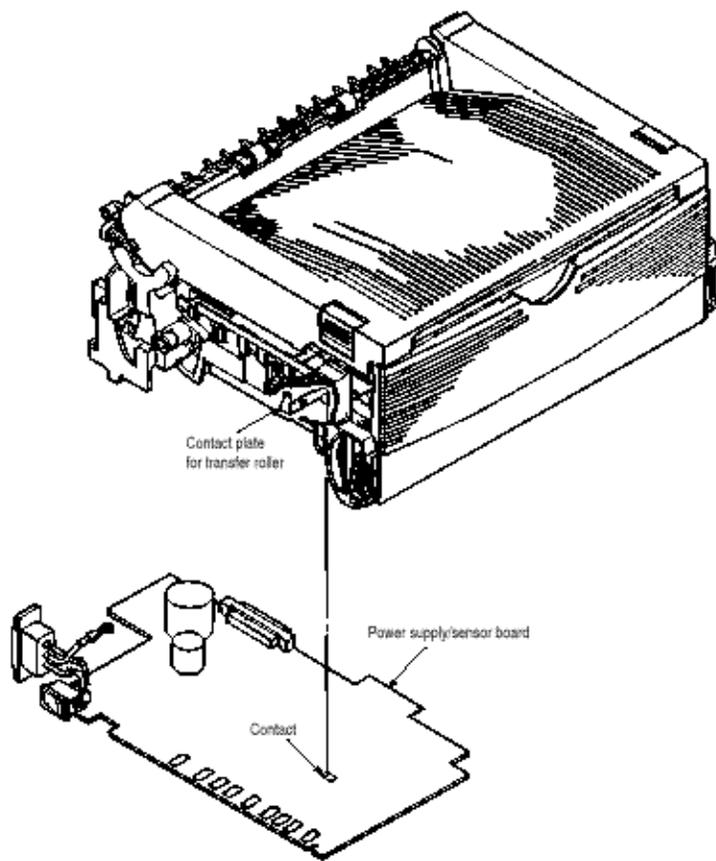


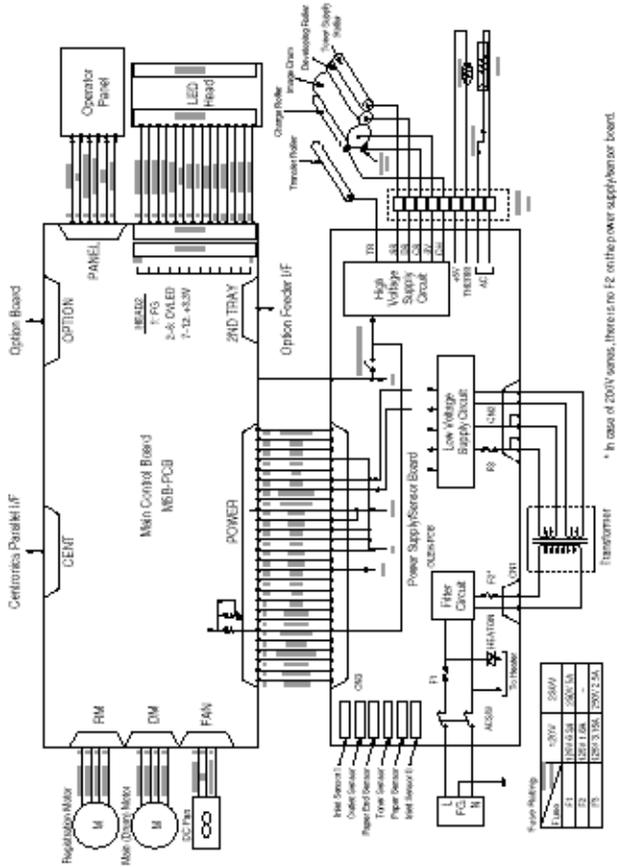
Figure 6-5

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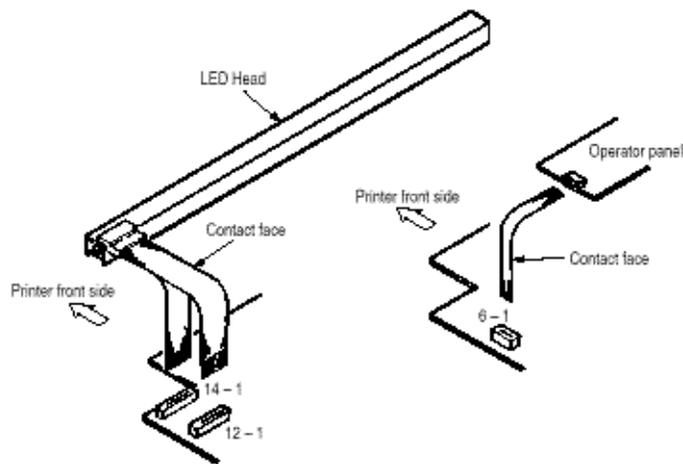
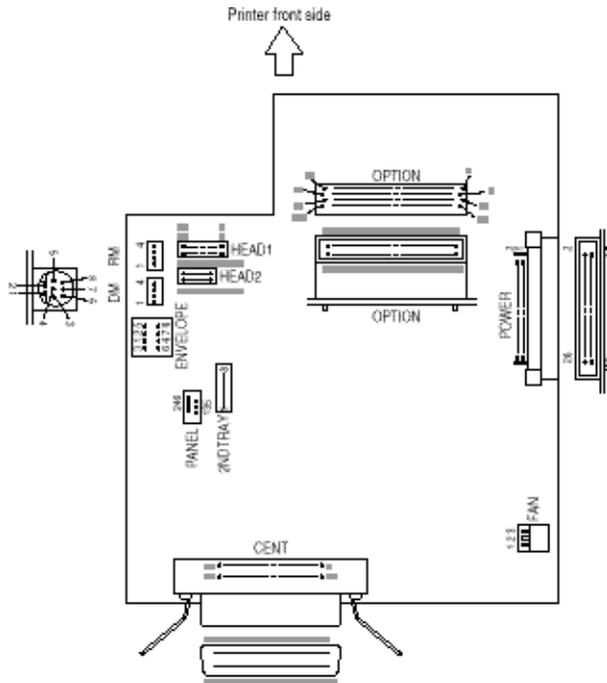
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Chapter 7 Wiring Diagram

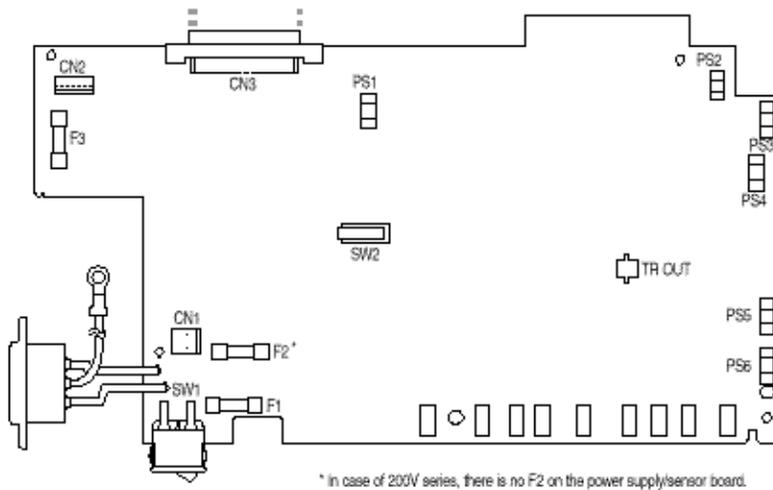


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(1) Main Control Board (M5B-PCB)



(2) Power Supply/Sensor Board



- FAN Connector Pin Assignment - (To fan motor)

	PIN NO.	I/O*	Signal	Description
Opening	1	O	FANPOW	Power supply for fan driving
	2	C	OV	Ground
	3	I	FANALM-N	Fan alarm

- Drum Motor Connector Pin Assignment - (To main/drum motor)

	PIN NO.	I/O*	Signal	Description
1	1	O	DMPH1-N	Coil 1-N
2	2	O	DMPH1-P	Coil 1-P
3	3	O	DMPH2-N	Coil 2-N
4	4	O	DMPH2-P	Coil 2-P

Excitation sequence

PIN NO.	Line Color	Step No.			
		1	2	3	4
2	Yellow	+	-	-	+
4	Black	+	+	-	-
1	Orange	-	+	+	-
3	Brown	-	-	+	+

Rotary direction Clockwise viewed from the output axis.

- * I: In
- O: Out
- C: Common

- RM Connector Pin Assignment - (To registration motor)

	PIN NO.	I/O*	Signal	Description
1	1	O	RMPH1-N	Coil 1-N
2	2	O	RMPH1-P	Coil 1-P
3	3	O	RMPH2-N	Coil 2-N
4	4	O	RMPH2-P	Coil 2-P

* I: In
O: Out

Excitation sequence

	PIN NO.	I/O*	Signal	Description
1	1	O	RMPH1-N	Coil 1-N
2	2	O	RMPH1-P	Coil 1-P
3	3	O	RMPH2-N	Coil 2-N
4	4	O	RMPH2-P	Coil 2-P

* I: In
O: Out

- Head1 Connector Pin Assignment - (To LED head)

	PIN NO.	I/O*	Signal	Description
1	1	O	HDSTB4-N	Strobe 4
2	2	O	HDSTB3-N	Strobe3
3	3	O	HDSTB2-N	Strobe 2
4	4	O	HDSTB1-N	Strobe 1
5	5	O	HDDL-P	Load
6	6	O	+3.3V	+3.3V power supply for LED driving
7	7	O	HDD1-P	Data 1
8	8	O	HDD0-P	Data 0
9	9	C	OVLED	Ground for LED
10	10	O	HDD3-P	Data 3
11	11	O	HDD2-P	Data 4
12	12	C	OVLOGIC	Ground for logic
13	13	O	HDCLK-P	Clock
14	14	C	OVLOGIC	Ground for logic

* O: Out
C: Common

- Head2 Connector Pin Assignment - (To LED Head)

		PIN NO.	I/O*	Signal	Description
12		12	O	+3.3V	+3.3V power supply for LED driving
	11	11	O		
10		10	O		
	9	9	O		
8		8	O		
	7	7	O	OVLED	Ground for LED
6		6	C		
	5	5	C		
4		4	C		
	3	3	C		
2		2	C	FG	FG
	1	1	C		

* O: Out
C: Common

- PANEL Connector Pin Assignment - (To operator panel)

		PIN NO.	I/O*	Signal	Description
1		1	O	OPLD-N	Load
	2	2	C	OV	Logic ground
3		3	O	PDATAOUT-P	Data output
	4	4	I	PDATAIN-P	Data input
5		5	C	5V	+5V power supply
	6	6	O	PSCLK	Clock

* I: In
O: Out
C: Common

- 2ND Tray Connector Pin Assignment - (To option feeder I/F)

		PIN NO.	I/O*	Signal	Description
5	8	1	O	PAPERIN-N	Paper sense 1
2	7	2	O	OPTSCLK-N	Clock
1	4	3	O	DATA-N	Data
3	6	4	I	EVLSDP-N	OPT send data ready
		5	C	OVP	Analog ground
		6	O	30V	+30V power supply
		7	C	0V	Logic ground
		8	O	5V	+5V power supply

* I: In
O: Out
C: Common

- POWER Connector Pin Assignment - (To power supply/sensor board)

Pin No.	I/O*	Signal	Description
1	I	STROBE-N	Strobe
2	C	DATA1-P	Data bit 0
3	C	DATA2-P	Data bit 1
4	C	DATA3-P	Data bit 2
5	C	DATA4-P	Data bit 3
6	C	DATA5-P	Data bit 4
7	C	DATA6-P	Data bit 5
8	C	DATA7-P	Data bit 6
9	C	DATA8-P	Data bit 7
10	O	ACK-N	Acknowledge
11	O	BUSY-P	Busy
12	O	PE-P	paper end
13	O	SEL-P	Select
14	I	AUTOFEED-N	Auto feed
15		NC	Non connected
16	C	SG	Ground
17	C	FG	
18	O	P-LOGIC-H	+5V power supply
19	C	SG	Ground
20	C	SG	Ground
21	C	SG	Ground
22	C	SG	Ground
23	C	SG	Ground
24	C	SG	Ground
25	C	SG	Ground
26	C	SG	Ground
27	C	SG	Ground
28	C	SG	Ground
29	C	SG	Ground
30	C	SG	Ground
31	I	IPRIME-N	Input prime
32	O	FAULT-N	Fault
33	C	SG	Ground
34		NC	Not connected
35	O	HILEVEL	Always kept high
36	I	SELIN-N	Select in

* O : Out
I: In
C: Common

Pin No.	I/O*	Signal	Description
2	O	TRSEL-P	TR control switch
4	I	THERMO-CMP	Heater temperature
6	I	CVOPN-N	Cover open (+30V)
8	O	DOUT-P	Serial data output
10	I	DIN	Serial data input
12	I	+5V	Logic circuit supply voltage
14	I	+3.3V	LED head supply voltage
16	C	OVL	Logic ground

18	I	+30V	Motor and fan drive voltage and source voltage for high voltage supply
20	O	HEATON-N	Heater on
22	I	-8V	RS232C line voltage and PS board supply voltage
24	I	+8V	RS232C line voltage
26	O	TRSEL3-N	TR control switch
1	I	SQCR-N	Sequence clear signal of serial I/F
3	I	SCLK-N	Clock signal of serial I/F
5	I	PSIN1	Paper sense
7	I	WRSNS	Reading of paper edge
9	I	OVL	Ground for logic
11	C	+5V	Logic circuit supply voltage
13	I	+3.3V	LED head supply voltage
15	I	OVL	Logic ground
17	C	+30V	Motor and fan drive voltage and source voltage for high voltage supply
19	O	TRSEL2-N	TR control switch
21	C	0VP	Power (motor) ground
23	C	0VP	Power (motor) ground
25	C	0VP	Power (motor) ground

- OPTION Connector Pin Assignment - (To option RAM or PS board)

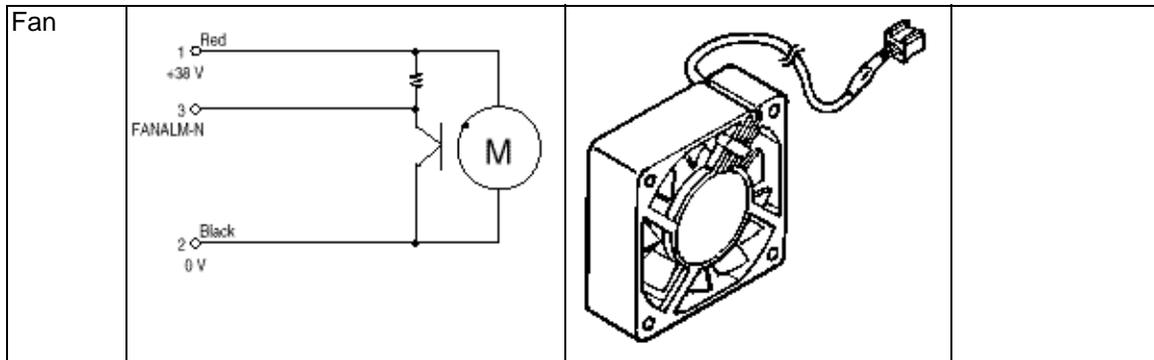
Pin No.	I/O*	Signal	Description
01	O	A0	OR write enable
02	C	0V	Logic ground
03	O	A1	Address bit 1
04	O	A2	Address bit 2
05	O	RSDTR0-N	RS232C Data terminal ready
06	O	A3	Address bit 3
07	O	A4	Address bit 4
08	C	0V	Logic ground
09	O	A5	Address bit 5
10	O	A6	Address bit 6
11	C	_5V	Logic power supply
12	O	A7	Address bit 7
13	O	A8	Address bit 8
14	C	0V	Logic ground
15	O	A9	Address bit 9
16	O	A10	Address bit 10
17	C	+5V	Logic power supply
18	O	A11	Address bit 11
19	O	A12	Address bit 12
20	C	0V	Logic ground
21	O	A13	Address bit 13
22	O	A14	Address bit 14
23	C	+5V	Logic power supply
24	O	A15	Address bit 15
25	O	A16	Address bit 16
26	C	0V	Logic ground
27	O	A17	Address bit 17

28	O	A18	Address bit 18
29	C	+5V	Logic power supply
30	O	A19	Address bit 19
31	O	A20	Address bit 20
32	C	0V	Logic ground
33	O	A21	Address bit 21
34	O	A22	Address bit 22
35	O	A23	Address bit 23
36	O	0V	Logic ground
37	O	0V	Logic ground
38	C	0V	Logic ground
39	O	RSRSTO-N	RS232C request to send
40	O	CS1-N	ROM/SRAM select 1
41	O	CS2-N	ROM/SRAM select 2
42	O	CS3-N	ROM/SRAM select 3
43	I	SCRREQ-P	SCC send request
44	C	0V	Logic ground
45	I	SCSREQ-P	SCC send request
46	O	IOS0-N	I/O select 0
47	O	IOS1-N	I/O select 1
48	O	RSTXD0-N	RS232C send data
49	O	-8V	RS232C line voltage
50	I	RSTXD0-P	RS232C receive data
51	C	D16	Data bit 16
52	C	D0	Data bit 0
53	C	D17	Data bit 17
54	C	D1	Data bit 1
55	C	D18	Data bit 18
56	C	D2	Data bit 12
57	C	D19	Data bit 19
58	C	D3	Data bit 3
59	C	D20	Data bit 20
60	C	D4	Data bit 4
61	C	D21	Data bit 21
62	C	D5	Data bit 5
63	C	D22	Data bit 2
64	C	D6	Data bit 6
65	C	D23	Data bit 23
66	C	D7	Data bit 7
67	C	D24	Data bit 24
68	C	D8	Data bit 8
69	C	D25	Data bit 25
70	C	D9	Data bit 9
71	C	D26	Data bit 26
72	C	D10	Data bit 10
73	C	D27	Data bit 27
74	C	D11	Data bit 11
75	C	D28	Data bit 28
76	C	D12	Data bit 12
77	C	D29	Data bit 29
78	C	D13	Data bit 13
79	C	D30	Data bit 30

80	C	D14	Data bit 14
81	C	D31	Data bit 31
82	C	D15	Data bit 15
83	O	DRAS2-N	DRAM select 2
84	O	DRAS3-N	DRAM select 3
85	O	DRAS4-N	DRAM select 4
86	O	DRAS5-N	DRAM select 5
87	O	DCAS3-N	DCAS3
88	O	DCAS2-N	DCAS2
89	O	DCAS1-N	DCAS1
90	O	DCAS0-N	DCAS0
91	O	RD-N	RD-N
92	O	WR-N	WR-N
93	I	INT1-N	Interrupt request 1
94	I	INT2-N	Interrupt request 2
95	O	EEPRMCS1-P	EEPROM select
96	O	EEPRMCLK-P	EEPROM clock
97	C	SSTXD-P	EEPROM data
98	I	DRDY-N	Data read
99	C	+8V	RS232C line voltage
100	O	RESET-N	Reset signal

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Unit	Circuit Diagram	Illustration	Resistance
Registration motor			Between Pins 1 and 2: 18.6 Ohms Between Pins 3 and 4: 18.6 Ohms
Main/drum motor			Between Pins 1 and 2: 2.9 Ohms Between Pins 3 and 4: 2.9 Ohms
Fusing unit			Between Pins 1 and 2: 120V 3 Ohms 240V 10 Ohms Between Pins 3 and 4: (at room temperature) 220K Ohms
Transformer			Primary side Between Pins 1 and 2: 8 Ohms (120V) 28.8 Ohms (230V) Secondary side Between Pins 1 and 3: 1.2 Ohms Between Pins 5 and 6: 1.5 Ohms



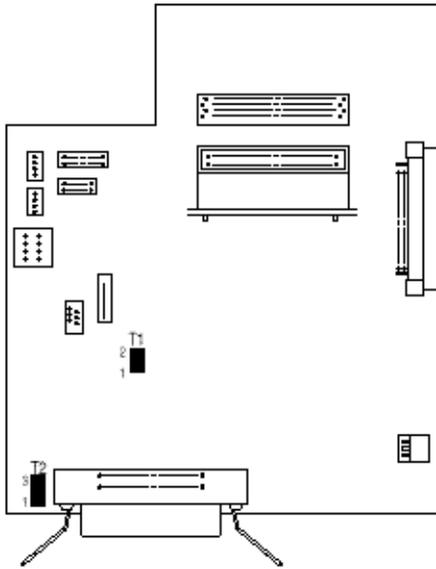
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Chapter 7 Wiring Diagram

(1) Main Control Board (M5B-PCB)



- Short plug settings

Short plug	Plug setting	Description	Factory setting
T1	Provided	Debug mode	Not provided
	Not provided	Normal	
T2	2-3 Short	+5 V is supplied to Pin 18 of Centronics parallel I/F connector.	2-3 Short
	1-2 Short	+5 V is not supplied to Pin 18 Centronics parallel I/F connector. Pin 18 is High Level output.	



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Chapter 8 Parts List

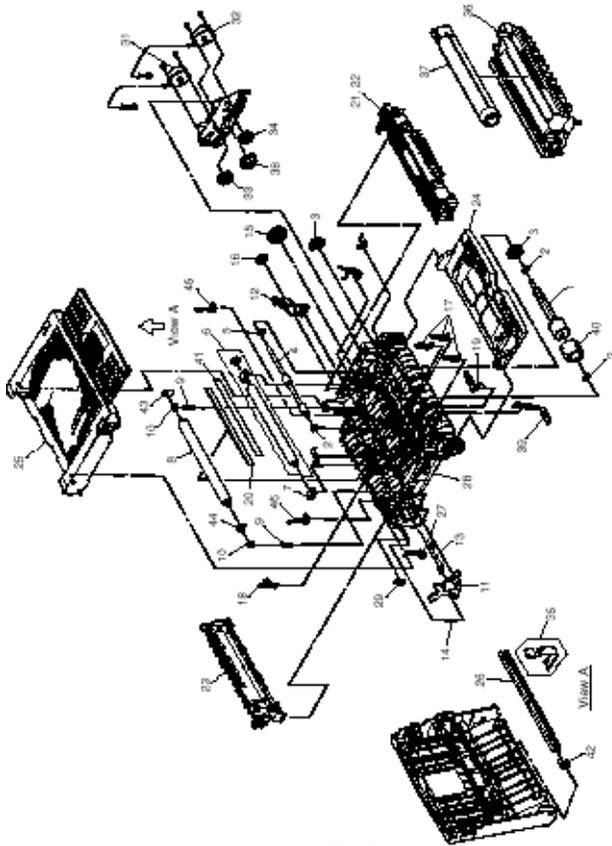


Figure 8-1 Lower Base Unit

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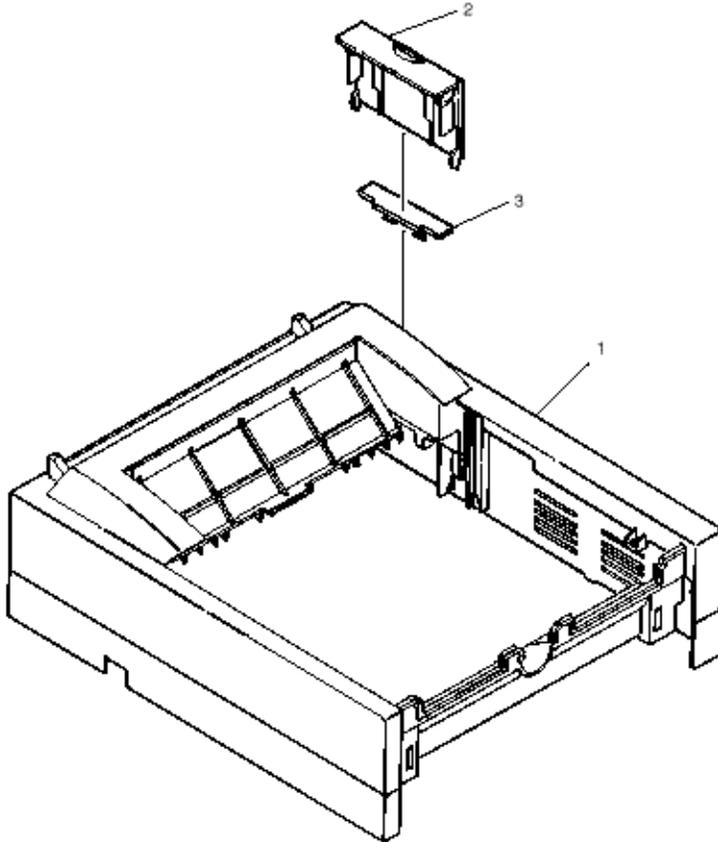
Service Manual - OKIPAGE10i

Chapter 8 Parts List

No.	Name/Rating	Part #	Use	Remarks	ODA Part No.
1	Hopping roller shaft	3PP4083-6020P1	1		51112301
2	Bearing	4PP4083-6022P2	4		51607402
3	Gear: One-way clutch	4PB4083-6024P1	2		51228901
4	Roller: Registration	3PB4083-6030P1	1		53342501
5	Bearing: Registration roller	4PP4083-6031P1	1		40437801
6	Roller-Transfer (B) Assy		1		40437801
7	Bear TR		1		40438001
8	Roller: Back-up	3PB4083-6064P2	1		53343701
9	Spring: Bias	4PP4083-7620P1	2		50929301
10	Bushing: Pressure Roller	4PP4083-6052P1	2		51607601
11	Lever: Reset (L)	3PP4083-6053P1	1		50805801
12	Lever: Reset (R)	3PP4083-6054P1	1		50805901
13	Arm: Cover open	3PP4083-6058P1	1		53068901
14	Spring: Stacker cover reset	4PP4083-6057P1	1		50924201
15	Gear: Fuser roller idle	4PP4083-6080P1	1		51229101
16	Gear: Eject roller idle	4PP4083-6081P1	1		51229201
17	Plate: Sensor (inlet)	4PP4083-6083P1	3		51010701
18	Plate: Sensor (outlet)	4PA4083-6025G1	1		51010802
19	Sensor: toner	4PP4083-6086G1	1		50405501
20	Strip: anti-static	4PB4083-6979P1	1		51010903
21	Heat Assy. - OP10i		1	120V	40470101
22	Heat Assy - OP10i		1	230V	40470102
23	Roller: Eject assy.	2PA4083-7680G1	1		50409401
24	Guide: Manual feed assy.	2PA4128-1149G1			51017201
25	Stacker-Assy		1		40103802
26	Unit: LED head unit (1224G2)		1		56111902
27	Arm: Stacker cover damper	4PP4083-6191G1	1		53069101
28	Frame: Lower base	2PP4083-6801G2	1		50217602
29	Gear: Stacker cover damper	4PB4083-6197P1	1		51229401
30					
31	Motor: Pulse main		1		40229001
32	Motor: Pulse (registration)		1		40396201
33	Gear: Idle A (Z60/16)		1		40295001
34	Gear: Idle B (Z60/16)		1		40295101
35	Cord: LED Assembly		1		40241702
36	Image drum unit (Type 5)		1	ODA	40433305
37	Toner Cartridge (Type 5)		1	Consumable	40433203
38	Gear: Reduction	3PP4083-7617P1	1		51239501
39	Plate: FG O.P.	4PP4083-7663P1	1		53347201
40	Rubber: Hopping roller	4PB4122-1280P1	1		51711401
41	Film: Anti-static	3PB4083-6089P1	1		52203801

42	Contact: Ground clip LED head	4PP4083-6173P1	1		51024601
43	Washer C	4PP4120-1210P1	1		50517201
44	Washer B	4PP4120-1209P1	1		50517001
45	Spacer: Bearing R		1		40392801
46	Spacer: Bearing-R		1		40392801

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Chapter 8 Parts List

No.	Name/Rating	Part #	Use	Remarks	ODA Part No.
1	Cover: Upper	1PP4128-113P1	1		53070301
2	Cover: IC card	2PP4128-1155P1	1		53069301
3	Cover: Lid		1		40104801

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Chapter 8 Parts List

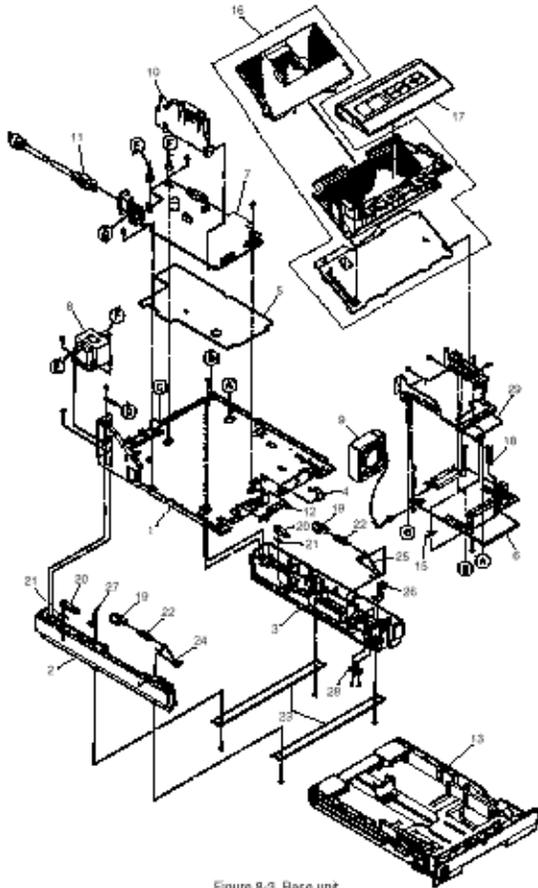


Figure 8-3 Base unit

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Chapter 8 Parts List

No.	Name/Rating	Part #	Use	Remarks	ODA Part No.
1	Plate: Base	2PP4083-7672G1			51017501
2	Guide: Cassette (L)	3PP4083-7670G1			51017301
3	Guide: Cassette (R)	3PP4083-7671G1			51017401
4	Plate: Sensor Inlet				51010701
5	Insulator				51709401
6	PCB: M5B (Main assy.)				40217002
7	Power supply unit (120V)			120V	40217701
8	PWR transformer (120V)			120V	40138801
9	Fan motor				56512301
10	Assy.: Contact				56730001
11	AC cord			120V	
12	Plate: Cassette sensor				51011501
13	Paper Cassette Assy.				40473001
14					
15	Plate: Earth				51011601
16	Assy.: Face up stacker				50110301
17	Operator panel assy.			ODA	40104401
18	Cable: Op panel Conn. (120V)			120V	56636001
19	Block: Link pull				53345201
20	Lever: Lock cassette				50808401
21	Spring: Cassette lock				50929501
22	Spring: Sheet				
23	Bearm				
24	Link: Sheet (L)				
25	Link: Sheet (R)				
26	Plate: FG C				
27	Plate: FG D				
28	Cable: 2nd tray connector				
29	Plate: Guide (PCB)				



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Chapter A RS-232C Serial Interface (Option)

1) Connector

Printer side : 25-pin receptacle
Type DB-25S (made by Canon) or equivalent

Cable side : 25-pin plug
Type DB-25S (made by Canon)
Shell
Type DB-C8-J10-F2-1 (made by Nihon Kouku Denshi) or equivalent

Note: Plug shall be fixable with a lock screw.

2) Cable

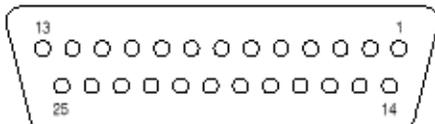
Cable length : 6 ft (1.8 m) max. (cable shall be shielded)

Note: Cable is not provided. Cable is not provided.

3) Interface signal

Pin No.	Signal name	Abbreviation	Signal direction	Functions
1	Frame Ground	FG		Frame Ground
2	Transmitted Data	TD	<-- PR	Transmitted Data
3	Received Data	RD	--> PR	Receive Data
4	Request to Send	RTS	<-- PR	Stay space level
5	---			(Not connected)
6	---			(Not connected)
7	Signal Ground	SG		Signal Ground
9 to 17	---			(Not connected)
18	---			(Not connected)
19	---			(Not connected)
20	Data Terminal Ready	DTR	<-- PR	Data terminal ready
21 to 25	---			(Not connected)

- Connector pin arrangement



(View from cable side)

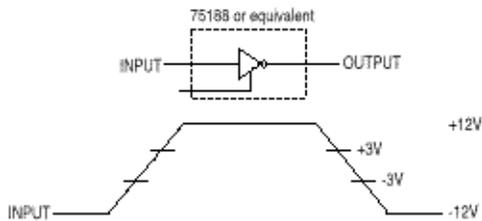
When the Ready/Busy protocol is used for the buffer busy control method, the busy signal can be set to Pin-20 (DTR) in the menu.

4) Signal Level

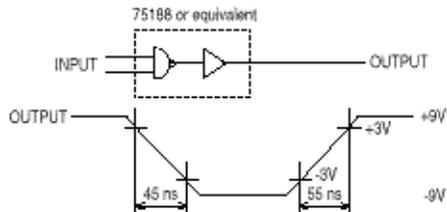
- MARK polarity: -3V to -15V (LOGIC =1)
- SPACE polarity: +3V to +15V (LOGIC = 0)

5) Interface Circuit

a) Receiving Circuit



b) Sending Circuit



Note: The signal levels described above is for the case where 3K Ohms x 15pF is connected to the terminal.

6) Receive Margin

37% min. at all reception rates.

7) Communications Protocol

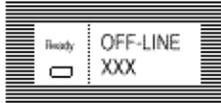
- READY/BUSY protocol
- X-ON/X-OFF protocol

8) Interface Parameter Setting

The following settings are possible by pressing the ENTER key, after selecting the display contents of the LCD of the operator panel by using the ◀ and ▶ keys.

Settings are retained even when the printer power is turned off.

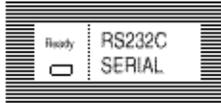
By press the ON LINE key, menu setting mode is completed an the printer returns to on-line state.



XXX : PCL, AUTO, Adobe PS, HEX DUMP, PRR or FX

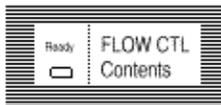


Keep the MENU key down for more than 2 seconds and bring the printer into menu setting mode (level 2). Next, press the MENU key 10 times.



"RS232C SERIAL" is displayed on the LCD.

Press the ENTER key.



Item	Flow CTL
Contents of Display	Function
DTR HI	SPACE-READY
DTR LO	MARK-READY
XONXOFF	
RBSTXON	Sending at intervals of 1 sec.

Factory Setting: DTR HI



Press the MENU key.



Item	Baud Rate
Contents of Display	Function
300	300 baud
600	600 baud
1200	1200 baud
2400	2400 baud
4800	4800 baud
9600	9600 baud
19200	19200 baud

Factory Setting: 9600 baud



Press the MENU key.



Item	Bit Length
Contents of Display	Function
8 BITS	8 bits
7 BITS	7 bits

Factory Setting: 8 bit



Press the MENU key.

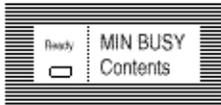


Item	Parity
Contents of Display	Function
NONE	No parity
EVEN	Even parity
ODD	Odd parity

Factory Setting: NONE



Press the MENU key.



Item	Minimum BUSY Time
Contents of Display	Function
200 m SEC	200 ms
1 SEC	1 sec (1000 ms)

Factory Setting: 200 m SEC

(PCL only)



Press the ON LINE key.



Setting completed.

XXX : PCL, AUTO, Adobe PS, HEX DUMP, PRR or FX

1) Connector

- Printer side : 36-pin receptacle
(single port) Type 57RE-40360-7
30B-D29A (made by Daiichi Denshi), CN-AX05841A36AT
(made by Ougat) or equivalent

- Cable side : 36-pin plug
Type 57-30360 (made by Daiichi Denshi) or equivalent
Plug-552274-1 (AMP), 552073-1 (AMP) or equivalent

2) Cable

- Cable length : 6 ft (1.8 m) max.

(A Shielded cable composed of twisted pair wires is recommended for noise prevention.)

Note: Cable is not supplied with the printer, and is not available from Oki.

3) Table of Parallel I/F Signals

Pin No.	Signal name	Signal direction	Functions
1	DATA STROBE	→ PR	Parallel data sampling strobe
2	DATA BIT - 1		
3	DATA BIT - 2		
4	DATA BIT - 3		
5	DATA BIT - 4	→ PR	PR Parallel input and output data
6	DATA BIT - 5		
7	DATA BIT - 6		
8	DATA BIT - 7		
9	DATA BIT - 8		
10	ACKNOWLEDGE	← PR	Completion of data input or end of a function
11	BUSY	← PR	During print processing or alarm
12	PAPER END	← PR	End of paper
13	SELECT	← PR	Select state (ON-LINE)
14	AUTOFEED	→ PR	Request to change mode
15	-		(Not used)
16	0V		Signal ground
17	CHASSIS GROUND		Chassis ground
18	+5V	← PR	50 mA max.
19	⋮		
20	0V		Signal ground
21	⋮		
22	⋮		
23	⋮		
24	⋮		
25	⋮		
26	⋮		
27	⋮		
28	⋮		
29	⋮		
30	⋮		
31	INPUT PRIME	→ PR	Initializing signal
32	FAULT	← PR	End of paper or during alarm
33	-		Signal ground
34	-		(Not used)
35	-		High level (3.3 kΩ)
36	SELECT IN	→ PR	Request to change mode

- Connector pin arrangement



4) Signal Level

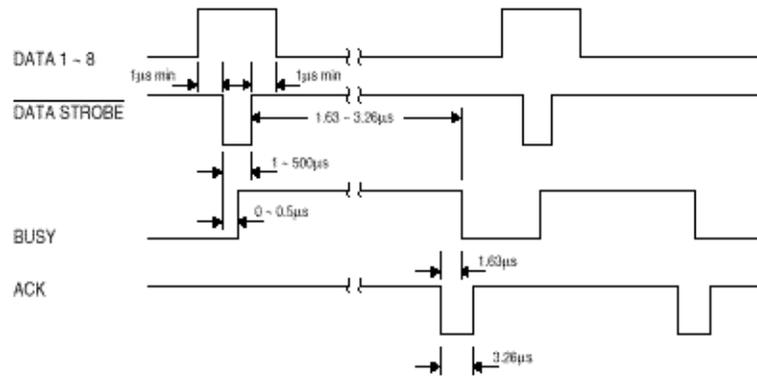
- LOW : 0 V to +0.8 V
- HIGH : +2.4 V to 5.0 V

5) Specifications

Item	Description
Mode	Compatibility mode, Nibble mode, ECP mode
Data bit length	8 bits (in the compatibility mode)
Input prime	Valid/Invalid
Receive buffer	8K, 20K, 50K, 100K, 1M Bytes
Control	Handshaking control is performed in each mode. Data received from the host is stored in the receive buffer. Busy control is performed. Signal lead control is performed.

6) Timing Charts

Data receiving timing

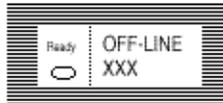


7) Interface Parameter Setting

The following settings are possible by pressing the ENTER key, after selecting the display contents of the LCD of the operator panel by using the and keys.

Settings are retained even when the printer power is turned off.

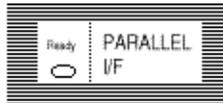
By pressing the ON LINE key, menu setting mode is completed and the printer returns to on-line state.



XXX : PCL, AUTO, Adobe PS, HEX DUMP, PRR or FX



Keep the MENU key down for more than 2 seconds and bring the printer into menu setting mode (level 2). Next, press the MENU key 9 times.



PARALLEL I/F is displayed on the LCD.



Press the ENTER key.



Item	Data Transfer Speed	
Contents of Display	Function	
HIGH	High speed	
MEDIUM	Normal speed	

Factory Setting: HIGH



Press the MENU key.



Item	Direction of Data Transfer
Contents of Display	Function
ENABLE	Bi-directional data transmission
DISABLE	Uni-directional data transmission

Factory Setting: ENABLE



Press the MENU key.



Item	I-PRIME
Contents of Display	Function
OFF	I-PRIME signal ignored
ON	I-PRIME signal effective

Factory Setting: OFF



Press the ON LINE key.



Setting completed.

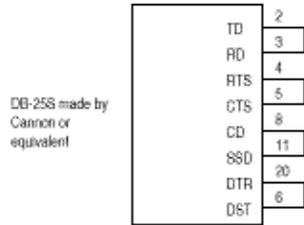
XXX : PCL, AUTO, Adobe PS, HEX DUMP, PRR or FX



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Chapter C Loop Test (RS-232C Interface)

1) Connect the test connector



DB-25S made by
Canon or
equivalent

Test Connector Connection Diagram

2) Select "LOOP Test" in the system maintenance mode.

The codes transmitted from the TD signals are comparatively checked with the data received from the RD signals. If any error occurs, the error message is displayed on the LCD.

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Chapter D Diagnostics Test

- The maintenance modes consist of the user maintenance mode which is available to the end-users, and the system and engine maintenance modes in the maintenance which are not available to the user.
 - Press the MENU key to update each category. The operation returns to the first category after updating the last category, in a loop.
 - Press the Enter key to execute the function being displayed.
 - To exit from any of these modes during a category display, press the Recover or ON LINE key and the operation mode will start.
-

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Chapter D Diagnostics Test

- To enter the user maintenance mode, turn the power on while keeping the MENU key pressed down.
- This mode uses the menu for function selection.
- The user maintenance mode provides the following functions:

(1) Hex Dump

- The data received from the host (higher position) is dumped in hexadecimal notation to the printer.
- Printing is activated automatically when the received data exceeds one page. If the received data is less than one page, printing can be activated manually by pressing the FORM FEED key after desetting the off-line mode by pressing the ON LINE key (automatic activation of printing even when the received data is less than one page is possible by selecting the Auto Eject function on the menu).
- The only way to exit from this mode is by turning the power off.

(2) Menu Reset

- All settings for Menu level-1 are reset to factory default values. The menus for all executable emulations, including options, are reset to factory default values.
- The operation mode starts automatically upon completion of resetting.

(3) Drum Counter Reset

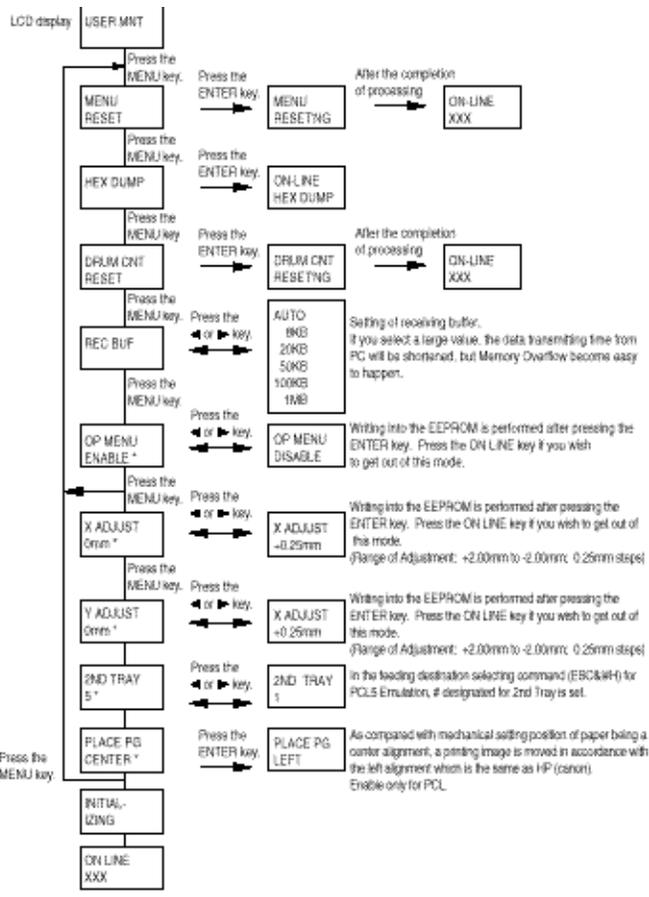
- This function resets the drum life data when the user replaces the image drum unit.
- The operation mode starts automatically upon completion of resetting.

(4) X-Adjust / Y-Adjust

- This function sets the first character printing position on the first line.
- The operation mode starts automatically upon completion of resetting.

(5) Operator Panel Menu Disable

- This function is for enabling and disabling the operation panel menu functions (Menu 1, Menu 2, Tray Select, Copies and Paper Size).



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Chapter D Diagnostics Test

- To enter the system maintenance mode, turn the power on while keeping the Recover key pressed down.
- This mode adopts the menu for function selection.
- The system maintenance mode provides the following functions:

(1) Page Count Display

- The total number of pages counted at the engine block is displayed on the LCD.

(2) Page Count Printing Enable/Disable

- This function allows the selection to include (enable) or exclude (disable) the total number of printed pages counted at the engine block at the time of menu printing.

(3) Rolling ASCII Continuous Printing

- The rolling ASCII pattern is printed continuously for various engine tests.
- Press the ON LINE key to cancel this mode.

(4) Loop Test

- The loop test is for testing the serial I/F functions without connecting the printer to the host.
- The data is sent and received by loop back in the loop test.
- The loop test is performed even when another interface is being selected in Menu level-2.
- Installation of the loop connector is necessary for the loop test (refer to Appendix C, LOOP TEST (RS-232C INTERFACE)).
- The realtime loop count is displayed on the LCD.
- When an error occurs in the course of the test, the corresponding error message is displayed on the LCD.
- Press the ON LINE key to cancel this mode.

(5) EEPROM Reset

- All EEPROM areas, including Menu level-2 are set to the factory default values.
- The following items are excluded:

Head drive time setting

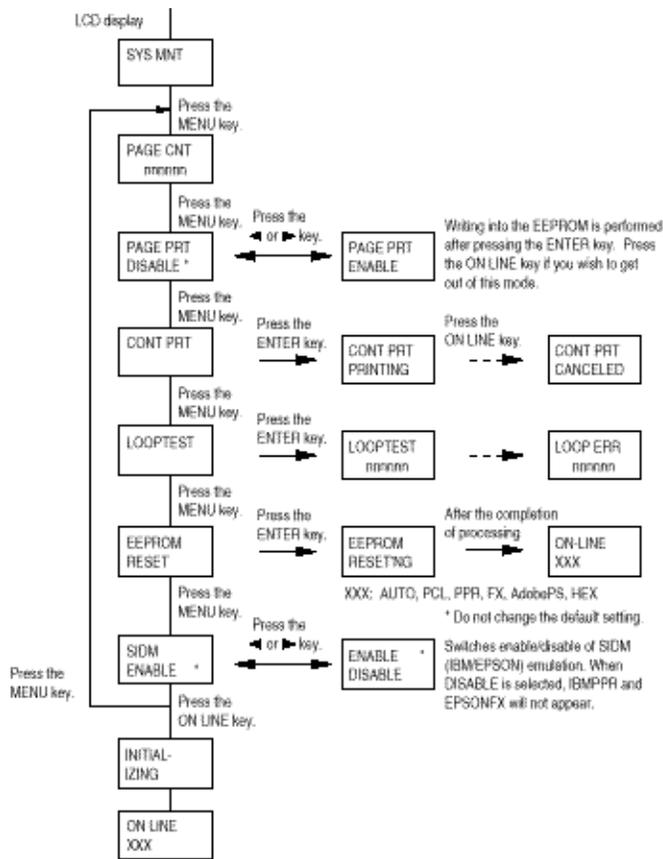
Fine adjustment of printing start position

Standard tray paper feed amount setting

- Transition to the operation mode occurs upon completion of resetting.
- Press the MENU key to update each category. The operation returns to the first category after

updating the last category, in a loop.

(6) System Maintenance Mode Menu System





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Chapter D Diagnostics Test

- The engine maintenance mode is activated when the power is turned ON while keeping the FORM FEED key and ENTER key pressed down.
- This mode adopts the menu for function selection.
- The method for exit from this mode depends on the setting.
- The engine maintenance mode provides the following functions:

(1) Head Drive Time Setting

- Sets the drive time of the LED head.

(2) Type

- Do not change the default setting.

(3) Printing Start Position Setting

- Sets the printing start position.

(4) Drum Count Total Display

- Displays on the LCD the total number of drum revolutions of the unit, counted at the engine block.

(5) Drum Count Display

- Displays on the LCD the total number of EP drum revolutions counted at the engine block.

(6) Factory Adjustment (for High Capacity Second Paper Feeder/Power Envelope Feeder)

- Do not change the default settings since these are factory settings and were set at the factory.

(7) Engine Reset

- All EEPROM areas used by the engine block are reset to factory default values.
- The following items are excluded:

Menu level-1

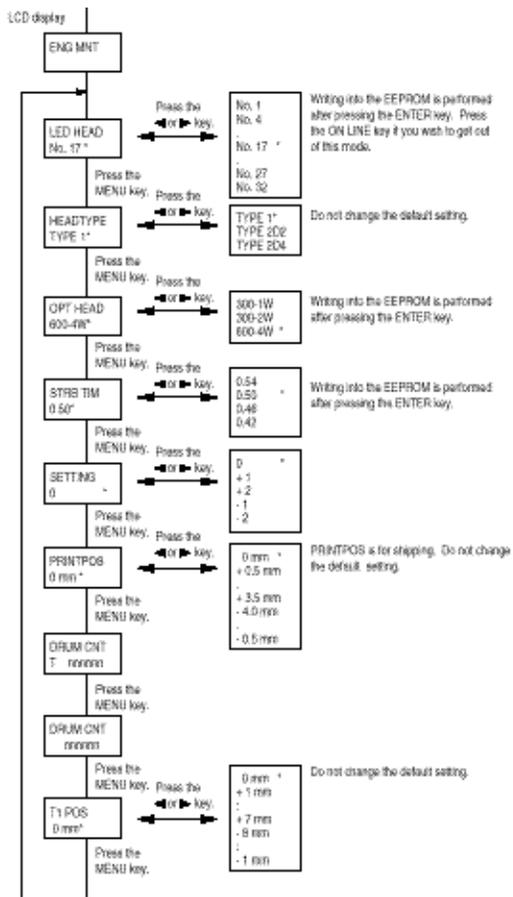
Menu level-2

Operator panel menu disable/enable

Page print disable/enable

- Transition to the operation mode occurs upon completion of resetting.

- Engine maintenance mode menu system



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Service Manual - OKIPAGE10i
Chapter E Multi-Purpose Feeder Maintenance

This Maintenance Manual is intended for the maintenance personnel and describes the field maintenance methods for Multi-Purpose Feeder option of OKIPAGE 10i Series LED Page Printer.

Refer to the Printer Handbook for equipment handling and operation methods.

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Service Manual - OKIPAGE10i

Chapter E Multi-Purpose Feeder Maintenance

1.1 Functions

1.2 External View and Component Names

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Chapter E Multi-Purpose Feeder Maintenance

This Multi-Purpose Feeder is installed on the front section of the printer, and it supplies paper automatically through the operation of pulse motor, which is driven by signals sent from the printer.

The main functions are the followings:

- Paper that can be used:

[Paper Types]

- Standard paper: Xerox 4200 (20-lb)
- Special paper: OHP sheets (for PPC), label sheets (PPC sheets). * Not guaranteed for OHP sheets with attachments on the edge or reverse side.
- Cut sheet size: Letter, Executive, A4, A5, B5, A6

Special size: Width: 87 to 216mm

Length: 148 to 297mm

[Weight and Thickness]

- 16-lb to 32-lb (60~128 g/m²)
- For labels and OHP Sheets: Label sheets: 0.1 to 0.15mm; OHP sheets: 0.08 to 0.11mm

* When using sheets which exceed 24-lb, make sure that the paper exits through the face-up route.



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Chapter E Multi-Purpose Feeder Maintenance

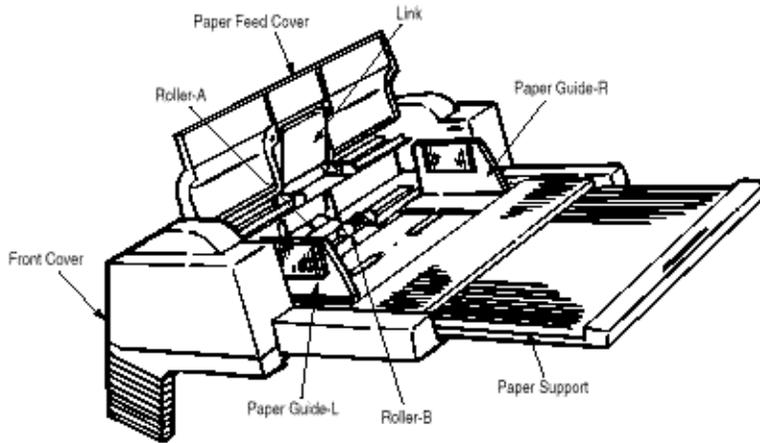


Fig. 1-1

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Chapter E Multi-Purpose Feeder Maintenance

2.1 General Mechanism

2.2 Hopper Mechanism

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Chapter E Multi-Purpose Feeder Maintenance

The Multi-Purpose Feeder feeds the envelopes and paper into the printer by receiving the signal from the printer, which drives the pulse motor inside the Multi-Purpose Feeder, and this motion is transmitted to rotate roller-A and B. The envelope or paper is delivered from the separator into the printer.

Once delivered into the printer, the envelope or paper is then controlled and fed through by pulse motor (registration) of the printer.

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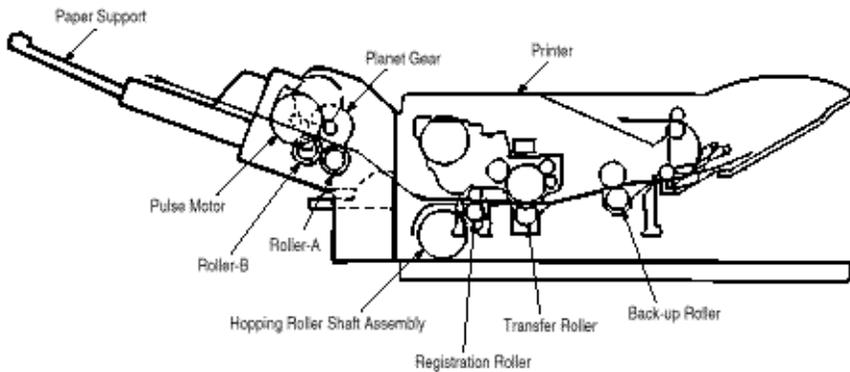


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Chapter E Multi-Purpose Feeder Maintenance

The hopper automatically feeds the printer with the envelope or paper being set, one sheet at a time.

After the envelope or paper is set in the Multi-Purpose Feeder, the pulse motor moves the envelope or paper and a single envelope or paper caught by the separator is fed into the printer.



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Chapter E Multi-Purpose Feeder Maintenance

This section covers the procedures for the disassembly, reassembly and installations in the field. This section describes the disassembly procedures, and for reassembly procedures, basically proceed with the disassembly procedures in the reverse order.

3.1 Precautions Concerning Parts Replacement

3.2 Parts Layout

3.3 Parts Replacement Method

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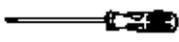
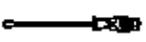
Chapter E Multi-Purpose Feeder Maintenance

- (1) Parts replacements must be carried out, by first turning the printer power switch off "O" and removing the Multi-Purpose Feeder from the printer.
- (2) Do not disassemble the Multi-Purpose Feeder if it is operating normally.
- (3) Establish the extent of disassembly suitable for the purpose of the procedure, and do not disassemble any more than necessary.
- (4) Only specified service tools may be used.
- (5) Disassembly must be carried out according to the prescribed procedures. Parts may be damaged if such procedures are not followed.
- (6) Small parts such as screws and collars can easily be lost, therefore these parts should be temporarily fixed in the original location.
- (7) When handling printed circuit boards, do not use any glove which may generate static electricity.
- (8) Do not place the printed circuit boards directly on the equipment or floor.

[Service Tools]

Table 3-1 shows the tools required for the replacement of printed circuit boards, assemblies and units in the field.

Table 3-1 Service Tools

No.	Service Tools	Q'ty	Application	Remarks
1	 No. 1-100 Philips screwdriver	1	2 ~ 2.5 mm screws	
2	 No. 2-100 Philips screwdriver	1	3 ~ 5 mm screws	
3	 No. 3-100 screwdriver	1		
4	 No. 5-200 screwdriver	1		
5	 Digital multimeter	1		
6	 Pliers	1		
7	 Handy cleaner	1		

This section describes the layout of the main components.

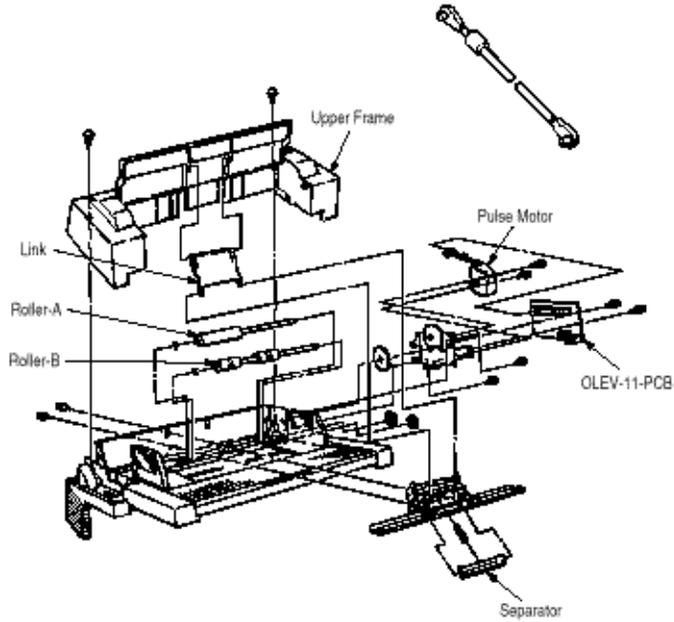


Fig. 3-1

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Chapter E Multi-Purpose Feeder Maintenance

This section describes the parts replacement methods for the components listed in the disassembly order diagram below.

Multi-Purpose Feeder

Link (3.3.1)

Separator (3.3.2)

OLEV-11-PCB (3.3.3)

Pulse motor (3.3.4)

Planet gear (3.3.5)

Roller-A (3.3.6)

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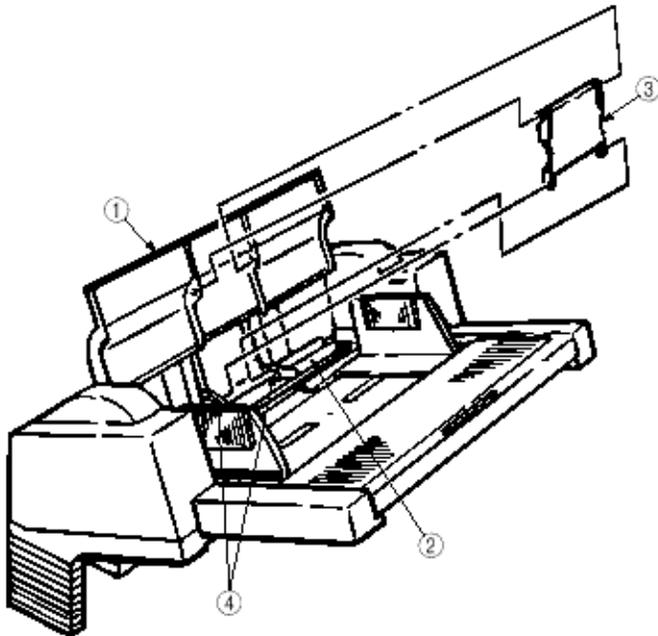
Chapter E Multi-Purpose Feeder Maintenance

(1) Open paper feed cover (1), and disengage the paper feed cover (1) and link (3), while lifting the paper hold (2).

(2) Remove the paper hold (2) off the arm (4).

(3) Disengage the link (3) from the arm (4), and remove it.

* Be careful not to deform the link and arm.

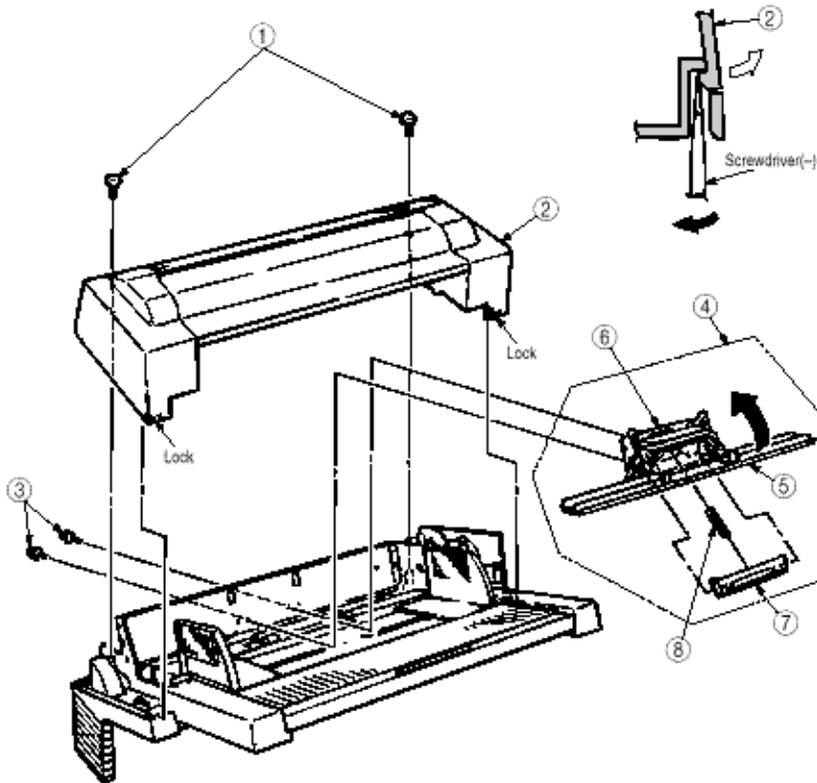




Service Manual - OKIPAGE10i

Chapter E Multi-Purpose Feeder Maintenance

- (1) Turn the power switch off "O" and remove the connector cable.
- (2) Disengage the link and paper feeder cover (see 3.3.1).
- (3) Remove (2) screws (1), disengage the locks at (2) locations on the upper frame (2) with a screwdriver, and remove the upper frame (2).
- (4) Remove (2) screws (3), and take out the separator assembly (4).
- (5) Disengage the separator (7) from the separator bracket (6) while lifting the paper hold (5), and take out the separator (be careful not to lose the spring (8) when you are doing this).



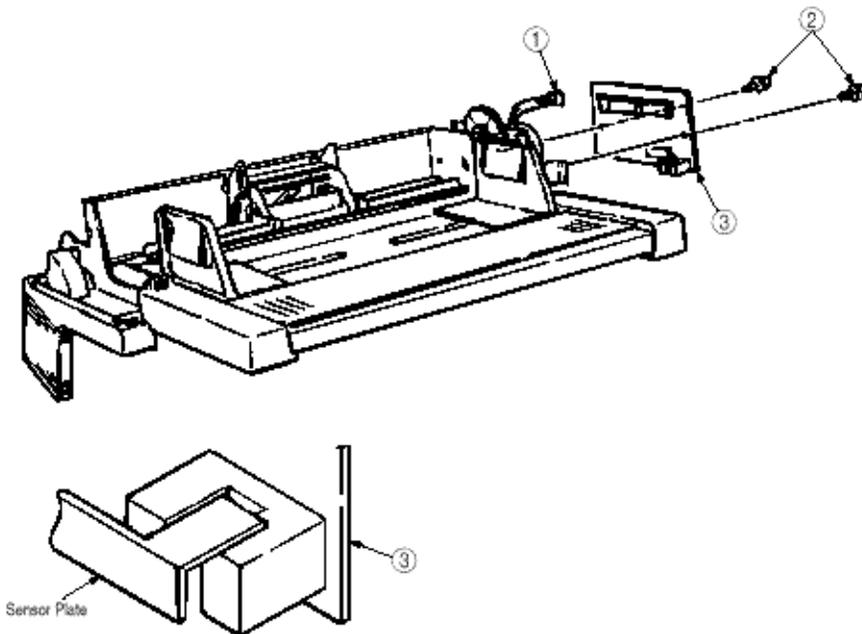


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Chapter E Multi-Purpose Feeder Maintenance

- (1) Remove the upper frame [see 3.3.2 steps (1) through (3)].
- (2) Remove the connector (1).
- (3) Remove (2) screws (2), and remove the OLEV-11 PCB (3).

When reinstalling the printed circuit board, be careful to make sure that the sensor plate is being set correctly.



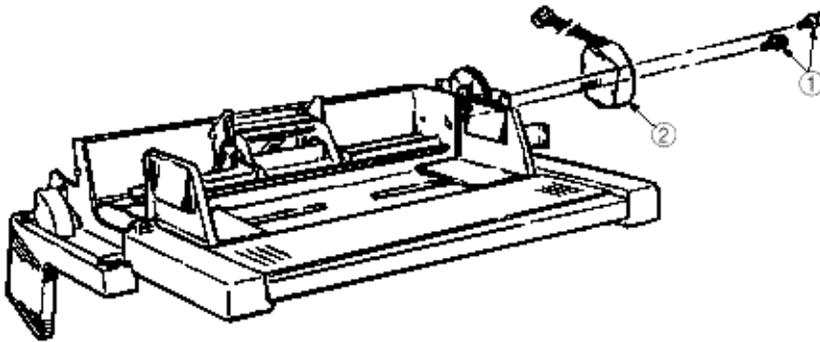
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Chapter E Multi-Purpose Feeder Maintenance

-
- (1) Remove the upper frame [see 3.3.2 steps (1) through (3)].
 - (2) Remove the OLEV-11-PCB (see 3.3.3).
 - (3) Remove (2) screws (1), and remove the pulse motor (2).



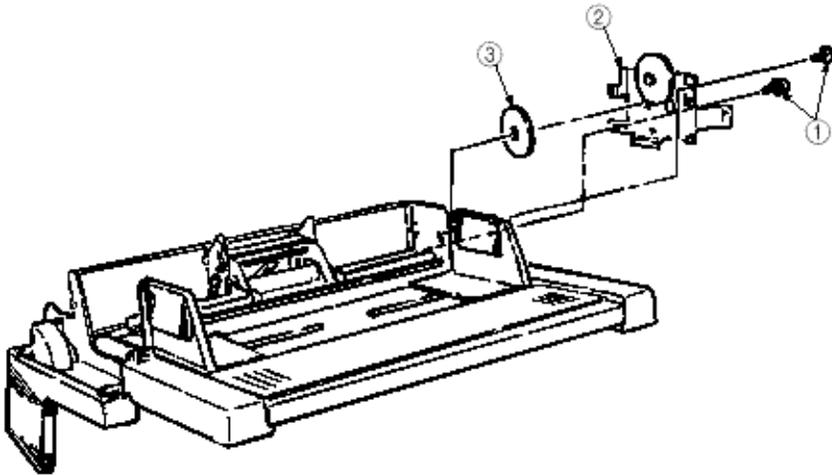
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Chapter E Multi-Purpose Feeder Maintenance

-
- (1) Remove the upper frame [see 3.3.2 steps (1) through (3)].
 - (2) Remove the OLEV-11-PCB (see 3.3.3).
 - (3) Remove (2) screws (1), and remove the motor bracket assembly (2) and planet gear (3).



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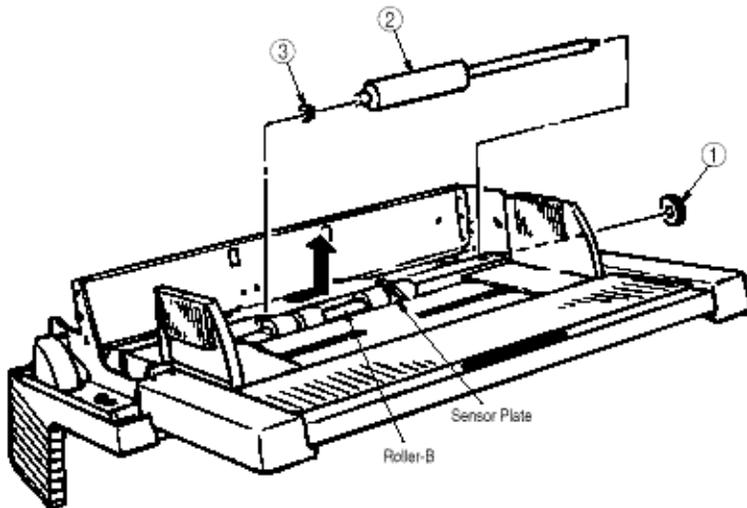


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Chapter E Multi-Purpose Feeder Maintenance

While only the removal procedure for roller-A is described here, the removal procedure for roller-B is basically same. When removing roller-B, however, be careful not to deform the sensor plate.

- (1) Remove the upper frame [see 3.3.2 steps (1) through (3)].
- (2) Remove the separator assembly (see 3.3.2).
- (3) Remove the OLEV-11-PCB (see 3.3.3).
- (4) Remove the motor bracket (see 3.3.5).
- (5) Remove the gear (1).
- (6) Shift the roller-A (2) to the right, lift it on its left side and slide it out (the bearing (3) also comes off while you are doing this, so be careful not to lose it).





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Chapter E Multi-Purpose Feeder Maintenance

4.1 Precautions Prior to the Troubleshooting

4.2 Preparations for the Troubleshooting

4.3 Troubleshooting Method

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- (1) Go through the basic checking items provided in the Printer Handbook.
 - (2) Obtain detailed information concerning the problem from the user.
 - (3) Go through checking in the conditions similar to that in which the problem occurred.
-

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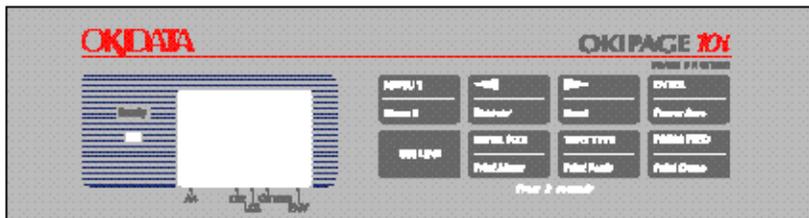
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Chapter E Multi-Purpose Feeder Maintenance

(1) Display on the operator panel

The status of the problem is displayed on the LCD (Liquid Crystal Display) on the operator panel. Go through the appropriate troubleshooting procedures according to the messages displayed on the LCD.

[ODA]



Status message display

Ready LED display

<input type="checkbox"/>	: OFF	<input type="checkbox"/>	: BLINKING
<input type="checkbox"/>	: ON	<input type="checkbox"/>	: Undefined

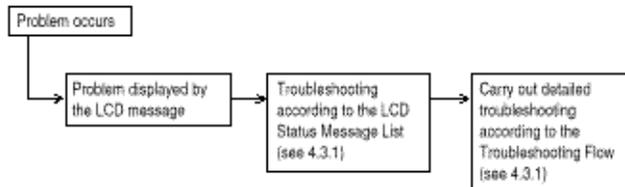
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Chapter E Multi-Purpose Feeder Maintenance

When a problem occurs, go through the troubleshooting according to the following procedure.



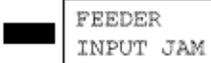
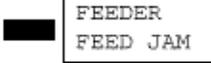
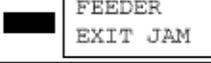
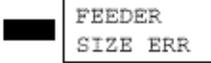
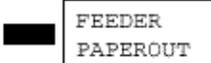
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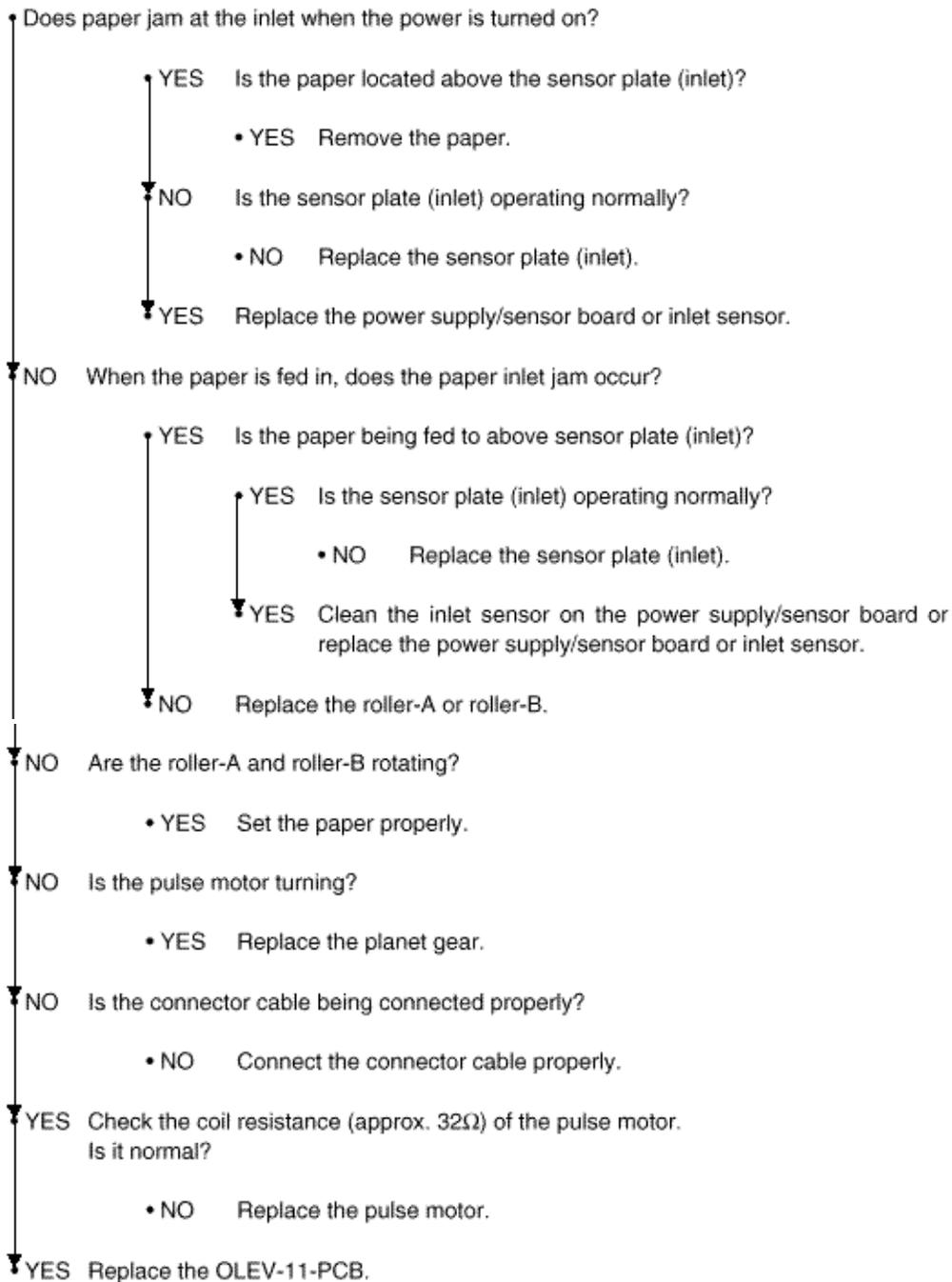
Chapter E Multi-Purpose Feeder Maintenance

The listing of the statuses and problems displayed in the form of messages on the LCD is provided in Table 4-1.

Classification	LCD Status Message	Description	Recovery method
Jam error	  	Notifies of occurrence of jam while the paper is being fed from Multi-Purpose Feeder.	<ul style="list-style-type: none"> • Check the paper in the Multi-Purpose Feeder. • Carry out the recovery printing by opening and closing the cover, and turn the error display off. • When the problem occurs frequently, go through the Troubleshooting.
Paper size error		Notifies of incorrect size paper feeding from Multi-Purpose Feeder.	<ul style="list-style-type: none"> • Check the paper in the Multi-Purpose Feeder. • Also check to see if there was a feeding of multiple sheets. • Carry out the recovery printing by opening and closing the cover, and turn the error display off.
Tray paper out		Notifies of no paper state of the Multi-Purpose Feeder.	<ul style="list-style-type: none"> • Load the paper in Multi-Purpose Feeder.

- (JAM error)

Paper Inlet Jam





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Chapter E Multi-Purpose Feeder Maintenance

5.1 Interconnection Diagram

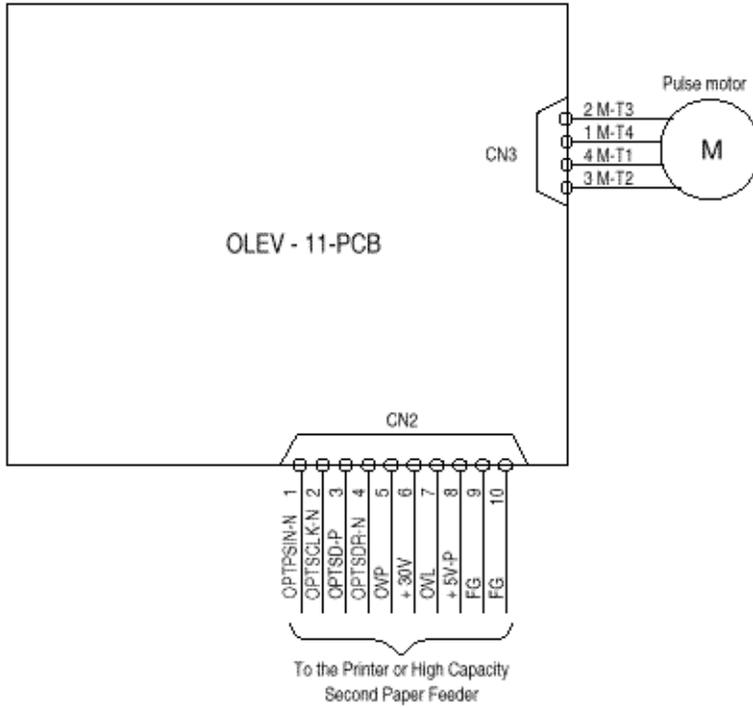
5.2 PCB Layout

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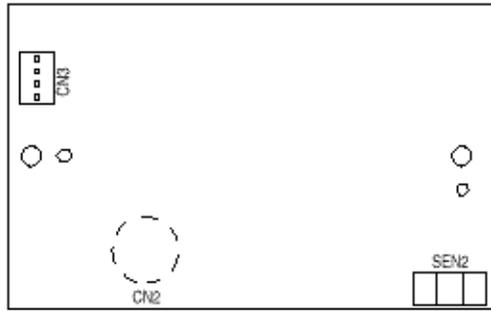




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Chapter E Multi-Purpose Feeder Maintenance

OLEV-11-PCB



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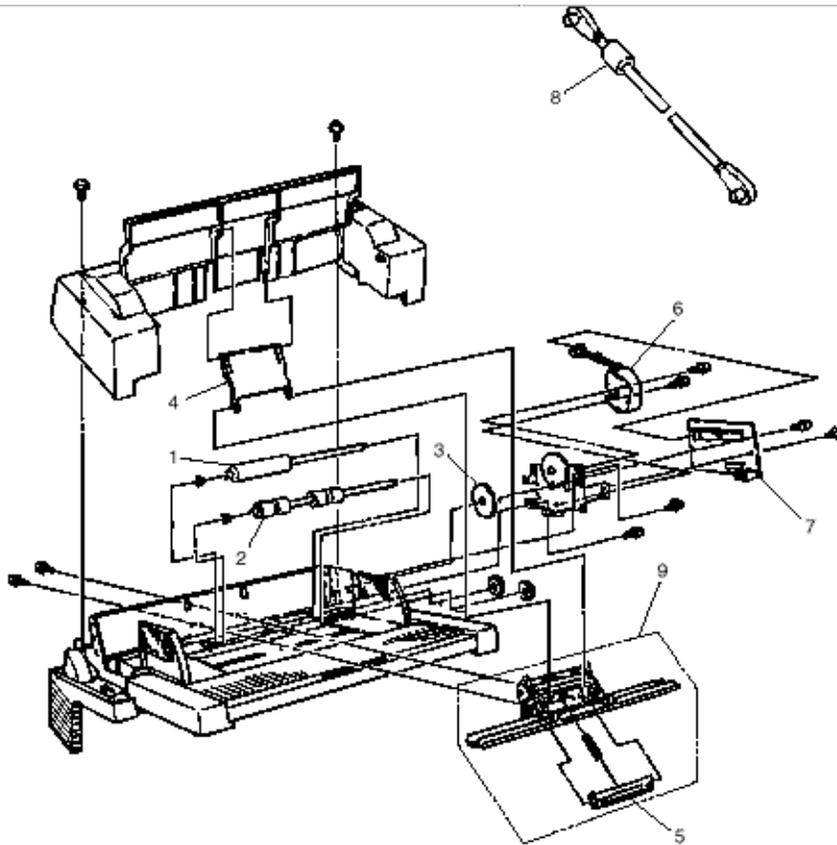


Fig. 6-1 Multi-Purpose Feeder

No.	Description	OKI-J Part No.	ODA Part No.	Qty	Remark
1	Roller-A	3PB4083-5514P1		1	
2	Roller-B	3PB4083-5524P1		1	
3	Planet gear	4PP4083-5520P1		1	
4	Link	3PP4083-5540P1		1	
5	Separator	4PP4083-5544G1		1	
6	Pulse motor	4PB4083-6075P1		1	same as printer unit.
7	OLEV-11-PCB	4YA4121-1014G1 1		1	
8	Connector cable	3YS4011-3141P3		1	
9	Separator assy	3PA4083-5549G1		1	

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Service Manual - OKIPAGE10i
Chapter F High Capacity Second Paper Feeder M/M

This Maintenance Manual is intended for the maintenance personnel and describes the field maintenance methods for High Capacity Second Paper Feeder option of OKIPAGE 10i Series LED Page Printer.

Refer to the Printer Handbook for equipment handling and operation methods.

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Chapter F High Capacity Second Paper Feeder M/M

1.1 Functions

1.2 External View and Component Names

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Chapter F High Capacity Second Paper Feeder M/M

The printer is mounted on top of this High Capacity Second Paper Feeder. The High Capacity Second Paper Feeder supplies paper automatically through the operation of pulse motor (hopping), which is driven by signals sent from the printer.

The main functions are the followings:

- Paper that can be used:

[Paper Type]

- Standard paper: Xerox 4200 (20-lb)
- Special paper: OHP sheets (for PPC), Label sheets (PPC sheets); use of envelopes or thick paper is not possible.
- Cut sheet size: A4, A5, B5, Letter, Executive, Legal13, Legal14
- Special size: Paper width: 148 to 216mm; Paper length: 210 to 355.6mm

[Weight]

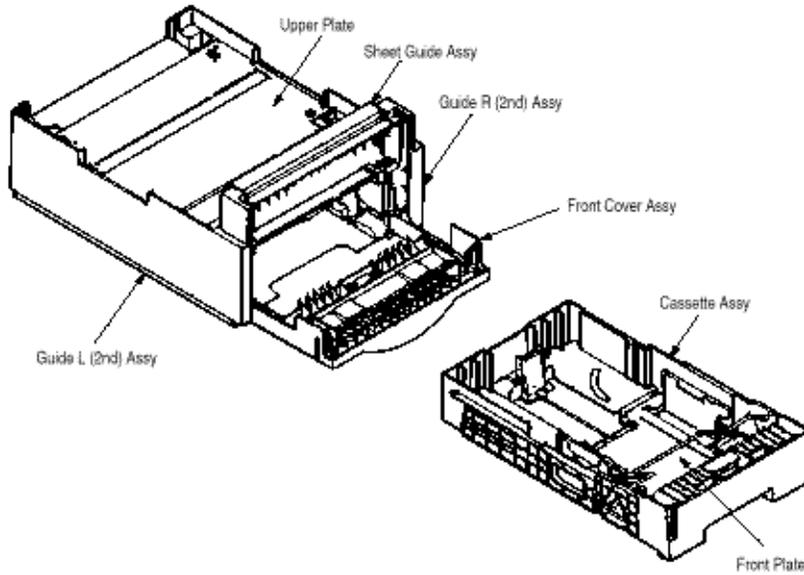
- 16-lb to 24-lb (60 to 90 g/m²)
 - Paper setting quantity: 500 sheets of paper weighing 64 g/m²
-

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Chapter F High Capacity Second Paper Feeder M/M



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Chapter F High Capacity Second Paper Feeder M/M

2.1 General Mechanism

2.2 Hopper Mechanism

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Chapter F High Capacity Second Paper Feeder M/M

The High Capacity Second Paper Feeder feeds the paper into the printer by receiving the signal from the printer, which drives the pulse motor inside the High Capacity Second Paper Feeder, and this motion is transmitted to rotate the one-way clutch of the hopping frame assembly. The paper is delivered from the hopper into the printer through the turning of the hopping roller and feed roller.

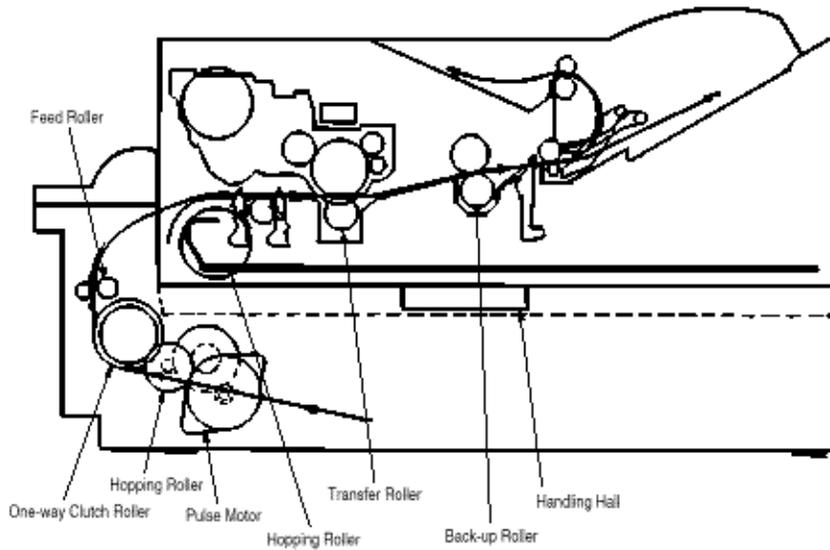
Once delivered into the printer, the paper is then controlled and fed through by pulse motor (registration) of the printer.

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Chapter F High Capacity Second Paper Feeder M/M



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Chapter F High Capacity Second Paper Feeder M/M

This section covers the procedures for the disassembly, reassembly and installations in the field. This section describes the disassembly procedures, and for reassembly procedures, basically proceed with the disassembly procedures in the reverse order.

3.1 Precautions Concerning Parts Replacement

3.2 Parts Layout

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Chapter F High Capacity Second Paper Feeder M/M

- (1) Parts replacements must be carried out, by first turning the printer power switch off "O" and removing the printer from the High Capacity Second Paper Feeder.
- (2) Do not disassemble the High Capacity Paper Feeder if it is operating normally.
- (3) Establish the extent of disassembly suitable for the purpose of the procedure, and do not disassemble any more than necessary.
- (4) Only specified service tools may be used.
- (5) Disassembly must be carried out according to the prescribed procedures. Parts may be damaged if such procedures are not followed.
- (6) Small parts such as screws and collars can easily be lost, therefore these parts should be temporarily fixed in the original location.
- (7) When handling printed circuit boards, do not use any glove which may generate static electricity.
- (8) Do not place the printed circuit boards directly on the equipment or floor.

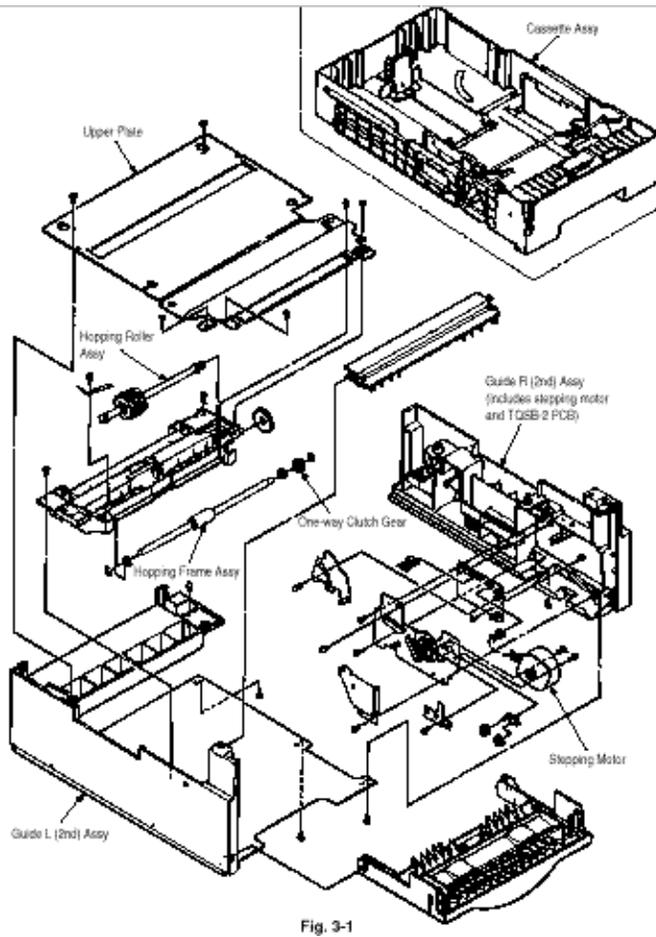
[Service Tools]

Table 3-1 shows the tools required for the replacement of printed circuit boards, assemblies and units in the field.

Table 3-1 Service Tools

No.	Service Tools	Q'ty	Application	Remarks
1	 No. 1-100 Philips screwdriver	1	2 ~ 2.5 mm screws	
2	 No. 2-100 Philips screwdriver	1	3 - 5 mm screws	
3	 No. 3-100 screwdriver	1		
4	 Digital multimeter	1		
5	 Pliers	1		

This section describes the layout of the main components.



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Chapter F High Capacity Second Paper Feeder M/M

This section describes the parts replacement methods for the components listed in the disassembly order diagram below.

Stepping motor (hopping) (3.3.1)

TSQN-2 PCB (3.3.2)

Hopping roller shaft assy and One-way clutch gear (3.3.3).

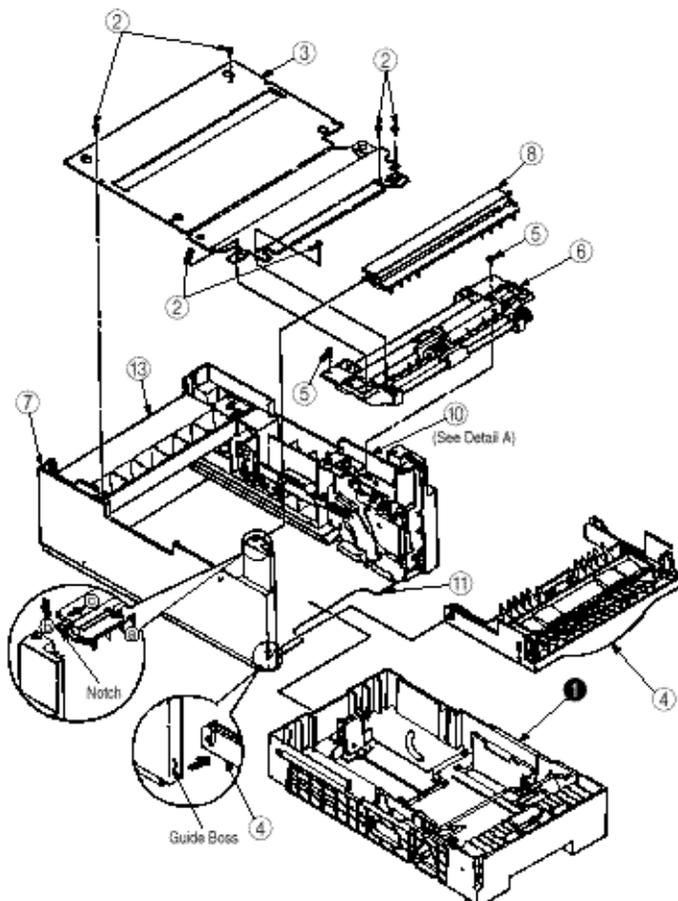
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Chapter F High Capacity Second Paper Feeder M/M

- (1) Turn the printer power switch off, pull out the AC cord from the outlet. Remove the printer off High Capacity Second Paper Feeder.
- (2) Take the paper cassette assy (1) out of High Capacity Second Paper Feeder.
- (3) Remove six screws (2) and remove the upper plate (3). Remove two screws (5) and remove the hopping frame assy (6).
- (4) Remove the front cover assy (4) off the guide boss on the guide L (2nd) assy (7) by bending the guide L (2nd) assy (7) in the direction of arrow shown in the magnified view below.
- (5) Pull the sheet guide assy (8) in the direction of arrow (a) and also push in the direction of arrow (b) to unlock the notch, and bring the sheet guide assy (8) in the direction of arrow (c) to remove the sheet guide assy (8).



- (6) Remove three screws (9) which are holding the guide R (2nd) assy (10) to the bottom plate (11). Remove the screw (12) which is keeping the rear cover (13) and guide R (2nd) assy (10). Remove the

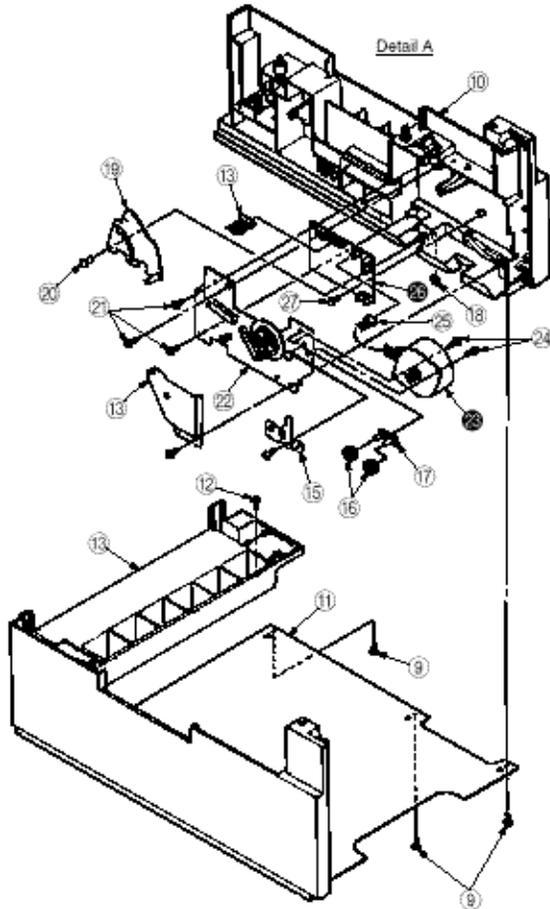
guide R (2nd) assy (10).

(7) Remove the protect (M) (14), guide bracket (15), planet gears (16) and planet gear bracket (17).

(8) Remove the E-ring (18) which is keeping the sheet link (19) on the guide R (2nd) assy (10), and pull out the hinge stand (20).

(9) Remove three remaining screws (21) which are keeping the motor on the motor bracket (22), and remove the connector off the Stepping Motor (23).

(10) Remove two screws (24) on the Stepping Motor (23).





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Chapter F High Capacity Second Paper Feeder M/M

- (1) Remove the pulse motor (see 3.3.1).
- (2) Remove the connector (25) from the TQSB-2 PCB (26).
- (3) Remove the screw (27) and remove the TQSB-2 PCB (26).

Note: Refer to Detail A in the previous section of this chapter (see 3.3.1).

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Chapter F High Capacity Second Paper Feeder M/M

(1) Follow up to step (3) of 3.3.1 and remove the hopping frame assy.

(2) Remove the screw (1) and remove the earth plate (2). Remove the sensor lever (7) and remove the ground plate (6). Remove the gear (3) and remove the metal bush (5) and hopping roller shaft assy (4).

(3) Remove the E-ring (11) and remove the one-way clutch gear (12) on the right side of the feed roller (10).

Note: The metal bush (13) also comes off. Be careful not to lose it.

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Chapter F High Capacity Second Paper Feeder M/M

4.1 Precautions Prior to the Troubleshooting

4.2 Preparations for the Troubleshooting

4.3 Troubleshooting Method

4.3.1 LCD Status Message List

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- (1) Go through the basic checking items provided in the Printer Handbook.
 - (2) Obtain detailed information concerning the problem from the user.
 - (3) Go through checking in the conditions similar to that in which the problem occurred.
-

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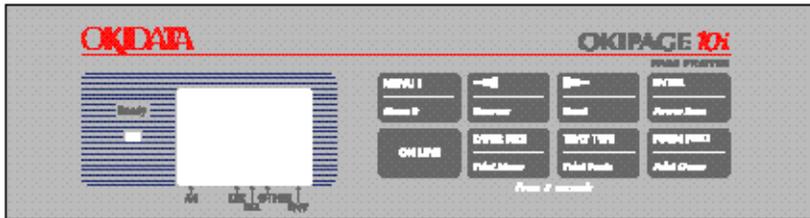


Service Manual - OKIPAGE10i

Chapter F High Capacity Second Paper Feeder M/M

(1) Display on the Operator panel

The status of the problem is displayed on the LCD (Liquid Crystal Display) on the Operator panel. Go through the appropriate troubleshooting procedures according to the messages displayed on the LCD.



Status message display

Ready LED display

 : OFF	 : BLINKING
 : ON	 : Undefined

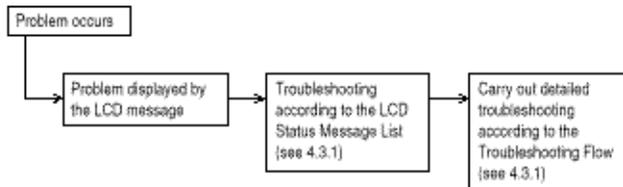
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When a problem occurs, go through the troubleshooting according to the following procedure.



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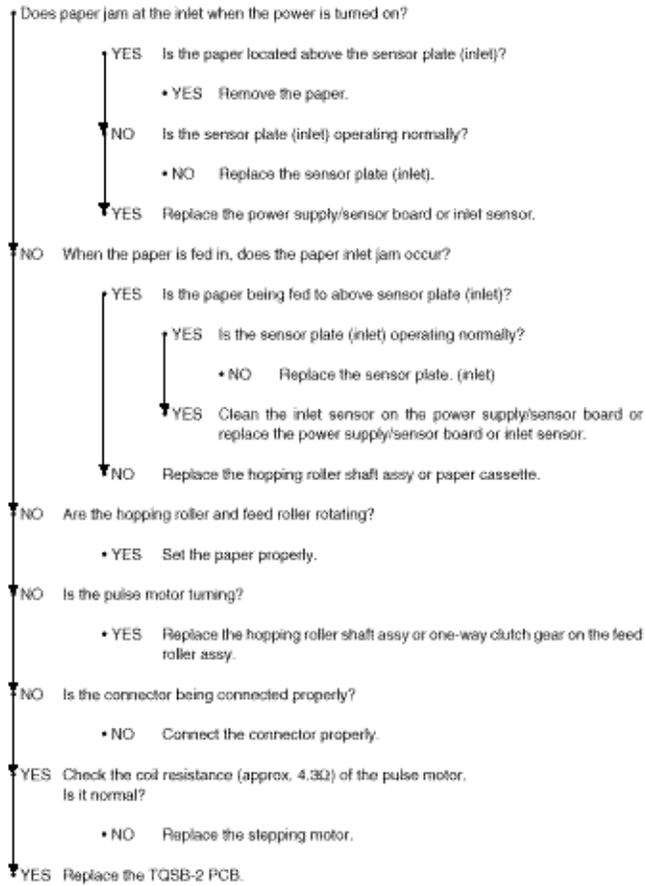
Service Manual - OKIPAGE10i

Chapter F High Capacity Second Paper Feeder M/M

Classification	LCD Status Message	Description	Recovery method
Jam error (feeding)	 <div style="border: 1px solid black; padding: 2px; display: inline-block;"> TRAY2 FEED JAM </div>	Notifies of occurrence of jam while the paper is being feed from High Capacity Second Paper Feeder.	- Check the paper in the High Capacity Second Paper Feeder. carry out the recover printing by opening and closing the cover, and turn the error display off. - When the problem occurs frequently, go through the Troubleshooting.
Jam error (ejection)	 <div style="border: 1px solid black; padding: 2px; display: inline-block;"> TRAY2 EXIT JAM </div>	Notifies of occurrence of jam while the paper is being ejected from the printer.	- Check the paper in the printer. Carry out the recovery printing by opening and closing the cover, and turn the error display off.
Paper size error	 <div style="border: 1px solid black; padding: 2px; display: inline-block;"> TRAY2 EXIT JAM </div>	Notifies of incorrect size paper feeding from High Capacity Second Paper Feeder.	- Check the paper in the High Capacity Second Paper Feeder. Also check to see if there was a feeding of multiple sheets. Carry out the recovery printing by opening and closing the cover, and turn the error display off.
Tray paper out	 <div style="border: 1px solid black; padding: 2px; display: inline-block;"> TRAY2 PAPEROUT </div>	Notifies of no paper state of the High Capacity Second Paper Feeder.	- Load the paper in High Capacity Second Paper Feeder.
Paper size request	 <div style="border: 1px solid black; padding: 2px; display: inline-block;"> TRAY2 OOOREQUEST </div> 000 : Papre size (A4, Letter, Legal, etc.)	Notifies of correct paper size for the High Capacity Second Paper Feeder.	- Load the requested size in the High Capacity Second Paper Feeder.

- (JAM error)

Paper Inlet Jam



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Chapter F High Capacity Second Paper Feeder M/M

5.1 Interconnection Diagram

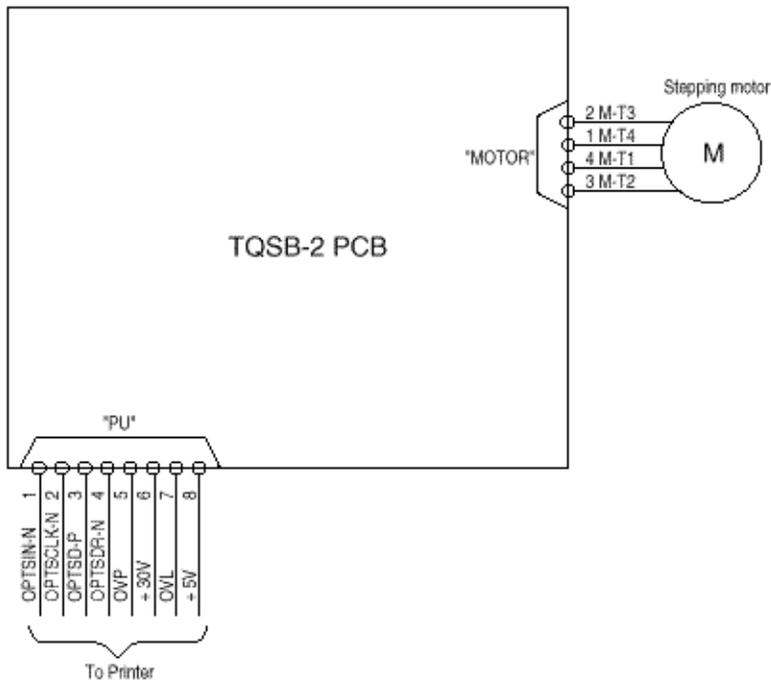
5.2 PCB Layout

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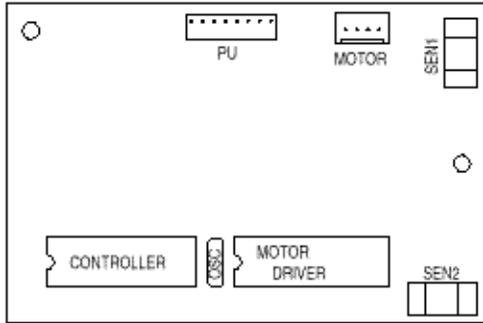




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TQSB-2 PCB



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High Capacity Second Paper Feeder

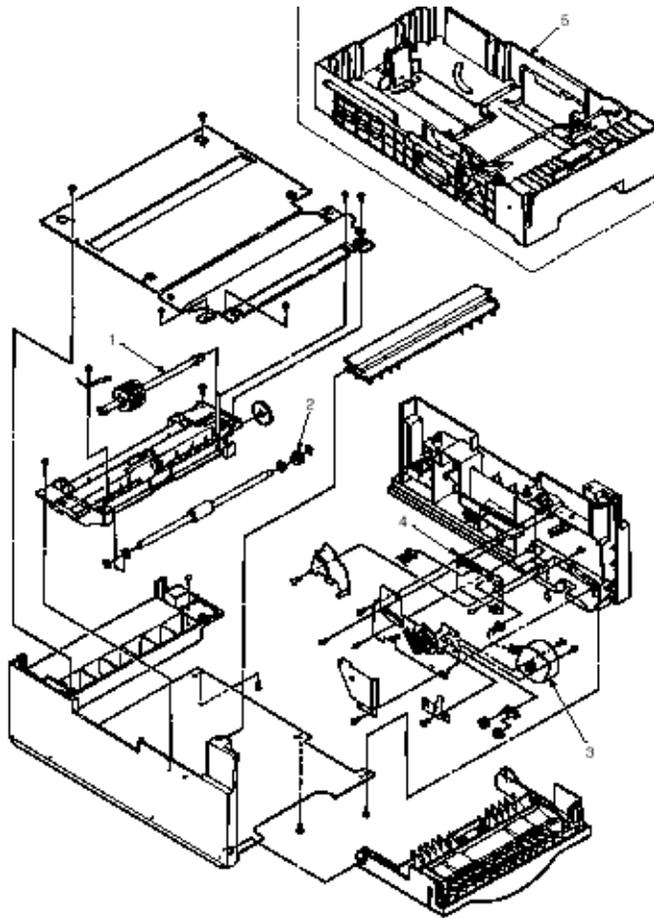
2nd Tray Assembly

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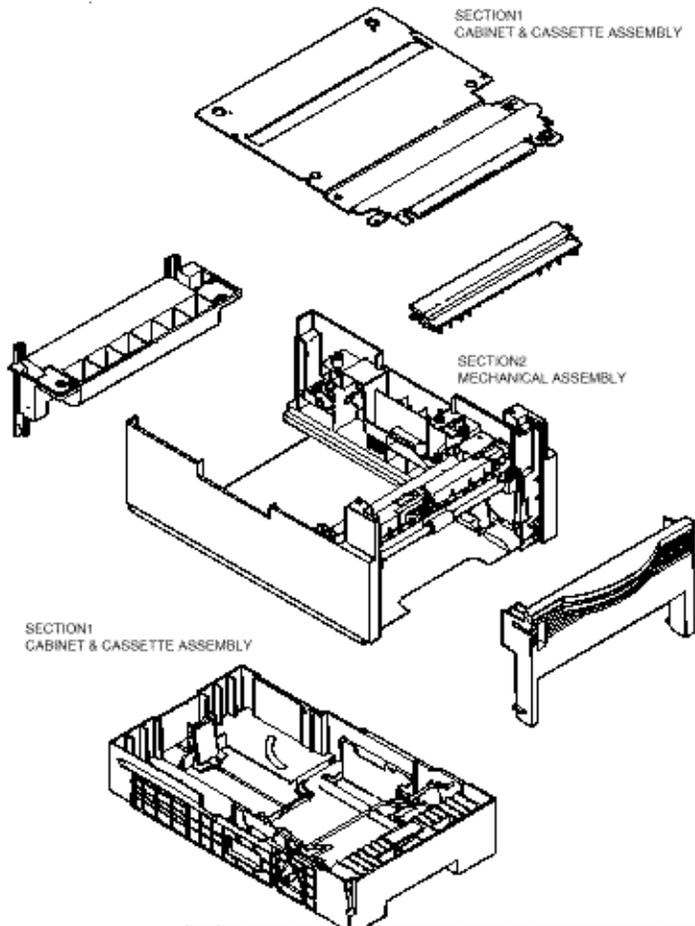


No.	Description	OKI-J Part #	Qty
1	Hopping roller shaft assy	3PA4122-1367G1	1
2	One-way clutch gear	4PB4122-1382P1	1
3	Stepping motor	3PB4122-1399P1	1
4	TQSB-2 PCB	4YA4046-1651G2	1
5	Cassette assy (2nd tray)	1PA4122-1362G4	1

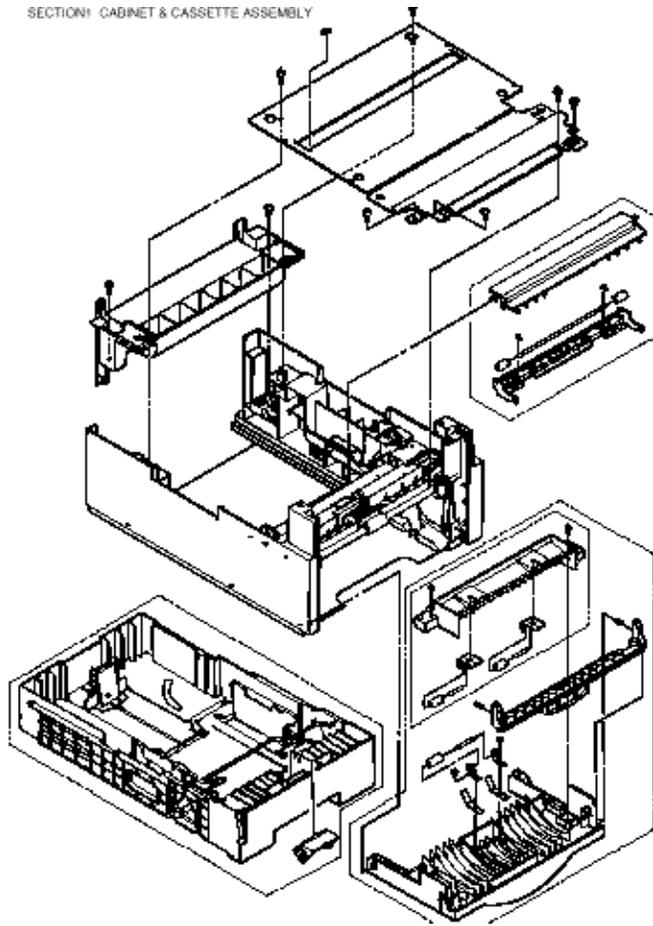


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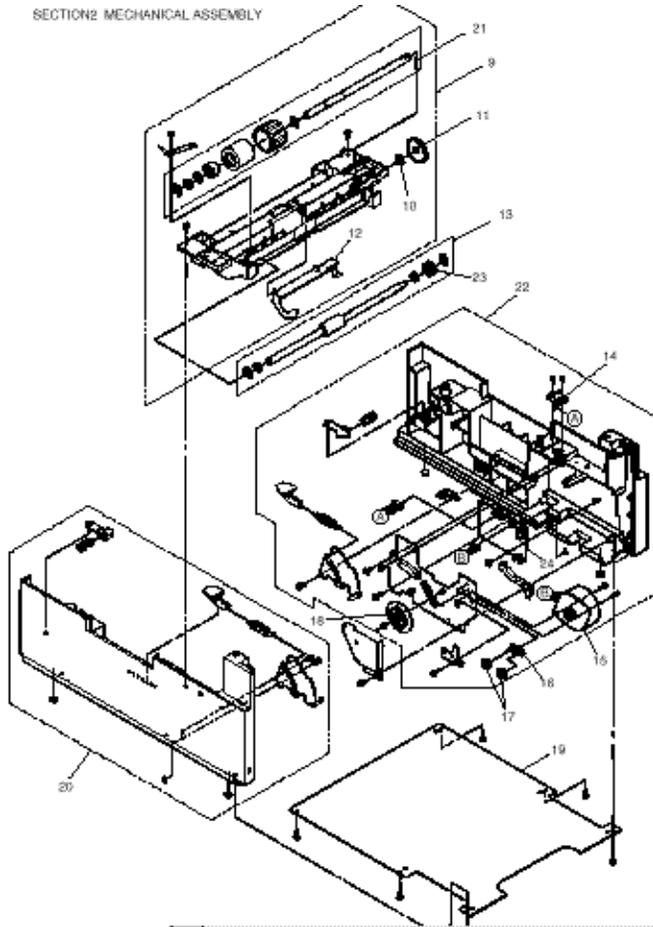
Chapter F High Capacity Second Paper Feeder M/M



SECTION 1: CABINET & CASSETTE ASSEMBLY



SECTION2 MECHANICAL ASSEMBLY



No.	Description	OKI Part No.	Qty/U	500	1000
1	Plate, upper	1PP4122-1401P001	1	3	5
2	Sheet guide assembly	3PA4122-1370G001	1	3	5
3	Front cover assembly	1PA4122-1369G001	1	3	5
4	Inner guide assembly	3PA4122-1371G001	1	3	5
5	Cassette assembly (2nd tray)	1PA4122-1362G004	1	3	6
6	Separation frame assembly	4PP4120-1009G001	1	6	12
7	Cover, rear	1PA4122-1323P001	1	3	5
8	Stick finger	4PB4122-1441P001	1	3	5
9	Hopping flame assembly	1PA4122-1366G001	1	3	6
10	Bush, metal (ADF)	4PP3522-3568P001	1	3	5
11	Gear (z70)	4PP4122-1207P001	1	3	5
12	Lever, sensor (p)	3PP4122-1331P001	1	3	5
13	Feed roller assembly	3PA4122-1393G001	1	3	5
14	Cable & connector	3YS4111-3528P001	1	3	5
15	Stepping motor	3PB4122-1399P001	1	3	6
16	Bracket	4PP4122-1384G001	1	3	5
17	Gear (z24)	4PP4122-1383P001	2	3	5
18	Gear (z87/z60)	4PP4122-1226P001	1	3	5
19	Plate, bottom	2PP4122-1389P001	1	3	5
20	2nd cassette guide (L) assy	1PA4122-1365G001	1	3	6
21	Hopping roller assembly	3PA4122-1367G001	1	3	6
22	2nd cassette guide (R) assy	1YX4122-1364G002	1	3	6
23	One-way clutch gear	4PB4122-1382P001	1	6	12

24	TQSB-2 PCB	4YA4046-1651G002	1	3	6
----	------------	------------------	---	---	---

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Service Manual - OKIPAGE10i

Chapter G Network Interface (Option)

1) Connector

- 8-pin modular jack

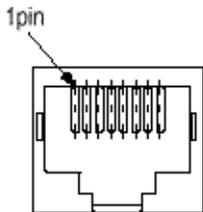
2) Cable

- 10BASE/T

3) Signal

Contact No.	Plug	Jack	Polarity
1	Power feeder3	--	+
2	Power feeder3	--	-
3	Send	Receive	+
4	Receive	Send	+
5	Receive	Send	-
6	Send	Receive	-
7	Power feeder2	Power feeder2	-
8	Power feeder2	Power feeder2	+

4) Appearance



5) Physical dimensions

a) Transmission method by CSMA/CD

b) Transmission protocol

Packet type	Support	Remarks
Ethernet II	<input type="radio"/>	
IEEE802.3	<input type="radio"/>	
IEEE802.3+IEEE802.2	<input type="radio"/>	
IEEE802.3+IEEE802.2+SNAP	<input type="radio"/>	

6) List of protocols

Data link layer	Ethernet(DIX), IEEE802.3, IEEE802.2, SNAP
Network layer	IP, ARP, RARP, ICMP, IPX, DDP, AARP, DHCP
Transport layer	TCP, UDP, SPX, PXP,(NCP), ATP, NBP, RTMP
Session layer	LPR, FTP, Telnet, HTTP, SNMP, Q-Server, R-Printer, SAP, PAP, ZIP
(Automatic recognition possible for all layers)	

7) TCP/IP

a) Support OS

SunOS 4.1.1, SunOS 4.1.2, SunOS 4.1.3
 Solaris 2.1, Solaris 2.2, Solaris2.4, Solaris2.5
 HP-UX 9.X
 Windows3.0+TCP/IP
 Windows3.1+TCP/IP
 Windows3.11+TCP/IP
 Windows95
 WindowsNT 3.5+TCP/IP
 WindowsNT 3.5.1
 WindowNT 4.0

b) LPR

The LPR is an application to process the print data. The LPR of this system supports multiple clients. Furthermore, it provides multiple connections for one client.

Item	Factory default	Setup range	Description
Number of clients connected	1 to 4 clients	1 to 4 clients	Indicates the number of clients which can be connected simultaneously. Allows simultaneous connection of a maximum of four clients.

First command character	LPR option	Objective	Support
H	Specify by default.	Host name of the machine to which the LPR is called. Host name is printed on the banner sheet.	<input type="radio"/>
P	Specify by default.	Log-in name of the user having called the LPR. Use name printed on the banner sheet.	<input type="radio"/>
J	Specify by J-option.	Job name printed on the banner sheet. Default: file name	<input type="radio"/>
C	Specify by C-option.	Job type printed on the banner sheet. Default: System name	<input type="radio"/>
L	Specify by default. Cancel the specification by -h option.	Specify literal banner sheet printing.	<input type="radio"/>

f	Specify the number of volumes by -# option.	Name of the data file to be printed. The number of character strings of this command values according to the number of volumes. (Not supported).	<input type="radio"/>
U	Specify by default.	Name of the file to be deleted with completion of printing.	---
I	Specify by -i option.	Number of indent characters in the output line.	---
W	Specify by -w option.	Specify page width.	---
M	Specify by -m option.	Specify sending of mail with completion of printing.	---
S	Specify by -s option.	Specify the symbolic link to the data file.	<input type="radio"/>
1/2/3/4	Specify by the -1/-2/-3/-4 options.	Specify the font.	---

c) FTP

FTP is an application to process the print data. The FTP of this system supports multiple of clients. Furthermore, it provides multiple connections for one client.

Item	Factory default	Setup range	Description
Number of clients connected		1 to 4 clients	Indicates the number of clients which can be connected simultaneously. Allow simultaneous connection of a maximum of four clients.
Expiration of idle time	90 sec.	1 to 3000 sec.	Indicates the time when the idle time of the connect clients expires.

d) Telnet

Telnet is an application to reference and change the menu of the Network/Printer. The TELNET of this system supports simultaneous connection of multiple clients for the personal user. Furthermore, it provides multiple connections for one client. But it cannot provide two or more simultaneous connections for super users.

Item	Factory default	Setup range	Description
Number of connected clients		1 to 2 clients	Indicates the number of clients which can be connected simultaneously. Allow simultaneous connection of a maximum of four clients.
Terminal mode	VT-100	VT-100	Indicates the control mode of the terminal of the connected client. Only the VT-100 alone is the support terminal mode.
Number of columns	80 columns	80 columns	Indicates the number of the digits of the terminal of the connected clients. The number of the support digits is fixed at 80.
Number of rows	25 rows	25 rows	Indicates the number of the digits of the terminal of the connected client. The number of the support digits is fixed at 25.

Expiration of idle time	300 sec.	60 to 7200 sec.	Indicates the time when the idle time of the connected clients expires.
-------------------------	----------	-----------------	---

e) HTTP

The HTTP is an application to reference and change the menu of the Network/Printer. The HTTP of this system supports simultaneous connection of multiple clients for the personal user. Furthermore, it provides multiple connections for one client.

Item	Factory default	Setup range	Description
HTTP Version	1.0	1.0	Indicates the version of the HTTP being implemented.

f) SNMP

SNMP is an application to reference and change the menu of the Network/Printer. The SNMP of this system supports simultaneous connection of multiple clients for the personal user. Furthermore, it provides multiple connections for one client.

8) Netware

a) Support OS

Netware File Server 2.2C, 3.X 4.0, 4.1 (Bindery Model/ partly NDS support)

b) R-printer

The R-printer is an application to process the print data. The R-printer of this system supports multiple print serves. Furthermore, it provides one connection for one printer server; it does not allow multiple connections for one printer server.

Item	Factory default	Setup range	Description
Number of connected print servers		1 to 4 servers	Indicates the number of print servers which can be connected simultaneously. Each printer server need not be started in advance. Even when the printer is ready for operation, connection is achieved only by starting the printer server.
Registered print server name	Null character string	Maximum four servers *Maximum 48 characters	Indicates the name of the connected print server. Each print server name can be registered up to a maximum of 48 characters.
Registered printer number	0 for all	For four printers	Indicates the number inside the connected printer server.
Registered printer name	OKIDATA [three least significant bytes for MAC address]	1 to 48 characters	Indicates the printer name. The printer name can be registered up to a maximum of 48 characters.

Connection method	SAP method		Indicates the printer server connection method. The SAP method starts connection using the SAP packet from the printer server.
Support P/S version	1,2 or more		Indicates the version of the connected file server. Connection of 2.15C and 2.2 is not confirmed.
Connection entry	3 times	1 to 10 times	Indicates the number of retries in the even of connection error.

c) Q-Server

The Q-Server is an application to process the print data. The Q-Server of this system supports multiple file serves. Furthermore, it allows connection of multiple print servers for one file server.

Item	Factory default	Setup range	Description
Connection method	Bindery method		Indicates the connection method with the file server. This method use the bindery for communication with the file server.
Number of connected file servers		1 to 4 servers	Indicates the number of the file servers which can be connected simultaneously. Each file server need not be started in advance. Even when the printer is ready for operation, connection is achieved only by starting the file server.
Number of connected queues		1 to 64 queues	Indicates the number of queues which can be connected simultaneously. Each queue is connected after having been registered to the file server to be connected.
Registered file server name	Null character string	Maximum four servers *Maximum 48 characters	Indicates the name of the connected server. Each file server name can be registered up to a maximum of 48 characters.
Registered queue name	Null character string	Maximum 84 queues *Maximum 48 characters	Indicates the name of the connected queue. Each queue name can be registered up to a maximum of 48 characters.
Registered print server name	OKIDATA [three least significant bytes for MAC address]	1 to 48 characters	Indicates the printer server name. Each file server uses the registered file server name. A separate print server name cannot be specified for each file server.
Support F/S version	2.2C, 3.1X, 4.0, 4.1		Indicates the file server version. Connection of 2.15C and 2.2 is not confirmed.
Polling intervals	5 sec.	1 to 60 sec.	Indicates the time of job search intervals for each queue in idle time.
Connection retry	3 times	1 to 10 times	Indicates the number of retries in the event of connection error.

9) EtherTalk

a) Support OS

System7.0, 7.1, 7.1.X

System7.5, 7.5.1, 7.5.2, 7.5.3, 7.5.5

MAC OS7.6

b) PAP

The PAP is an application to process the print data.

Item	Factory default	Setup range	Description
Number of connected clients	1 client	1 client	Indicates the number of clients which can be connected simultaneously. Simultaneous connection is possible up to one client.
Printer name	OKIPAGE 10i	One item by max. 36 characters	Indicates the printer name which can be set on the printer.
Zone name		One item by max. 36 characters	Indicates the zone to which the printer belongs.

10) OKI Original Port

The OKI Original Port provides special processing which is beyond the scope of normal menu operation.

Item	Description
Initial recognition	Executes the processing of finding out the printer by the setup utility when the printer is connected to the network.
Flash Down Load	Provides download processing of the program for the flash ROM.
PJL command/response	Serves as a PJL port to send and receive the PJL command.

11) Others

a) Hot Protocol

The Hot Protocol provides a function of simultaneous meeting of requests for connection from multiple clients using different transport layer protocols.

b) Multi-user

The Multi-user provides a function of simultaneous meeting of requests for connection from multiple clients using the same transport layer protocol.

c) Permissible connection

	Number of connections	Remarks
Total number of connections	10	

Number of connections for simultaneous use of management APs (Telnet, SMP, Web, OKI Original Port)	2	
Number of connections for simultaneous use of printing APs	8	

12) Setup

Each setup item can be set by the menu and network management tool.

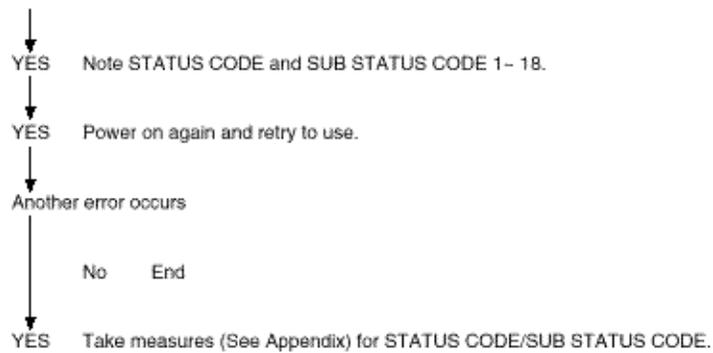
Classification	Setup item	Menu change	Management tool change	Description
Common	Network valid/invalid	<input type="radio"/>	<input type="radio"/>	Valid/Invalid for entire network
	Frame type	X	X	Frame type for transmission and reception
TCP/IP	TCP/IP valid/invalid	<input type="radio"/>	<input type="radio"/>	TCP/IP valid/invalid
	IP address	<input type="radio"/>	<input type="radio"/>	
	IP subnet mask	<input type="radio"/>	<input type="radio"/>	
	Default gateway	<input type="radio"/>	<input type="radio"/>	
Netware	Netware valid/invalid	<input type="radio"/>	<input type="radio"/>	Netware valid/invalid
	Netware mode	X	<input type="radio"/>	R-Printer/Q-server
	Network address	X	X	
	Q-server print server name	X	<input type="radio"/>	
	Q-server connection file server name	X	<input type="radio"/>	
	Q-server polling rate	X	<input type="radio"/>	
	R-Printer printer name	X	<input type="radio"/>	
	R-Printer connection print server name	X	<input type="radio"/>	
	R-Printer connection print server name	X	<input type="radio"/>	
AppleTalk	EtherTalk valid/invalid	X	<input type="radio"/>	EtherTalk valid/invalid
	printer name	X	<input type="radio"/>	
	EtherTalk zone name	X	<input type="radio"/>	Name of the zone to which the printer belongs.

13) TROUBLESHOOTING

a) Basic Procedure

Processing flow after the occurrence of an error

An error occurs (operator panel indicates "HOST I/F ERROR" or the function would not perform normally.)



b) Checking STATUS CODE/SUB STATUS CODE

If a communication error occurs in sending/receiving in this Network card, the LCD panel will display "HOST I/F ERROR". In this case, check the error status in the following procedure for handling.

Also, When each function does not perform, Be sure to note this code.

(SUB STATUS CODE might include values which indicate other statuses but error.)

(1) Press "Recover" button for 2 seconds or more to release the error.

(2) Press "MENU 1" button for 2 seconds or more under the OFF-LINE state to make a shift to level 2 menu setting. after that, "PRINT MODE" is indicated.

(3) Press "MENU 1" button repeatedly until "NETWORK" is indicated and press "ENTER" button to go to Network setting mode.

(4) Press "MENU 1" button repeatedly until "MAINTENANCE" is indicated, and pressing "ENTER" button, "STATUS" will be indicated. At this time, the figures which indicate the type of error appears in the lower part of LCD.

(5) And then, when pressing "«" and "»" button, the detailed SUB STATUS CODE from "STATUS 1" to "STATUS 18" will be indicated in numeric figure. Address each of them by referring to Appendix, STATUS CODE corresponding table as well as the figures of 'STATUS' described above.

(6) Press "ON-LINE" button to pass the menu setting mode back to the idle state.

c) Viewing STATUS CODE/SUB STATUS CODE

How to view the area indicating "STATUS" in Network menu is shown below.

This area comprises of 4 bytes and can hold 4 error states which have occurred recently.

The figures which are indicated in 1st byte area in Figure represent the oldest error among 4 ones. The figures which are indicated in 4th byte area represent the newest error.

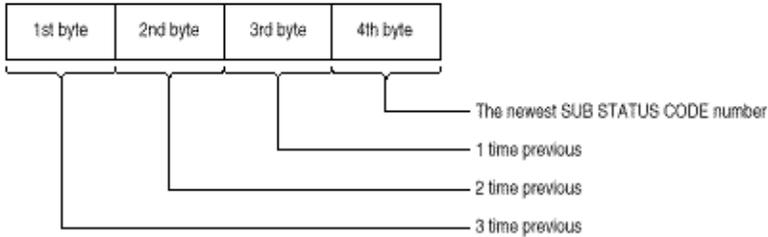
Numeric figures indicated in each byte represent a SUB STATUS CODE number.

In other words, if "STATUS" indicates 00021509, the error which occurred last is "STATUS 09" and the one before it is "STATUS 15", and the one before the previous one "STATUS 02".

In this case, as the 1st byte is 00 (no error), it can be found out that the "STATUS 02" is the oldest error.

Also, if all 4 areas (4 bytes) have been used, an item of another error which occurs next would not be registered.

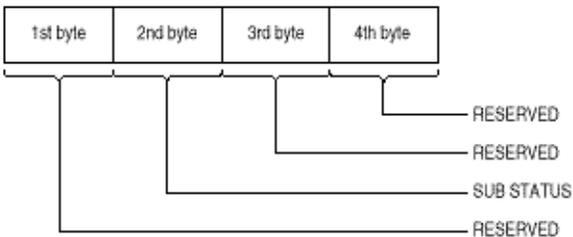
As the oldest error is generally the main reason in most cases, take note of this value.



How to view each SUB STATUS CODE is indicated in the followings.

Although SUB STATUS CODE also comprises of 4 bytes, SUB STATUS CODE is 2nd byte.

See the appendix for details of SUB STATUS CODE.



NIC driver				
Status code	Sub status	Error type	Contents	Handling
01	01, 06	Significant problem	Program error (there is possibility of program malfunction or RAM breakage)	Update of Network Program, or replacement of printer main PCB

Network driver				
Status code	Sub status	Error type	Contents	Handling
02	01	Significant problem	Program error (there is possibility of program malfunction or RAM breakage)	Update of Network Program, or replacement of printer main PCB

IP				
Status code	Sub status	Error type	Contents	Handling

03	01	Significant problem	Program error (there is possibility of program malfunction or RAM breakage)	Update of Network Program, or replacement of printer main PCB
----	----	---------------------	---	---

IPX

Status code	Sub status	Error type	Contents	Handling
04	01	Significant problem	Program error (there is possibility of program malfunction or RAM breakage)	Update of Network Program, or replacement of printer main PCB

UDP

Status code	Sub status	Error type	Contents	Handling
05	01	Significant problem	Program error (there is possibility of program malfunction or RAM breakage)	Update of Network Program, or replacement of printer main PCB

UDP

Status code	Sub status	Error type	Contents	Handling
05	01	Significant problem	Program error (there is possibility of program malfunction or RAM breakage)	Update of Network Program, or replacement of printer main PCB

TCP

Status code	Sub status	Error type	Contents	Handling
06	01, 25	Significant problem	Program error (there is possibility of program malfunction or RAM breakage)	Update of Network Program, or replacement of printer main PCB

SPX

Status code	Sub status	Error type	Contents	Handling
07	01, 28	Significant problem	Program error (there is possibility of program malfunction or RAM breakage)	Update of Network Program, or replacement of printer main PCB

NCP

Status code	Sub status	Error type	Contents	Handling
08	01, 28	Significant problem	Program error (there is possibility of program malfunction or RAM breakage)	Update of Network Program, or replacement of printer main PCB

Socket

Status code	Sub status	Error type	Contents	Handling
059	24	Insignificant problem	Program error	Update of Network Program

Telnet server

Status code	Sub status	Error type	Contents	Handling
10	06, -32	Significant problem	Program error (there is possibility of program malfunction or RAM breakage)	Update of Network Program, or replacement of printer main PCB

Web server

Status code	Sub status	Error type	Contents	Handling
11	13, -1C	Significant problem	Program error (there is possibility of program malfunction or RAM breakage)	Update of Network Program, or replacement of printer main PCB

Utility

Status code	Sub status	Error type	Contents	Handling
12	11, 21, 22, 99, 9A, 9B, 9C	Significant problem	Program error (there is possibility of program malfunction or RAM breakage)	Update of Network Program, or replacement of printer main PCB

FTP

Status code	Sub status	Error type	Contents	Handling
13	01, -0E	Significant problem	Program error (there is possibility of program malfunction or RAM breakage)	Update of Network Program, or replacement of printer main PCB

lpr

Status code	Sub status	Error type	Contents	Handling
14	01, -08	Significant problem	Program error (there is possibility of program malfunction or RAM breakage)	Update of Network Program, or replacement of printer main PCB

R-Printer

Status code	Sub status	Error type	Contents	Handling
15	13	Insignificant problem	Program error	Update of Network Program

Q-Server

Status code	Sub status	Error type	Contents	Handling
16	13	Insignificant problem	Program error	Update of Network Program

MIB access function

Status code	Sub status	Error type	Contents	Handling
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17	01, 02, 03, 11, 12, 13, 14, 20, 21, 22, 23, 24	Significant problem	Program error (there is possibility of program malfunction or RAM breakage)	Update of Network Program, or replacement of printer main PCB
----	---	------------------------	---	---

JCM & Common driver				
Status code	Sub status	Error type	Contents	Handling
18	01, -2A	Significant problem	Program error (there is possibility of program malfunction or RAM breakage)	Update of Network Program, or replacement of printer main PCB

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