

OKIDATA®

OKIPAGE 16n Service Manual

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1. CONFIGURATION

1.1 System Configuration

OKIPAGE16n / OKIPAGE16n/PS consists of control and engine blocks as the standard configuration (See Figure 1-1.)

In addition, the following options are also available.

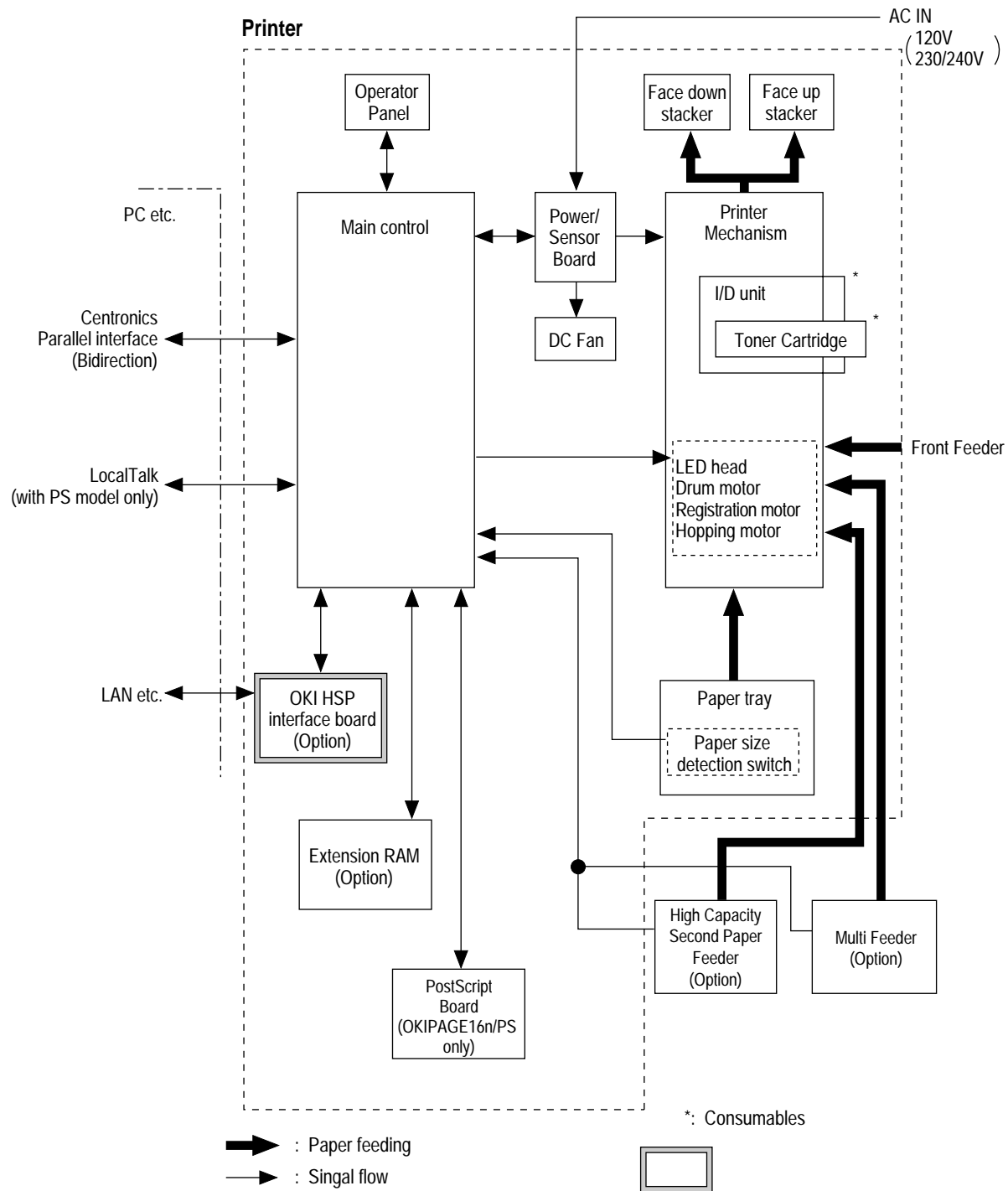


Figure 1-1

1.2 Printer Configuration

The printer unit consists of the following hardware components:

- Electrophotographic processor
- Paper feeder
- Controller
- Operator panel
- Power Supply board

Figure 1-2 shows the printer unit configuration.

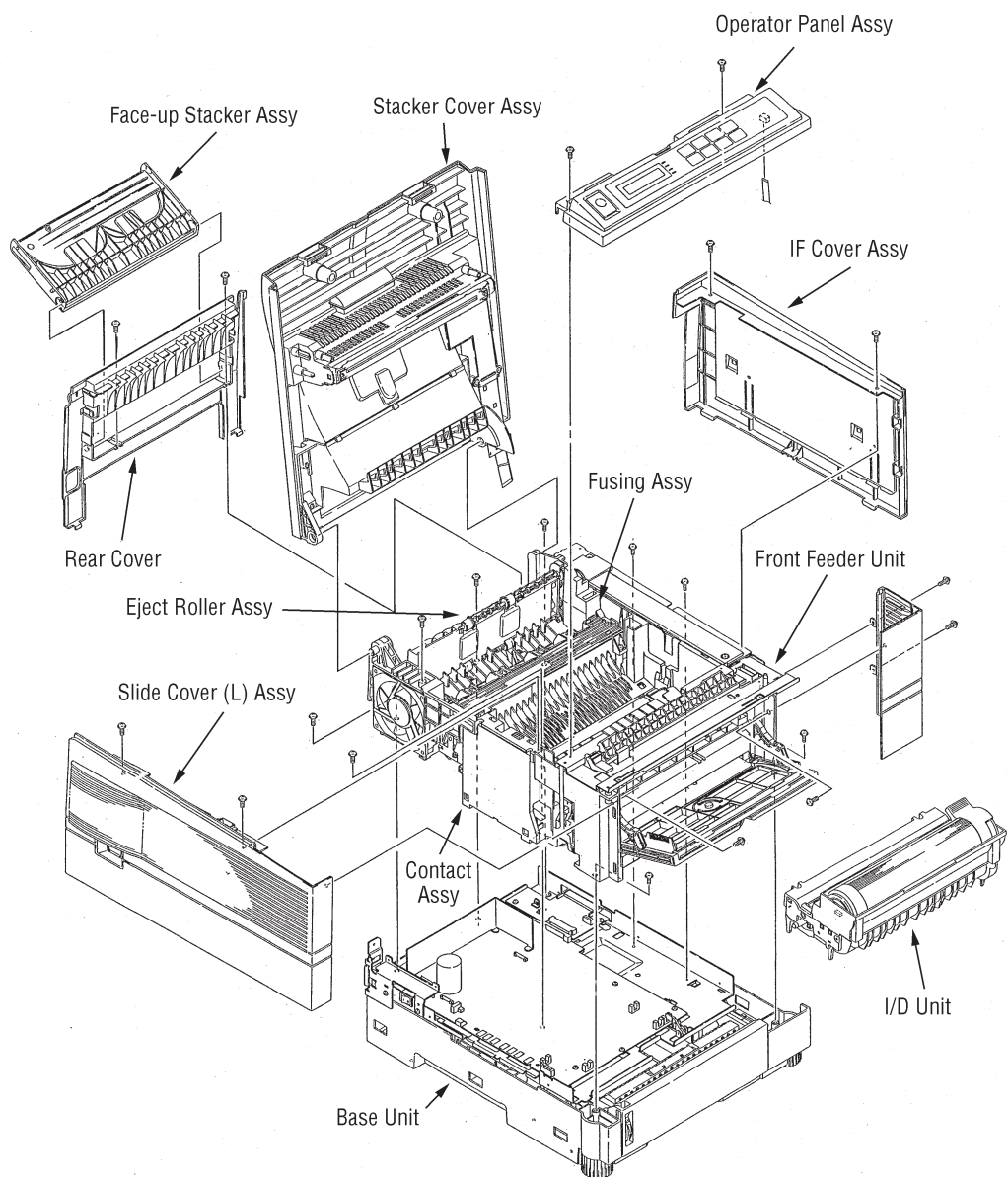
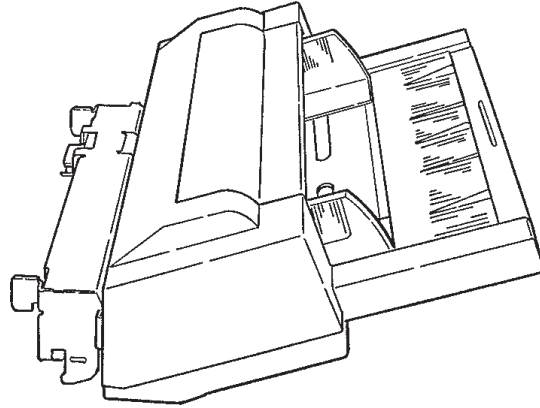


Figure 1-2

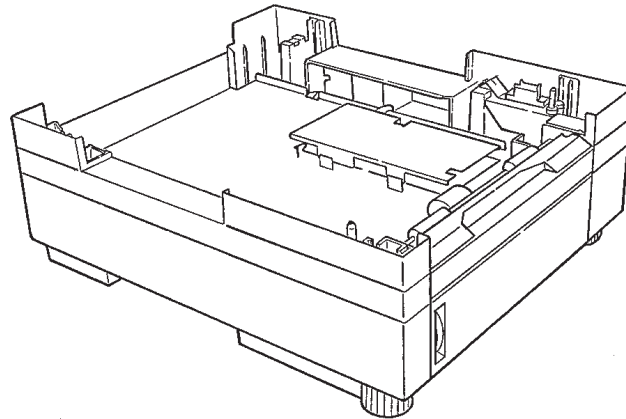
1.3 Optional Configuration

The options below are available for use with OKIPAGE16n / OKIPAGE16n/PS. They are sold separately from the printer unit.

(1) Multi-Purpose Feeder

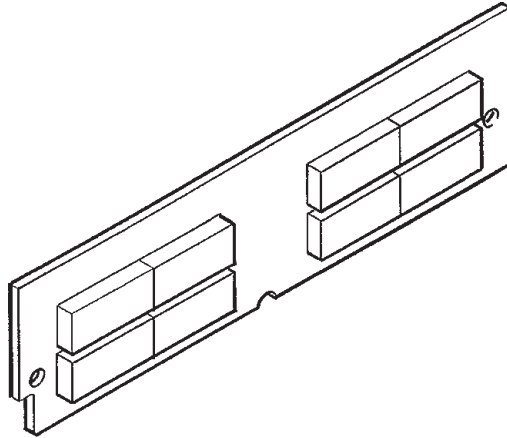


(2) High Capacity Second Paper Feeder

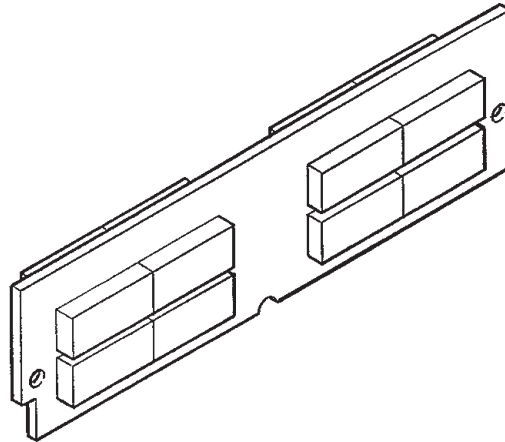


(3) RAM module (72 pin SIMM, 1 MB/2 MB/4 MB/8 MB/16 MB/32 MB)

- 16 MB RAM module



- 8 MB RAM module



1.4 Specification

(1) Type	Desk top
(2) External dimensions (excludes protruding Portion)	Height 10.6" (270 mm) Width 14.4" (366 mm) Depth 16.9" (430 mm)
(3) Weight	15.2 kg (33.5 lbs)
(4) Development method Exposure method	Dry electrophotography LED stationary head
(5) Paper used	<Type> <ul style="list-style-type: none">• Standard paper<ul style="list-style-type: none">– Xerox 4200 (20 lbs)• Application paper (manual face-up feed)<ul style="list-style-type: none">– Label– Envelope– OHP paper (Transparency) <Size> <ul style="list-style-type: none">• Standard sizes<ul style="list-style-type: none">– Letter– Legal– Executive– Envelope– A4– A5– B5– A6• Applicable sizes<ul style="list-style-type: none">– Width: 3.4" to 8.5" (86 to 216 mm)– Length: 5.5" to 14" (140 to 355.6 mm) <Thickness> <ul style="list-style-type: none">– Automatic feed: 16 to 28 lbs (60 to 105 g/m²)– Manual feed: Label, OHP paper (transparency) Envelope
(6) Printing speed	First print: 10 sec. Continuous print: 16 sheets/min. Warm-up time: 90 sec. [at room temperature 77°F (25°C) and rated voltage (120 VAC)]
(7) Paper feed method	Automatic feed or manual feed
(8) Paper delivery method	Face down/face up
(9) Resolution	600 x 600 dots/inch
(10) Power input	120 VAC + 5.5%, -15% 230/240 VAC + 10%, -14%

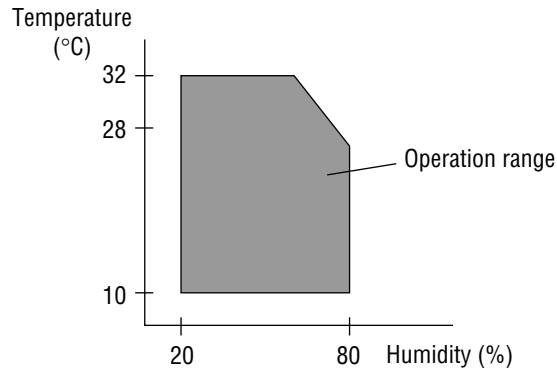
(11) Power consumption Peak: Approx. 600W
 Typical Operation: Approx. 220W
 Idle: Approx. 100W
 Power save mode: Approx. 20W

(12) Temperature and humidity

	In operation	Power off mode	During Storage	Unit
Temperature	50 - 90 (10 - 32)	32 - 110 (0 - 43)	14 - 110 (-10 - 43)	°F (°C)
Humidity	20 - 80	10 - 90	10 - 90	%RH
Maximum wet bulb temperature	77 (25)	80.4 (26.8)	_____	°F (°C)
Minimum difference of wet and dry bulb temperatures	35.6 (2)	35.6 (2)	_____	°F (°C)

Notes:

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



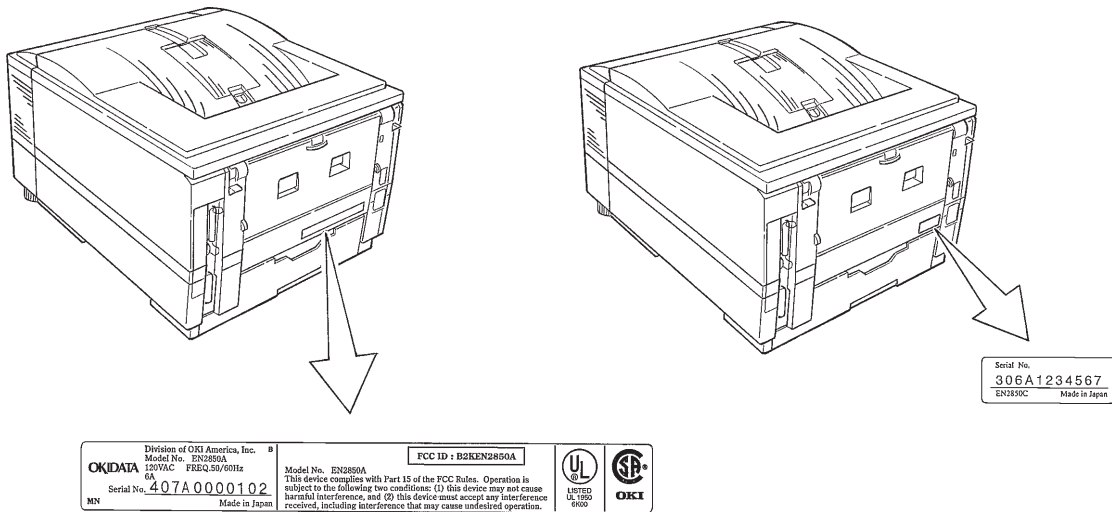
(13) Noise During operation: 50 dB (A) or less
 At standby: 45 dB (A) or less
 Power save mode: 43 dB (A) or less

(14) Consumables Toner cartridge kit 5,000 (5% duty)
 Image drum cartridge 30,000 (at continuous printing)
 18,000 (3 page/job)
 11,000 (1 page/job)

1.5 Safety Standards

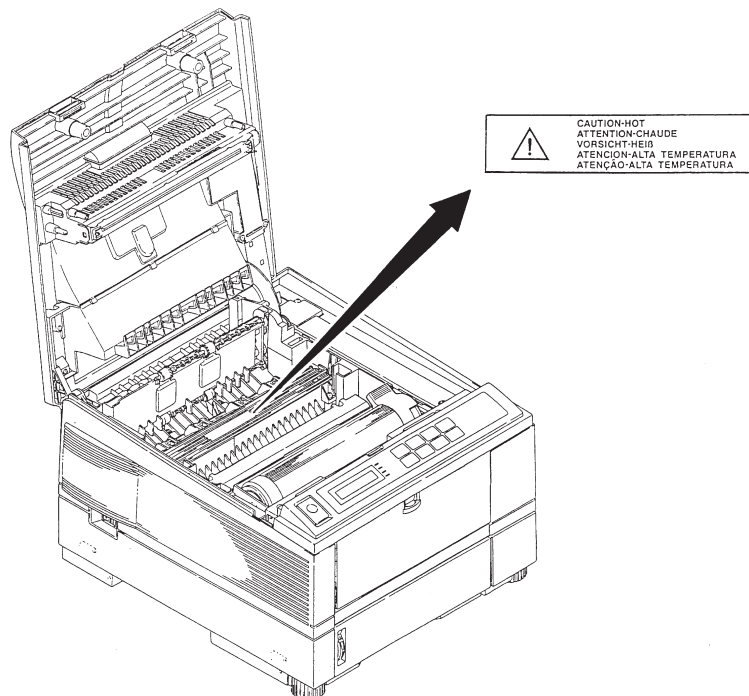
1.5.1 Certification Label

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



1.5.2 Warning Label

The warning label is affixed to the portion which may cause bodily injury.
Follow the instructions on warning labels during maintenance.



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2. OPERATION DESCRIPTION

OKIPAGE16n / OKIPAGE16n/PS consists of a main control board, a power supply board, a driver board, an operator panel and an electrophotographic process mechanism.

The control board receives data through a host I/F, decodes and edits the data, and stores the edited data in memory. After completing edition of one page of data, it references the font memory and generates bit data on the same memory. At the same time, it transfers the bit image data to the LED head in units of one dot line.

The electrophotographic process mechanism prints data on paper.

The operator panel is used for operations and status display.

Fig. 2-1 shows an OKIPAGE16n / OKIPAGE16n/PS block diagram.

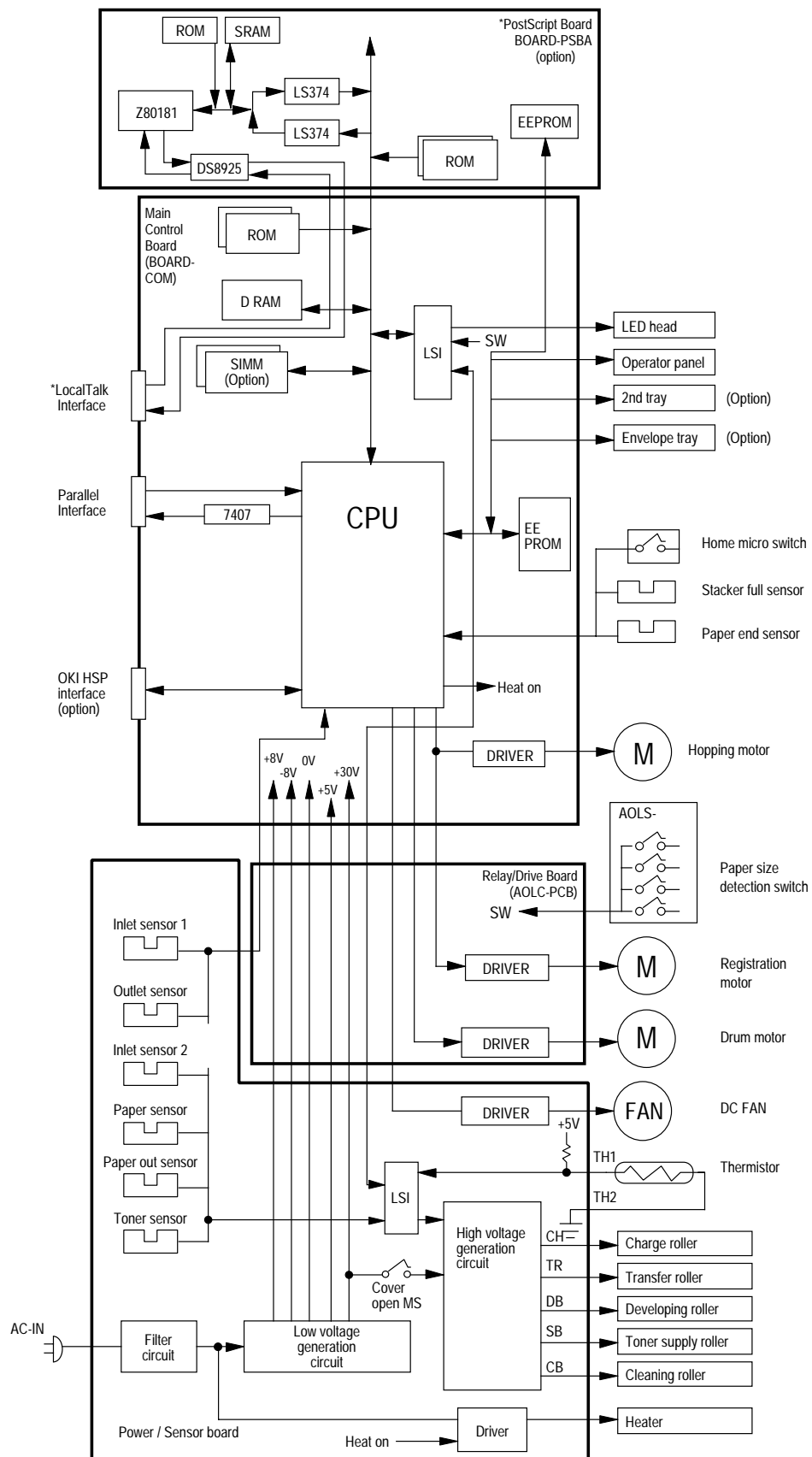


Figure 2-1 OKIPAGE16n / OKIPAGE16n/PS block diagram

2.1 Main Control Board (BOARD-COM)

The control board consists of an one chip CPU, LSIs, program/font ROM's, DRAM's, an EEPROM, a host interface circuit, and a mechanism driving circuit.

(1) One-chip CPU

The one-chip CPU is a custom CPU (32-bit internal bus, 32-bit external bus, 32-MHz clock) that incorporates an RISC CPU and its peripheral devices, and has the following functions.

Built-in device	Function
Chip select controller Bus controller DRAM controller	Control of ROM, DRAM and I/O device
DMA controller	Transfer of image data from DRAM to OST LSI
Parallel interface controller	Control of Centronics parallel interface
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	Inputting/outputting of sensor, signal and motor signal
Option I/O interface	Control of OKI HSP interface

(2) Program/font ROM's

The program/font ROM's store the HP IV emulation program and various types of font. MASK ROM is used as the program/font ROM's.

(3) DRAM's

2-Megabyte DRAM (4 Mbit DRAM x 4) is mounted as resident memory to be used for storing the program and providing various buffers. This DRAM is expandable up to 66 Mbytes by adding expansion memory (SIMMs). This DRAM provides the areas shown in the following table.

Memory area	Use	Memory capacity setting	
		MENU	Expansion RAM
System area	Working area used for the program	Fixed	Fixed
Raster buffer	Stores converted bit image data	Enable	Expandable
Receive buffer	Stores temporarily the data received from the host interface	Enable	Expandable
Page buffer	Adds print information to the analyzed receive data and stores the resulted data.	–	Expandable
DLL/macro buffer	Stores soft fonts and macro data.	–	Expandable
Font cache buffer	Stores bit map fonts generated by the font rasterizer based on scalable font information	Enable	Expandable

(4) EEPROM

The EEPROM has a 1-kbit capacity and stores the following data.

- Menu data
- Various counter data (page counter, drum counter, fuser counter, etc.)
- Adjustment parameters (LED head drive time, print start position, etc.)

(5) LSI (MBCE31701-040FP-BND)

This LSI is used as a peripheral device of the CPU and performs smoothing compensation (OST) of print image data. In addition, it transfers serially bit image data for each dot line to the LED head.

(6) Host interface

This printer has the following interfaces to the host.

- Centronics bidirectional parallel interface
- OKI HSP interface (Option)
- LocalTalk interface (Option - PostScript Version)

The single effective interface or the automatic interface select mode can be selected using the menu. If the busy state of the printer continues for a long time period, the buffer near-full control releases the busy status at constant intervals even if the host side is busy so not to cause the interface time-out at the host side.

(a) Centronics bidirectional parallel interface

This is an interface conforming to IEEE-1284 and provides either of unidirectional and bidirectional communications according to each of the following communication modes.

- Compatibility mode
Unidirectional communications from the host to the printer.
- Nibble mode
This mode transmits 4-bit wide data from the printer to the host. In this mode, each 1-byte data is transferred in the form of two nibbles using ERROR, BUSY, FAULT, and SELECT signal leads. This mode can provide the bidirectional operation in combination with the compatibility mode.
- ECP mode
This mode provides the asynchronous bidirectional interface and transmits and receives 1-byte data using eight data signal leads under the semi-duplex control by the host.

When the power is turned on, the compatibility mode is automatically selected. The change to another mode from the compatibility mode is made through negotiation. (When the BI DIRECTION is set to ENABLE in the menu, this change can be performed.) (For the electrical/physical characteristics of this interface, see APPENDIX A)

(b) OKI HSP interface (Option)

This interface (slot) is an OKI unique universal interface that provides the platform to connect various boards (such as the LAN connection expansion board and SCSI expansion board).

Any expansion boards compatible with this interface can be mounted on the Control board in the piggyback board without modifying the program at the printer side. The conceptual diagram of the OKI HSP interface is shown in Fig. 2-2.

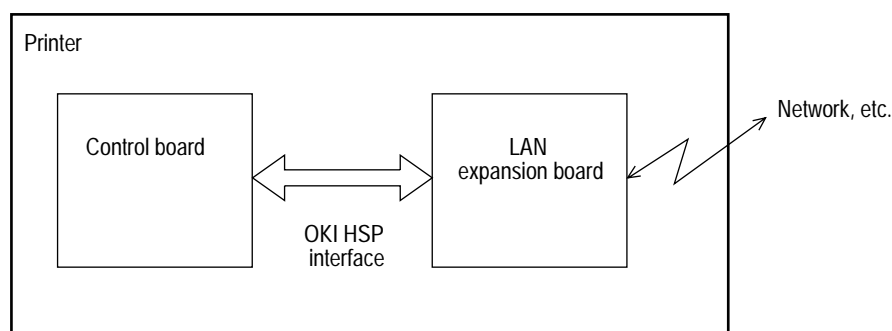
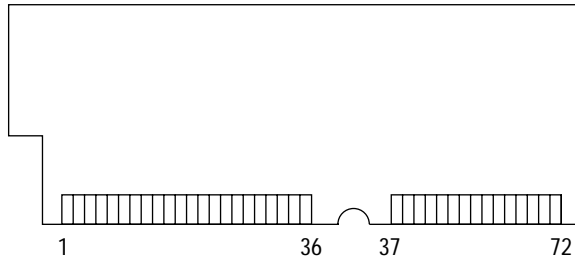


Fig. 2-2

(7) RAM module



- Pin layout
- Basic specification
 - Type: 72 pins SIMM (32 bits buss width)
 - Access time: 60ns, 70ns, 80ns, 100ns
 - Capacity: 1, 2, 4, 8, 16 or 32MB
 - Parity: None

2.2 Power Supply Board

The power supply 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	Reset circuit
-8 V	Local Talk Line voltage

(2) High voltage power supply circuit

This circuit generates the following voltages necessary for electrophotographic processing from +30 V according to the control sequence from the control board. When cover open state is detected, +30 V supply is automatically interrupted to stop the supply of all the high-voltage outputs.

Output	Voltage	Use	Remarks
CH	-1.30 KV	Voltage applied to charging roller	
DB	-240 V/+300 V	Voltage applied to developing roller	
SB	-360 V/450 V	Voltage applied to toner supply roller	
TR	+4 KV/-1.3 kV	Voltage applied to transfer roller	Variable
CB	+400 V	Voltage applied to cleaning roller	

(3) Photosensor

The photosensor mounted on this power supply board supervises the paper running state during printing.

Figure 2-3 shows the sensor layout diagram.

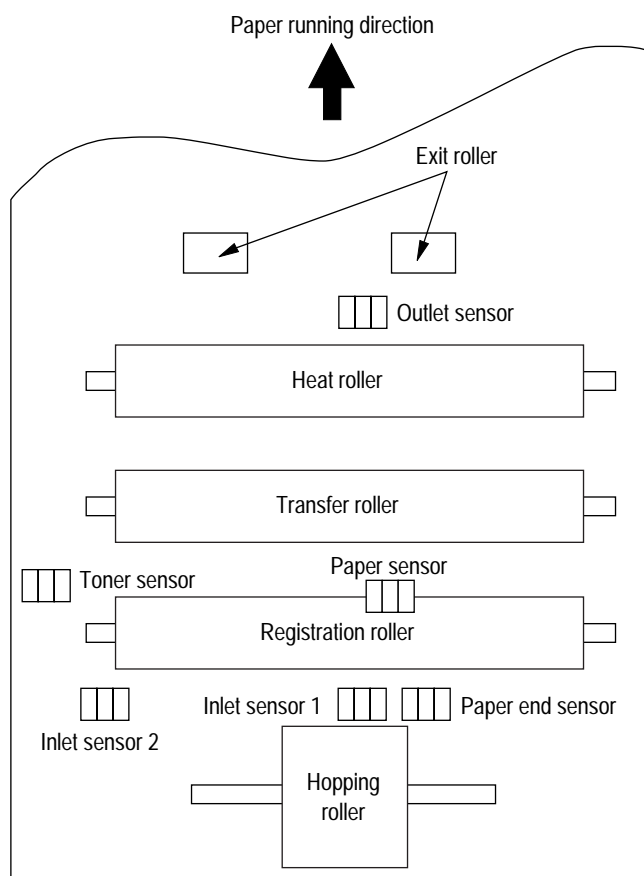
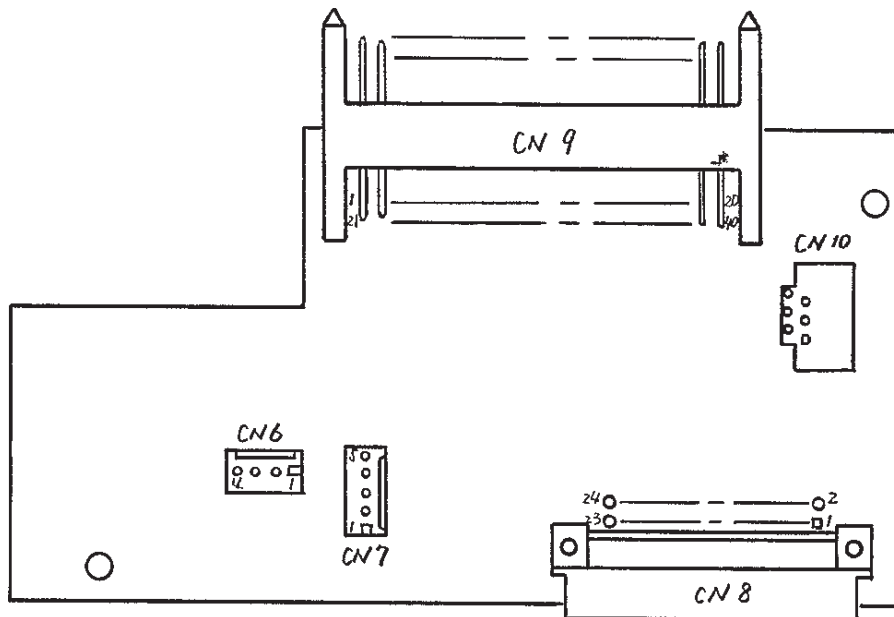


Figure 2-3

Sensor	Function	Sensing state
Inlet sensor 1	Detects the leading part of the paper and gives the supervision timing for switching from hopping operation to feeding operation. Supervises the paper running state and the paper size according to the paper reach time and running time.	ON: Paper exists. OFF: No paper exists.
Inlet sensor 2	Detects the form width.	ON: A4 or larger OFF: Smaller than A4
Paper sensor	Detects the leading part of the paper. Supervises the paper running state.	ON: Paper exists. OFF: No paper exists.
Outlet sensor	Supervises the paper feed and size according to the time of arrival to the sensor and the time of passage of paper.	ON: Paper exists. OFF: No paper exists.
Paper end sensor	Detect the end of the paper.	ON: Paper exists. OFF: No paper exists.
Toner low sensor	Detects the lack of toner.	ON long: Toner low exists OFF short: No Toner low exists

2.3 Relay/Driver Board (AOLC board)

This board relays signals between the Control board and the Power supply board and includes the registration motor and drum motor driver IC.



2.4 Electrophotographic Process

2.4.1 Electrophotographic process mechanism

This mechanism prints image data from the control board on the paper by electrophotographic process.

The Figure 2-4 shows the layout of the electrophotographic process mechanism.

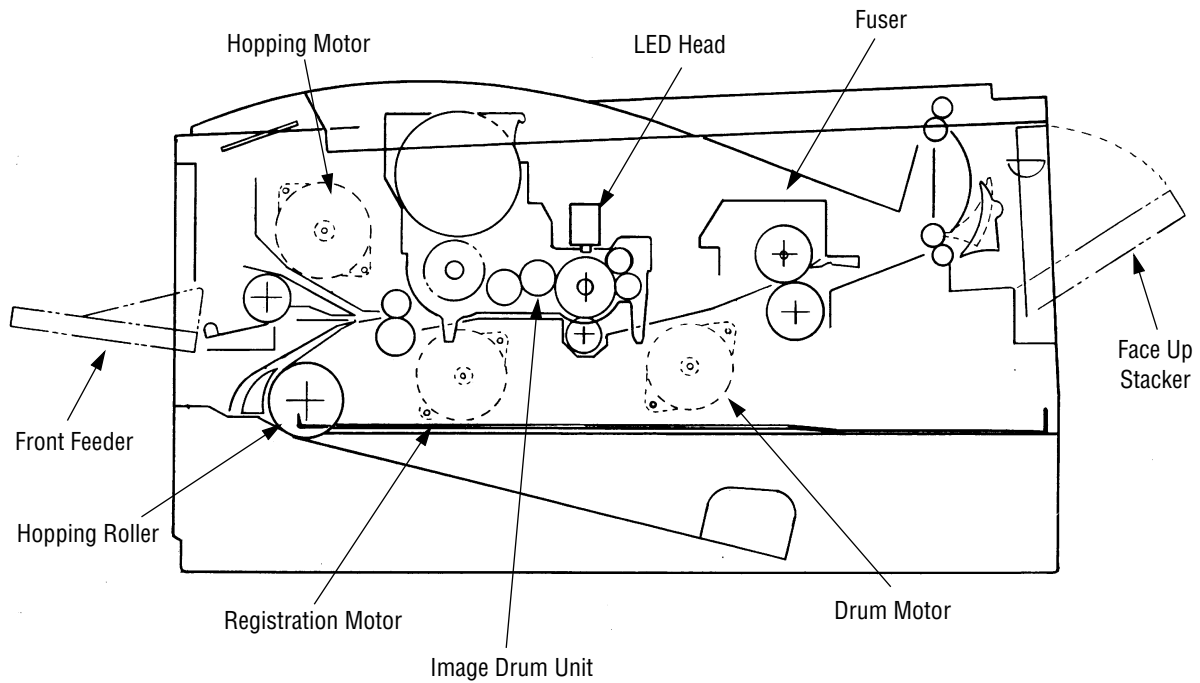


Figure 2-4

(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) Hopping motor

This motor is a pulse motor of 48 steps/rotation that is two-phase excited by the signal from the control board. It drives the hopping roller of the first tray and the front feed roller via two one-way clutches according to the direction of rotation.

(3) Registration motor

This motor is a pulse motor of 48 steps/rotation that is two-phase excited by the signal from the control board. It drives the registration roller.

(4) Drum motor

This drum motor is a pulse motor of 48 steps/rotation that is two-phase excited by the signal from the control board and is the main motor of this mechanism.

(5) LED head

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

(6) Fuser

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

An AC voltage from the power supply board is applied to the heater under the control of the HEATON signal from the control board. This AC voltage heats the heater. The control board supervises the heat roller temperature via the thermistor, and regulates the heater roller at a predetermined temperature (185 ~ 188°C) by connecting or disconnecting the AC voltage supply to the heater.

If the heater roller temperature rises abnormally, the thermostat of the heater voltage supply circuit is activated to cut the AC voltage supply immediately.

2.4.2 Electrophotographic process

The electrophotographic processing is outlined below. Figure 2-5 shows the electrophotographic printing process.

1 Charging

The surface of the image drum is uniformly charged with negative charges by applying a 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 part of the image drum surface is lowered, so that an electrostatic latent image associated with the print image is formed.

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 and a positive charge, opposite in polarity to the toner, is applied to the reverse side of the paper from the transfer roller, the toner is attracted by the positive charge and is transferred to the paper. As a result, the toner image formed on the image drum is transferred to the paper.

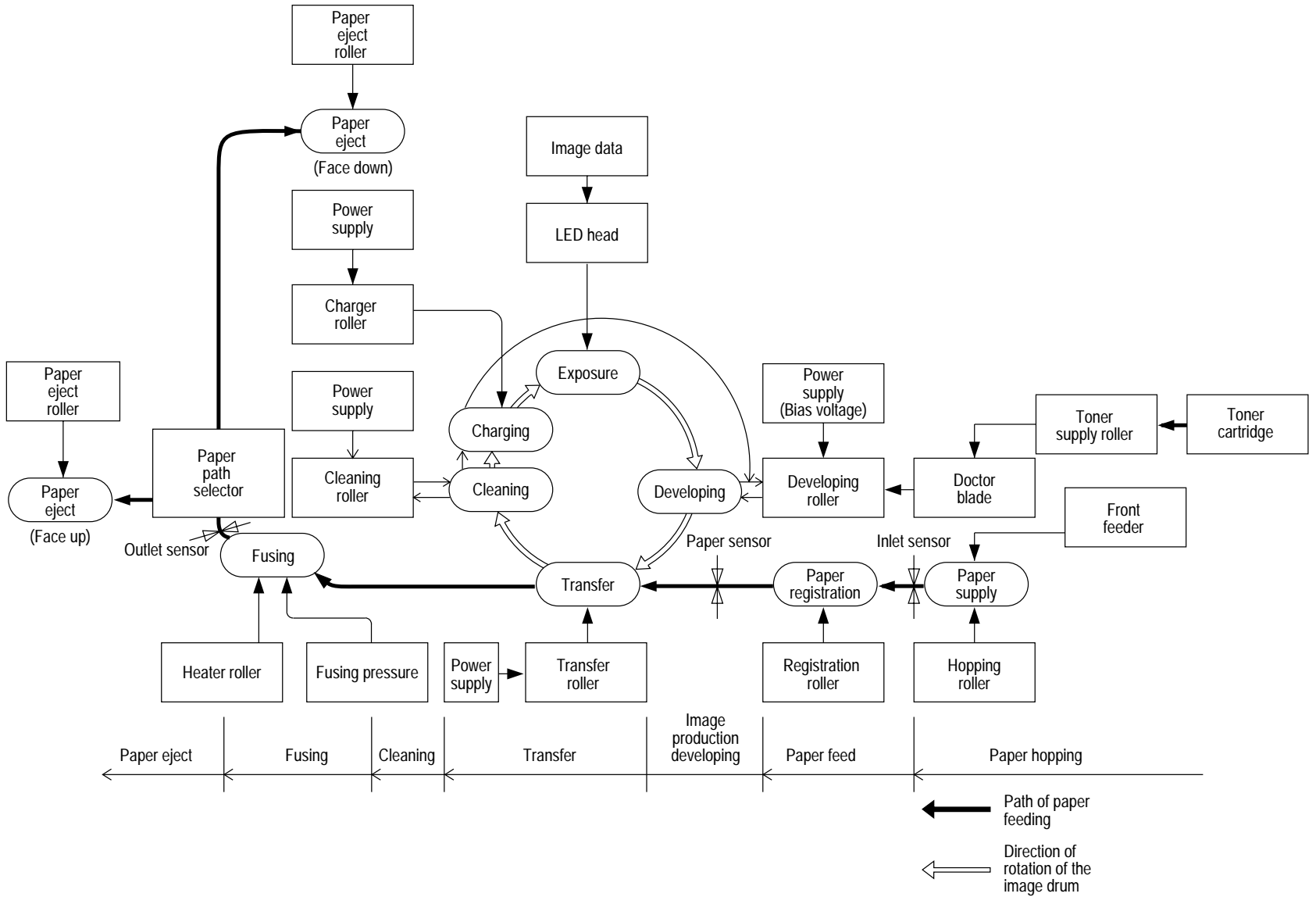
5 Temporary cleaning

Residual toner that remains on the image drum without being transferred is made uniform by the cleaning roller and is temporarily attracted to the cleaning roller by static electricity.

6 Fusing

The toner image transferred to the paper is fused under heat and pressure. Figure 2-6 shows an electrophotographic process timing chart.

Figure 2-5



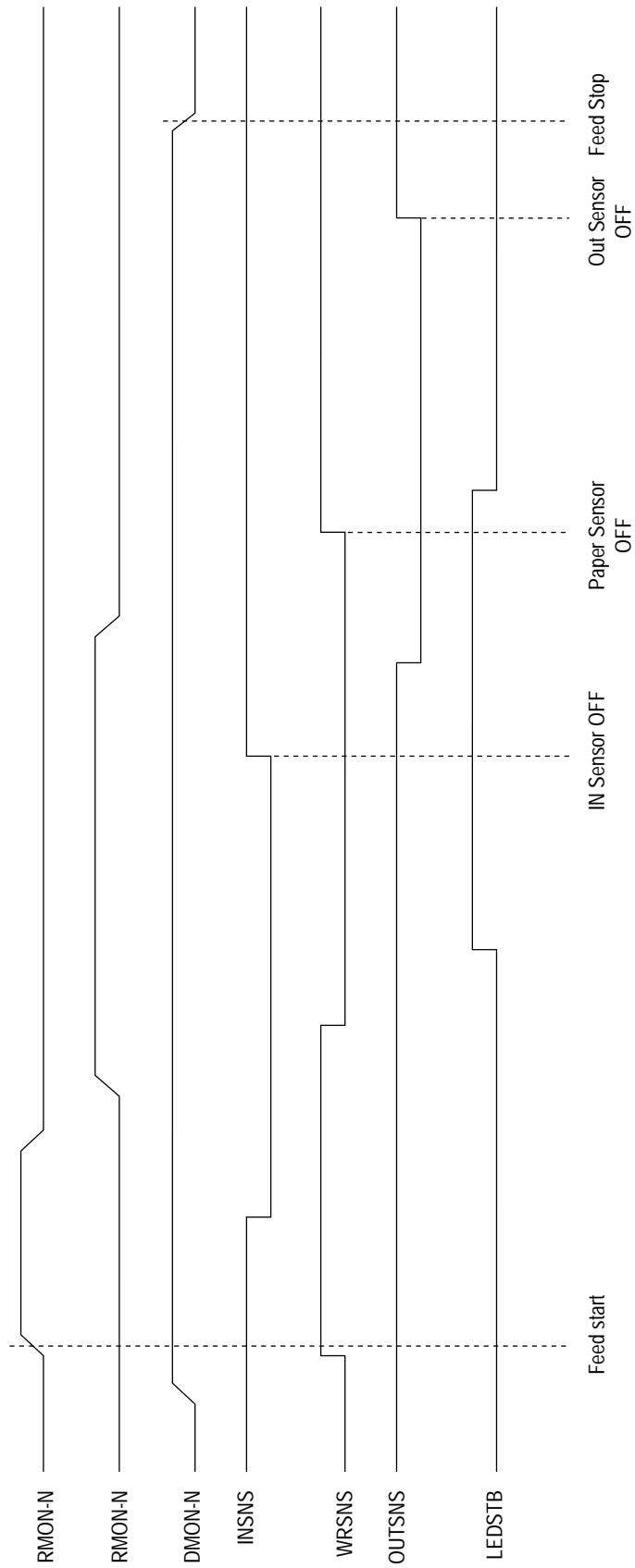
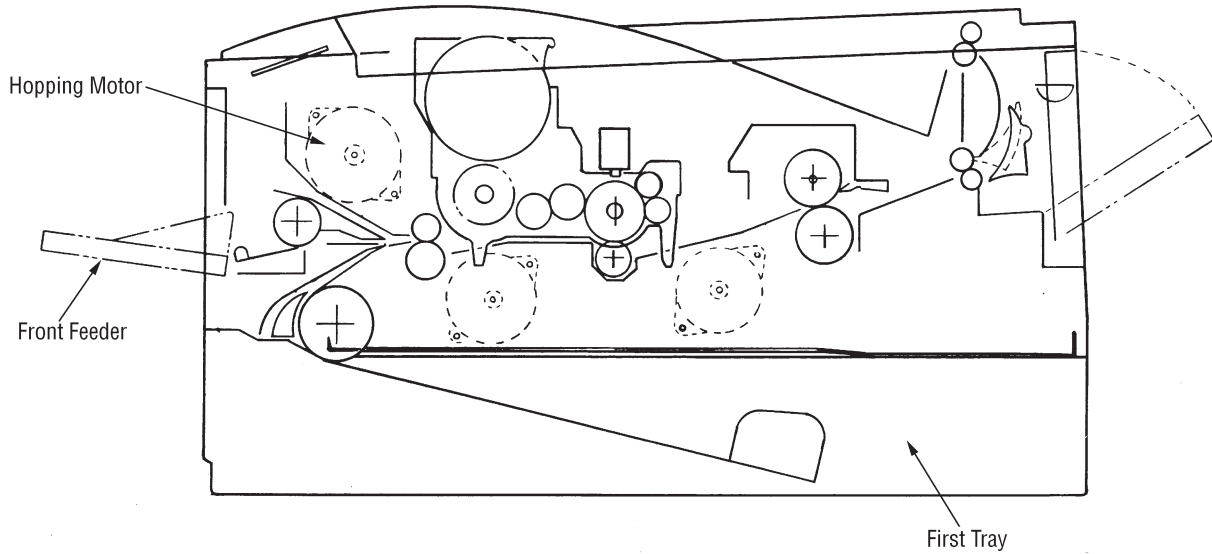


Figure 2-6

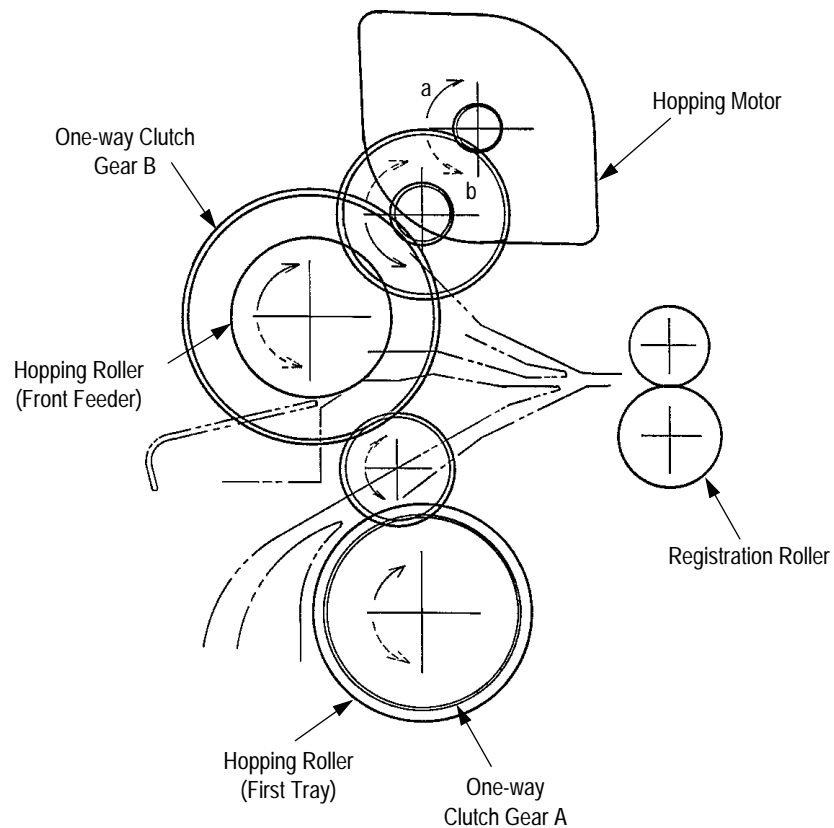
2.4.3 Process operation descriptions

(1) Hopping

Feeding from the first tray and the front feeder are effected by a single hopping motor in the mechanism shown below.

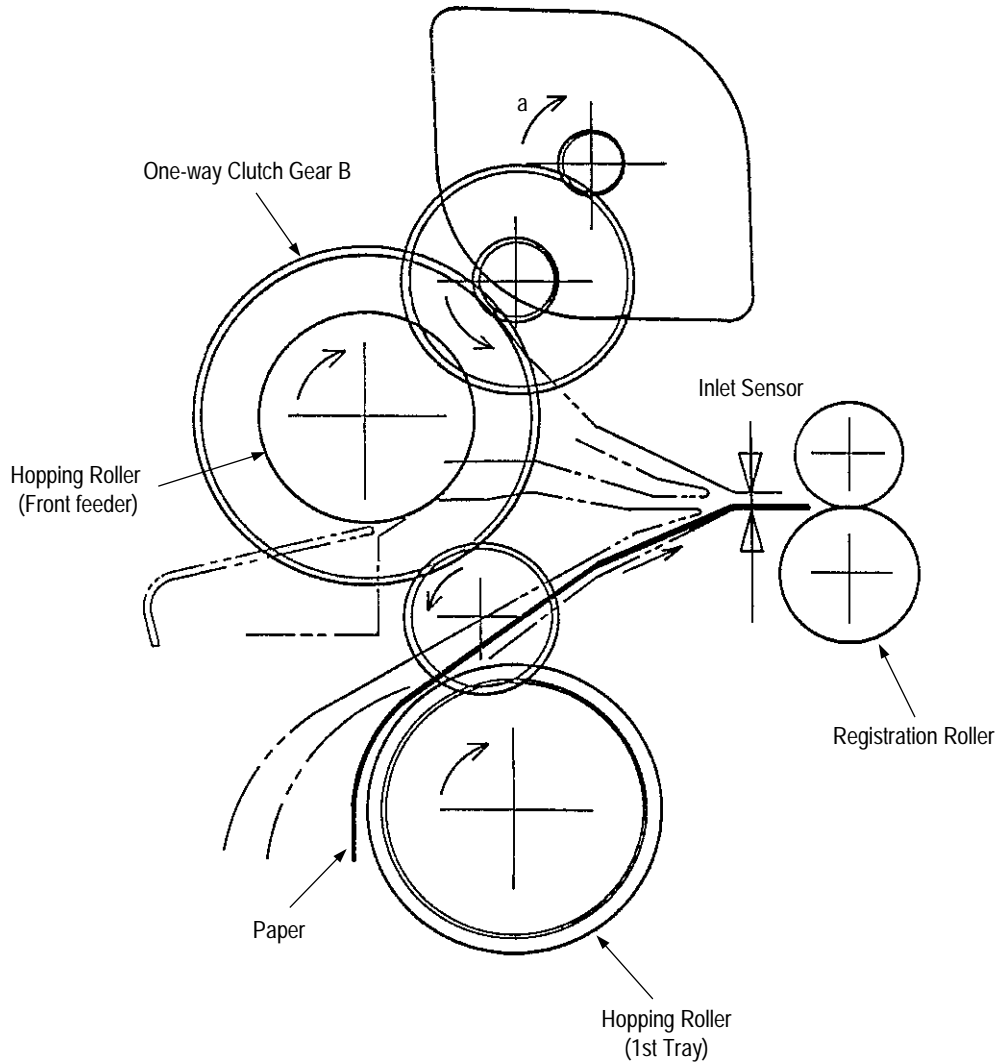


Turning the Hopping motor in the "a" direction drives the hopping roller of the first tray. Turning the Hopping motor in the "b" direction drives the Hopping roller of the front feeder. Both hopping gears contain one-way bearings, so that turning each of these gears in reverse direction will not be transmitted to the corresponding roller.



(a) Hopping (1st tray)

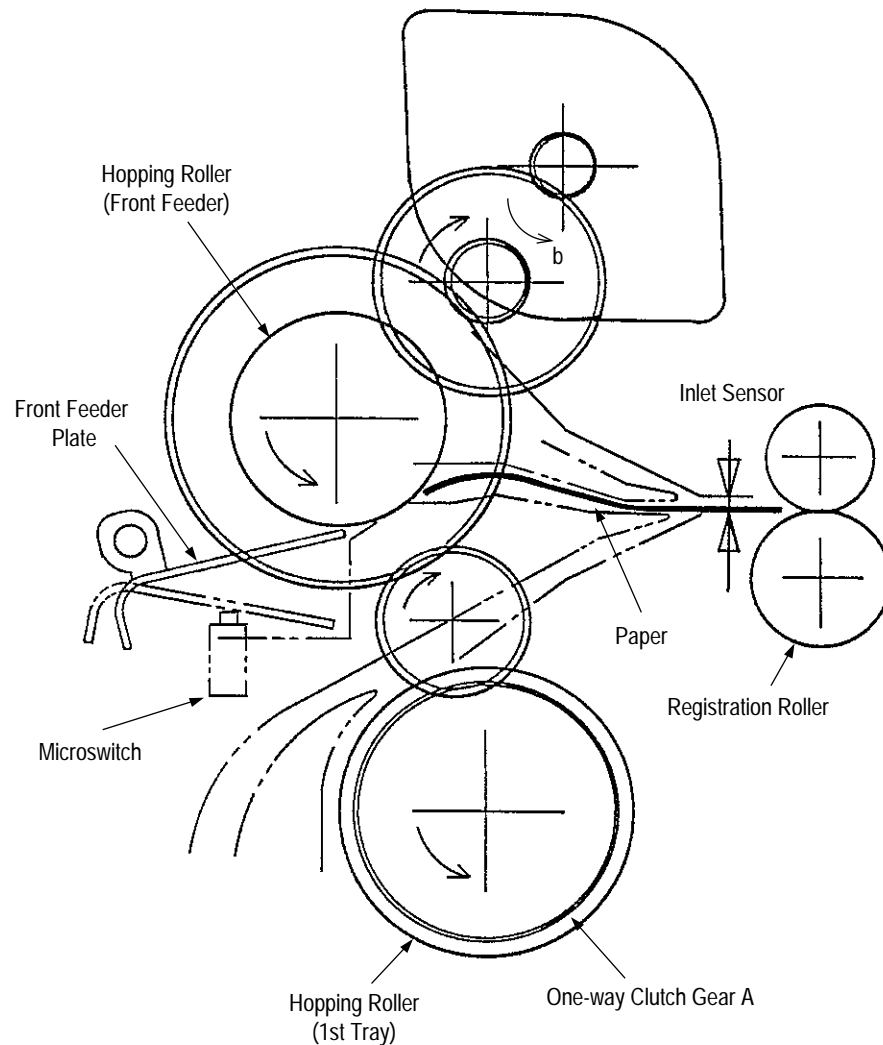
- 1 Rotating the pulse motor in the direction a (clockwise [CW] direction) drives the hopping roller of the first tray to advance the paper until the inlet sensor turns on. At the same time, the one-way clutch gear B also rotates. However, the hopping roller of the front feeder will not rotate due to the one-way bearing.
- 2 After turning on the inlet sensor, the paper advances further by a predetermined length until it hits the registration roller. (The skew of the paper can thus be corrected.)



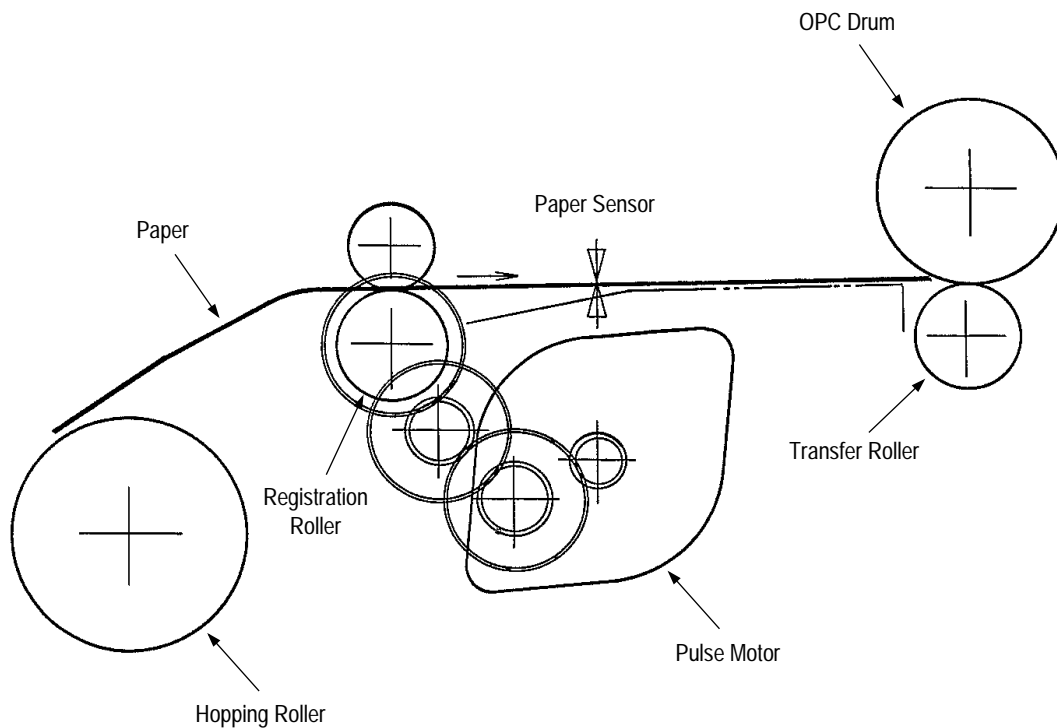
(b) Hopping (front feeder)

- 1 Rotating the pulse motor in the direction b (counterclockwise [CCW] direction) drives the hopping roller of the front feeder to advance the paper until the inlet sensor turns on. At the same time, the one-way clutch gear A also rotates. However, the hopping roller of the 1st tray will not rotate due to the one-way bearing.

A cam to push down the front feeder plate is attached on each of the ends of the hopping roller shaft. These cams push down the front feeder plate when the hopping operation is not performed so as to facilitate the setting of paper into the tray. A microswitch is provided under the front feeder plate to detect that the front feeder plate is at the lower position. When the front feeder plate is at the lower position, this microswitch causes the motor to stop.



- 2 After turning on the inlet sensor, the paper advances further by a predetermined length until it hits the registration roller. (The skew of the paper can thus be corrected.)



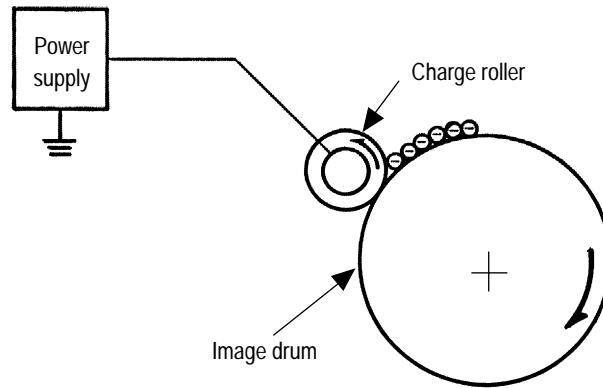
(2) Feeding

After the end of hopping, the pulse motor dedicated for driving the registration roller rotates to drive the registration roller. The driven registration roller advances the paper until it comes out of the registration roller.

When the leading edge of the paper causes the paper sensor to turn on, the printing is started synchronously.

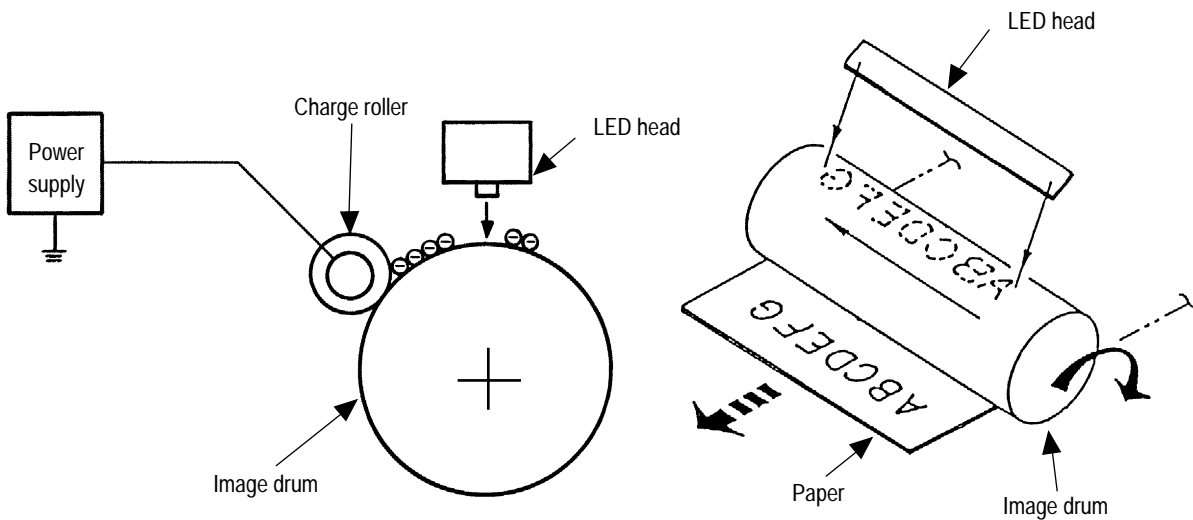
(3) Charging

Charging is effected by applying a DC minus voltage to the charge roller that is in contact with the image drum surface.



(4) Exposure

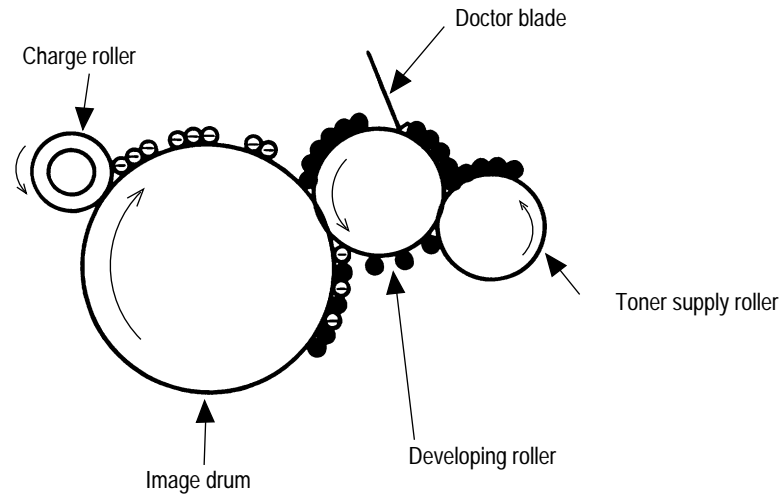
Light emitted from the LED head irradiates the image drum surface with negative charges. The surface potential of the irradiated part of the image drum drops, thereby forming an electrostatic latent image associated with the image signal.



(5) Developing

Toner is attracted to the electrostatic latent image on the image drum surface to convert it into a visible toner image. Developing takes place at 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.)



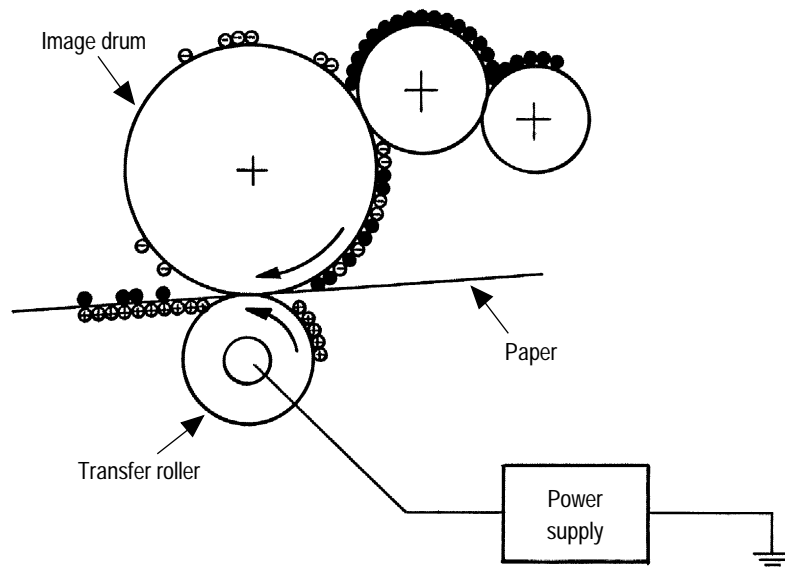
- 2 The toner attracted to the developing roller is scraped off by the doctor blade, forming a thin coat of toner on the developing roller surface.
- 3 Toner is attracted to the exposed part (low-potential part) of the image drum at the contact between the image drum and the developing roller, making the electrostatic latent image visible.

(6) Transfer

The transfer roller is composed of conductive sponge material and is designed to make the image drum surface and the paper closely into contact.

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

The application of a high positive voltage from the power supply to the transfer roller causes the positive charge induced to the transfer roller surface to be transferred to the paper at the contact between the transfer roller and the paper. As a result, toner charged negative that is attracted to the image drum surface is transferred to the upper side of the paper by the positive charge on the lower side of the paper.

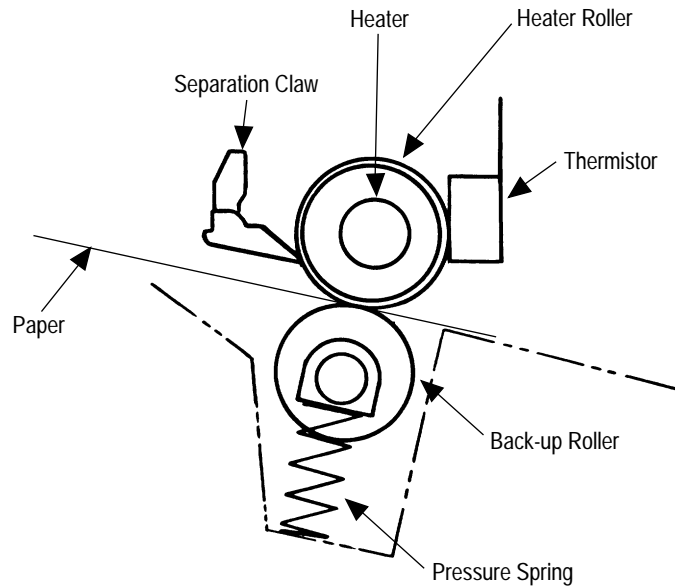


(7) Fusing

After the end of the transfer, the unfused toner image is fused on the paper under heat and pressure as it passes between the heater roller and the backup roller. The heater roller with a Teflon coating incorporates a 400W heater (Halogen lamp), which heats the heat roller.

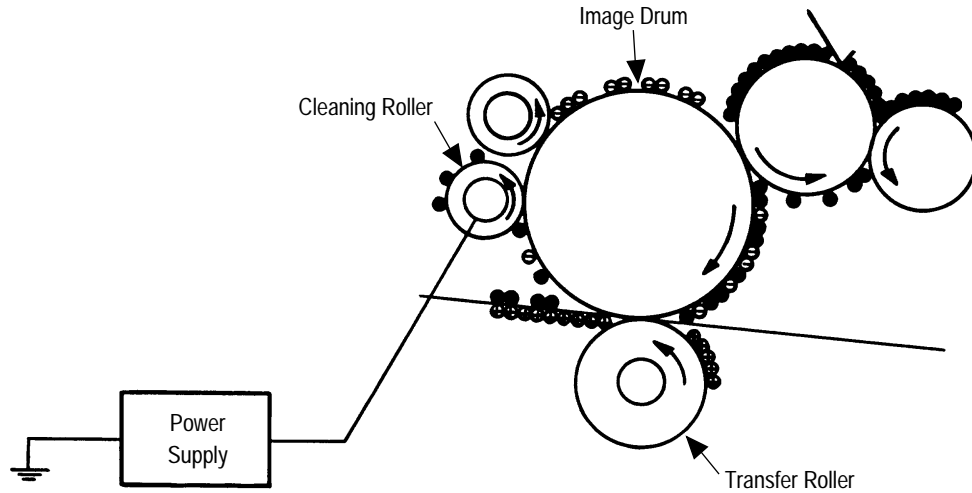
A thermistor which is in contact with the heater roller regulates the heater roller at a predetermined temperature (about 185 ~ 188°C). A safety thermostat cuts off voltage supply to the heater by opening the thermostat in the event of abnormal temperature rises.

The backup roller is held under a pressure of 2.5 kg from the pressure spring at each side.



(8) Cleaning

After the end of the transfer, residual toner on the image drum is attracted to the cleaning roller temporarily by static electricity to clean the image drum surface.



(9) Cleaning of rollers

The charge roller, transfer roller and cleaning roller are cleaned in the following cases:

- In warming up at power-on time
- In warming up after the cover is opened and closed
- When the number of accumulated sheets is 10 or more and the printout operation ends

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

2.5 Paper Jam Detection

The paper jam detection function supervises the paper state at power-on time and during printing. In the event that the following state occurs, this function interrupts the printing process. If any of the following errors is presented, recovery printing will be performed by removing the jammed paper (namely 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"> • At power-on time, the paper is placed at the inlet sensor. • After hopping operation is attempted three times, the leading part of the paper does not reach the inlet sensor.
Paper feed jam	<ul style="list-style-type: none"> • At power-on time, the paper is placed at the paper sensor. • The leading part of the paper does not reach the paper sensor within a predetermined distance after the paper has reached the inlet sensor. • The trailing part of the paper does not pass over the paper sensor within a predetermined distance after the leading edge of the paper has passed over the paper sensor. • The leading part of paper does not reach the outlet sensor within a predetermined distance after the paper has reached the paper sensor.
Paper exit jam	<ul style="list-style-type: none"> • At power-on time, the paper is placed on the outlet sensor. • The paper does not pass over the outlet sensor within a predetermined time after the leading part of the paper has reached the outlet sensor. • The paper size check with the manual feed specified considers the reference size as free size.
Paper size error	<ul style="list-style-type: none"> • The size of the paper is supervised by the inlet sensors 1. It is detected that the paper does not pass over the inlet sensor 1 within predetermined range of 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 with the manual feed specified considers the reference size as free size.

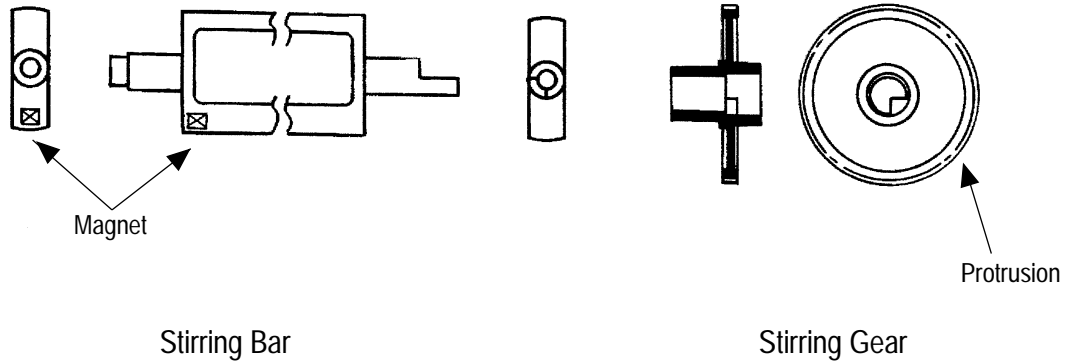
2.6 Cover Open

When the stacker cover is opened, the cover open microswitch on the power supply board is turned off to cut the supply of +30V to the high voltage power supply circuit. As a result, all high-voltage outputs are interrupted. At the same time, the CVOPN signal is sent to the control board to notify it of the off state of the microswitch, and the control board performs the cover open processing.

2.7 Toner Low Detection

- Composition

The device consists of the stirring gear which rotates at a constant rate, the stirring bar and the magnet on the stirring bar. The stirring bar rotates through the link on the protrusion in the stirring gear.

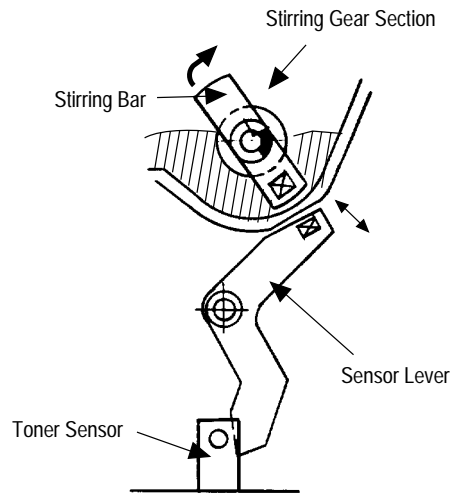


- Operation

Toner Low is detected by monitoring the time interval of the encounter of the magnet set on the sensor lever and the magnet on the stirring bar.

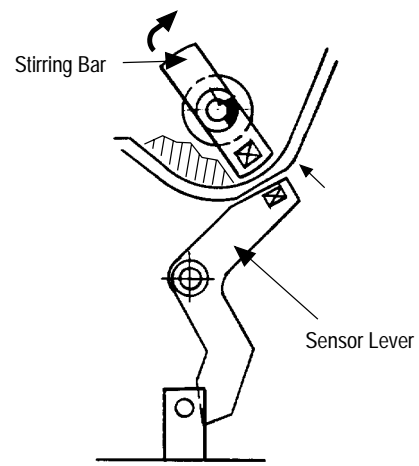
Operation during toner full state

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

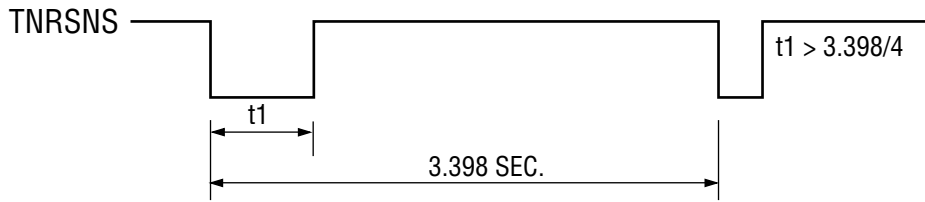


Operation during toner low state

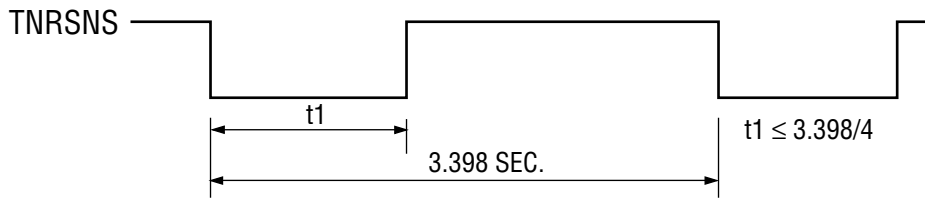
- When the stirring bar reaches the maximum height, since there is no resistance provided by the toner on the other side, it falls to the minimum height due to its own weight. Because of this, the time interval during which it encounters the magnet of the sensor lever becomes long. By monitoring this time interval, toner low 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 cancelled.
- When there is no change with the toner sensor for 2 cycles (3.398 sec. x 2) or more, then the Toner Sensor Alarm is activated.
- The toner sensor is not monitored while the drum motor is stopped.

2.8 Stacker-full Detection

The sensor (interlocked with the lever) at the paper outlet to the stacker detects a stacker-full state (about 250 sheets) and stops printing of the ensuing pages.

2.9 Page Size Detection

The four tab pieces are driven according to the setting position of the paper guide through the cam interlocked with the paper guide of the paper cassette.

When the paper cassette is inserted into the printer, the state of the tab pieces is detected by the microswitch to recognize the paper size.

State of Microswitches				Paper size
SW1	SW2	SW3	SW4	
0	1	1	1	Letter
0	1	0	1	Executive
0	0	1	1	A4
1	1	1	0	Legal 14
1	0	1	1	Legal 13
1	1	0	1	B5
1	1	0	0	A5
1	0	0	1	A6

2.10 PostScript Board (BOARD-PSBA) Optional

The PostScript board consists of program/font ROM's, an EEPROM, and a LocalTalk interface control circuit.

(1) Program/font ROM's

The program/font ROM's store the PostScript Level II program and its fonts. MASK ROM is used as the program/font ROM's.

(2) EEPROM

The EEPROM has a 4-kbit capacity and stores the PostScript's menu settings.

(3) LocalTalk interface control circuit

AppleTalk protocol data is received from the host system via LocalTalk interface. The LocalTalk interface control circuit consists of a CPU, a program ROM, a SRAM, and a driver/receiver IC.

3. PARTS REPLACEMENT

The section explains the procedures for replacement of parts, assemblies, and units in the field. Only the removal procedures are explained here. Reverse the procedure for the installation.

3.1 Precautions for Parts Replacement

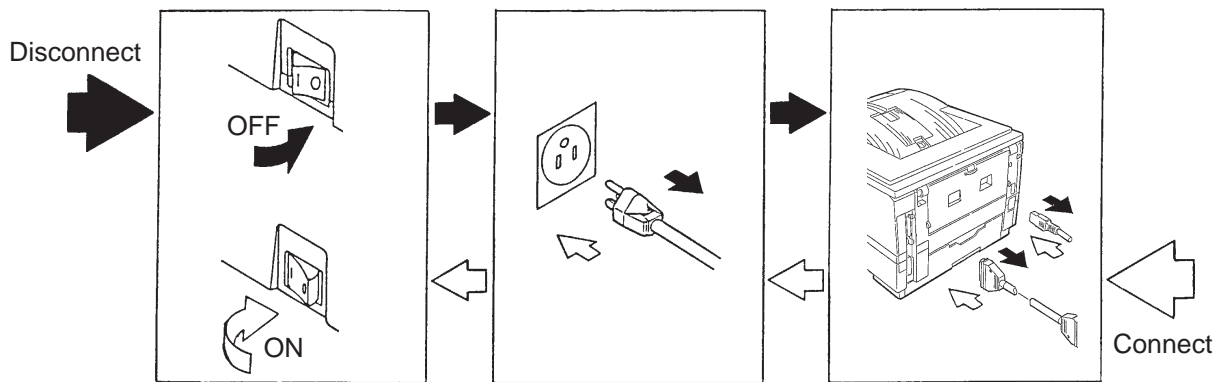
(1) Before starting parts replacement, remove the AC cable and interface cable.

(a) Remove the AC cable in the following procedure:

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

(b) Reconnect the printer in the following procedure.

- i) Connect the AC cable 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 try disassembly as long as the printer is operating normally.

(3) Do not remove unnecessary parts: try to keep disassembly to a minimum.

(4) Use specified service tools.

(5) When disassembling, follow the determined sequence. Otherwise, parts may be damaged.

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

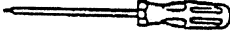
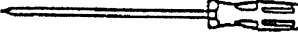

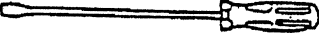




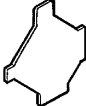
(7) When handling ICs such as microprocessors, ROM and RAM, and circuit boards, do not wear gloves that are likely to generate static electricity.

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

[Service Tools]

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

Table 3-1 Service Tools

No.	Service Tools	Q' ty	Place of use	Remarks
1	 No. 1-100 Philips screwdriver	1	2-2.5 mm screws	
2	 No. 2-200 Philips screwdriver, Magnetized	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	
9	 Disconnect for Jack-in connector	1	Disconnect Jack-in connector	

3.2 Parts Layout

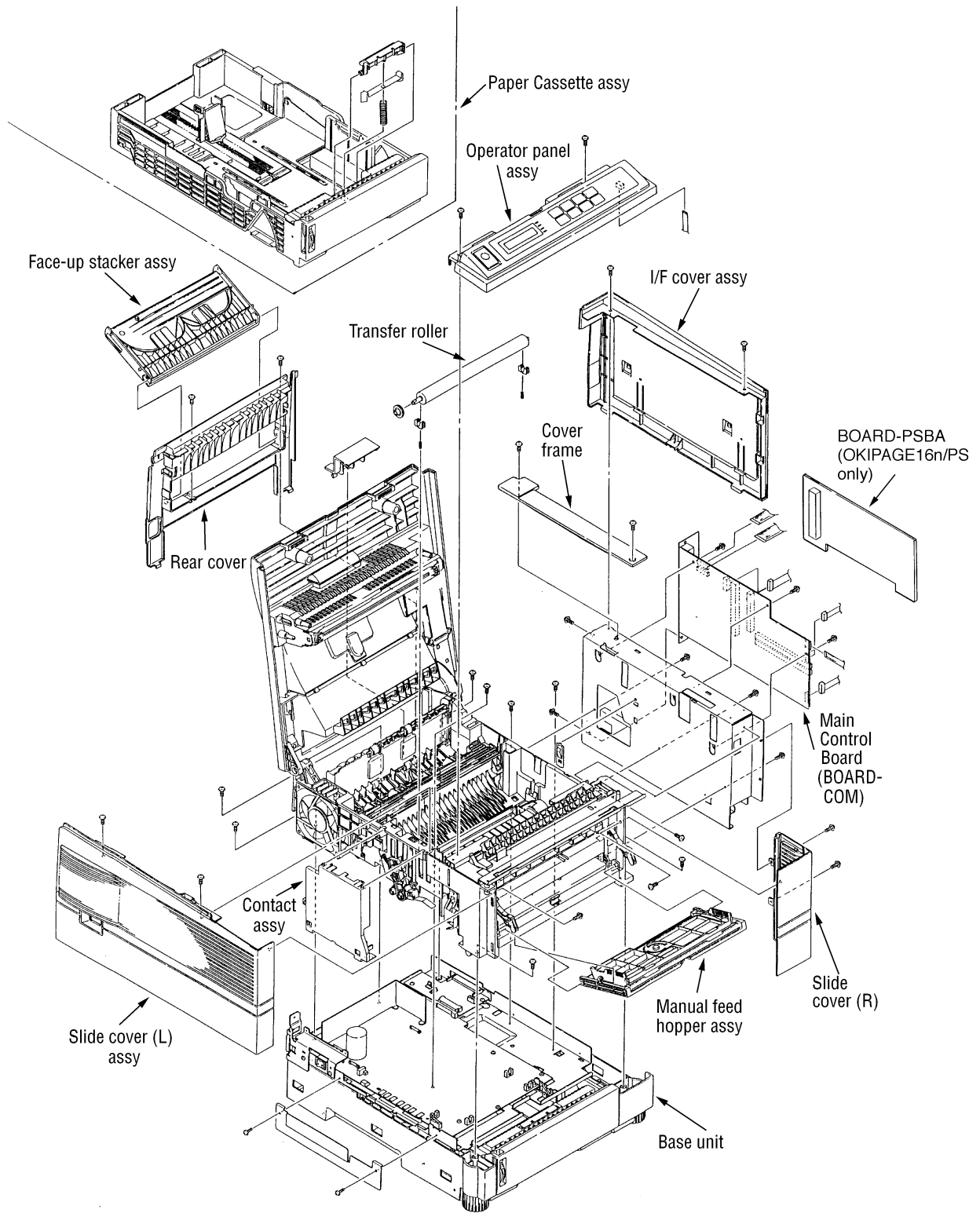


Figure 3-1

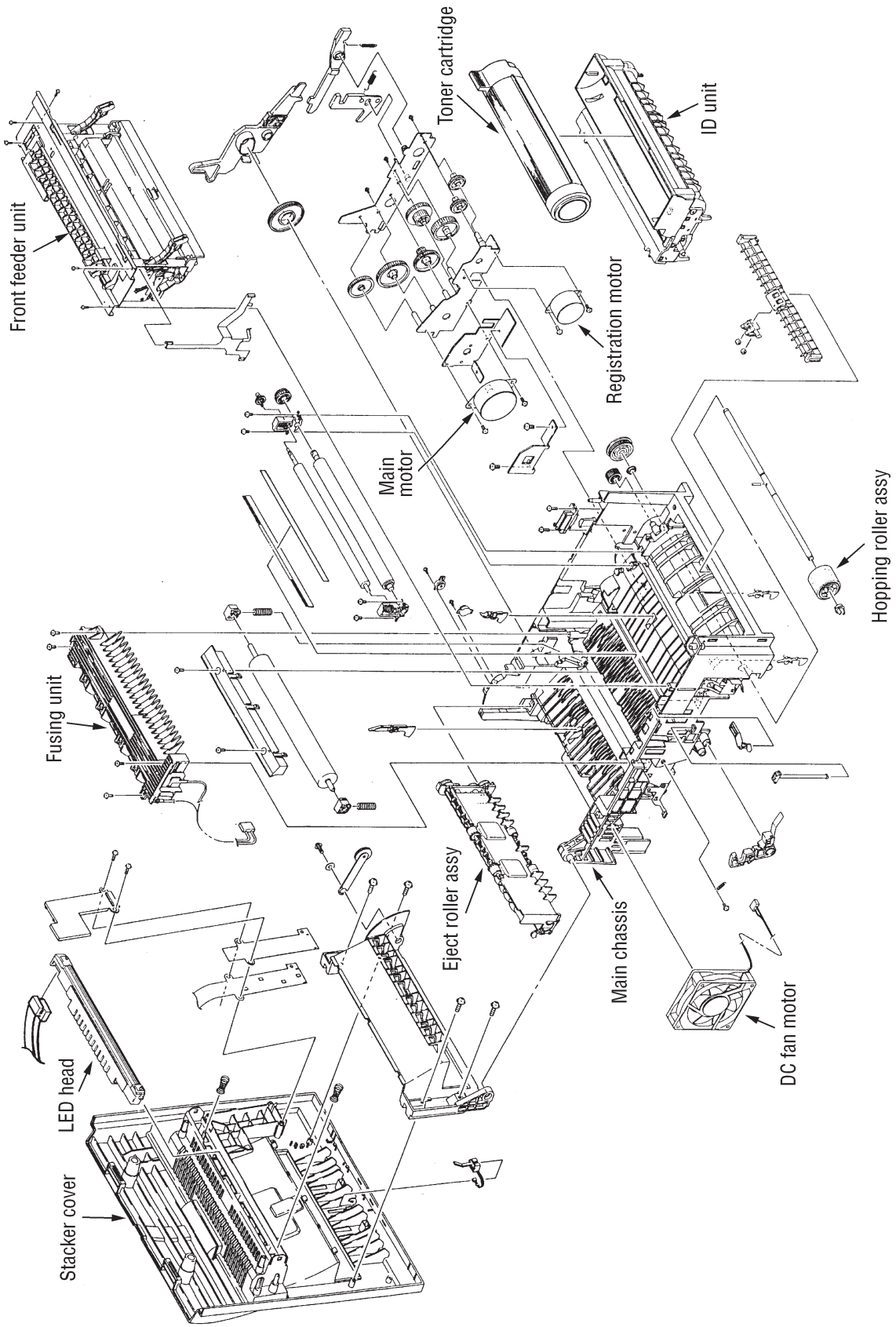


Figure 3-2

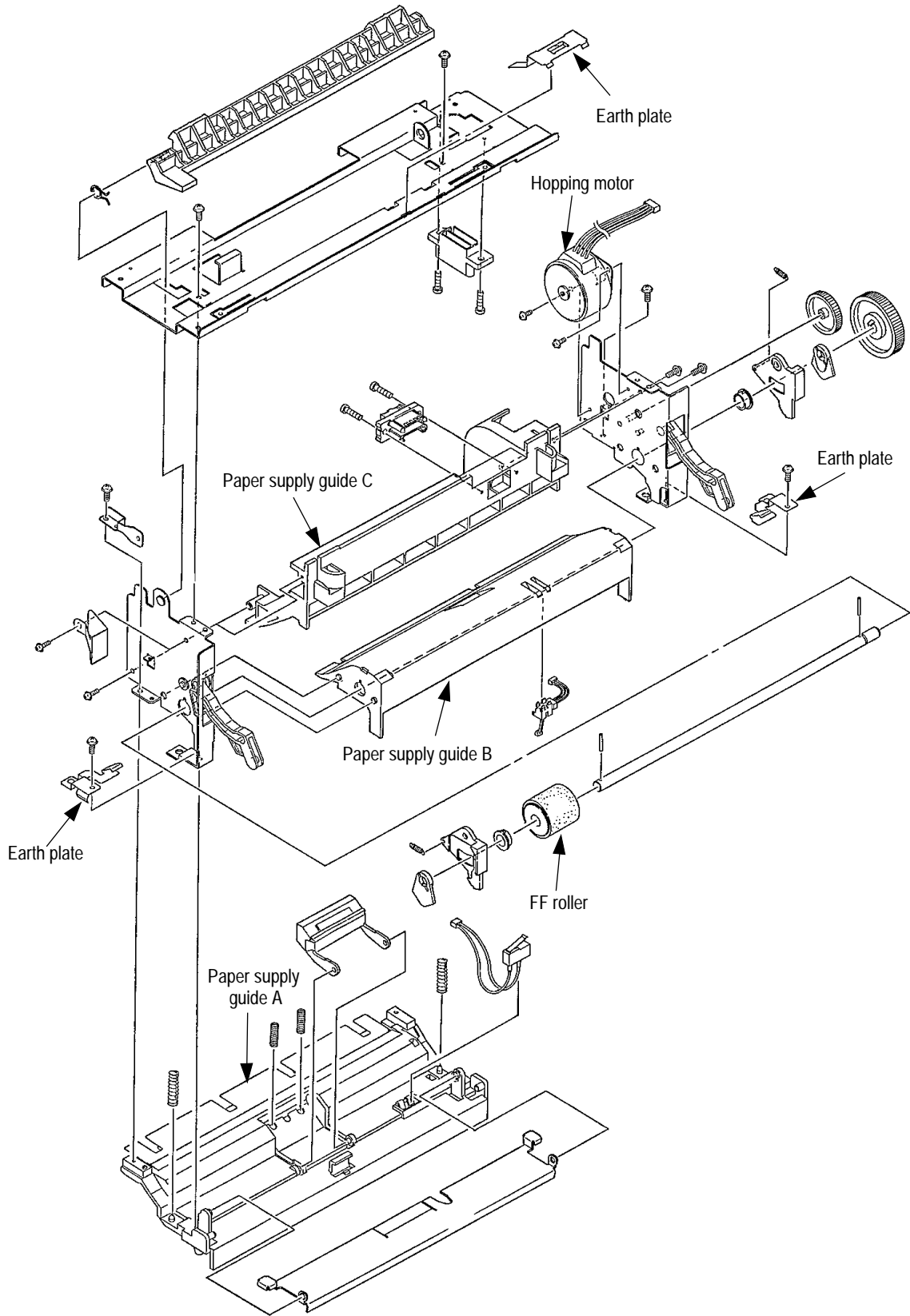


Figure 3-3

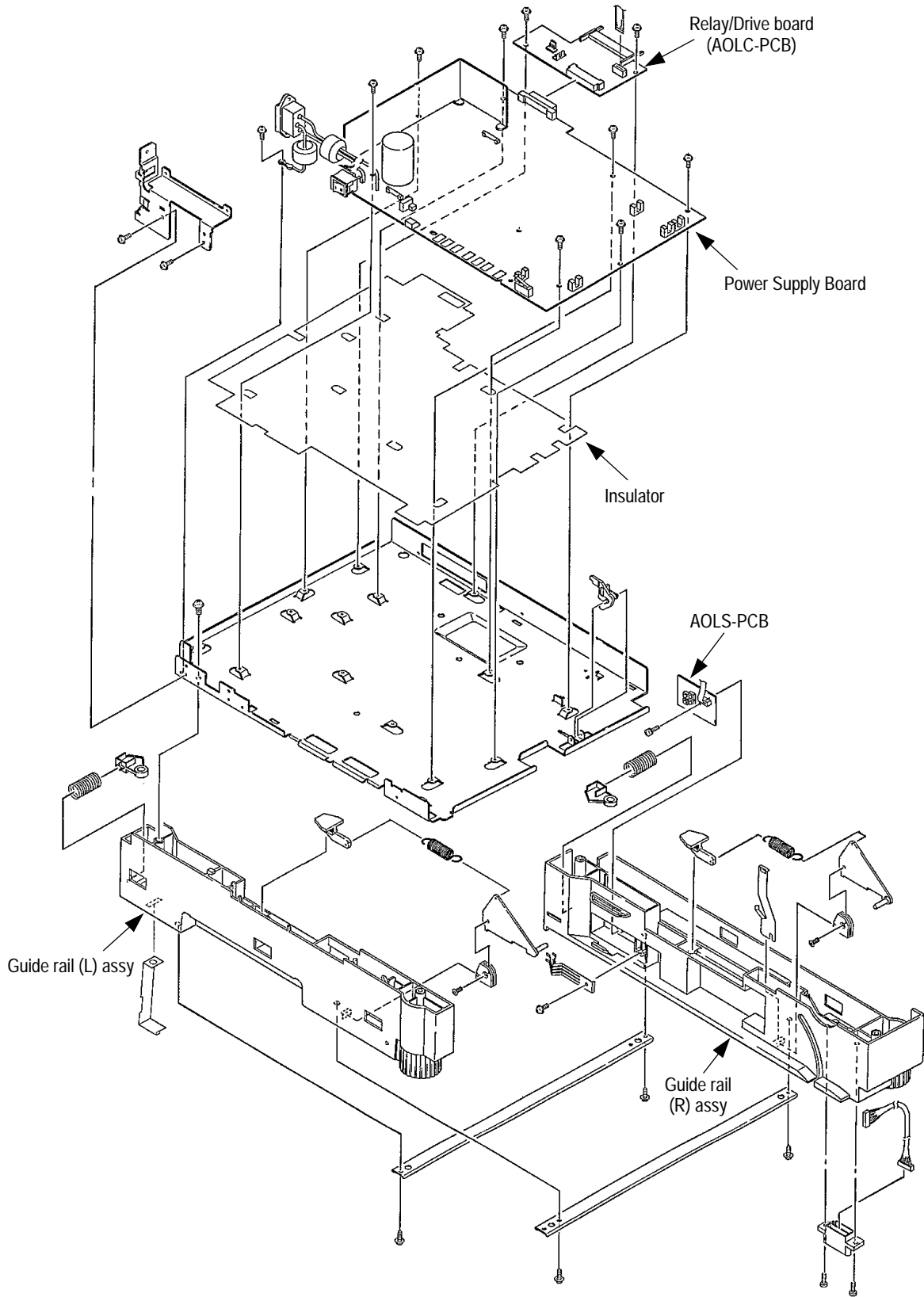
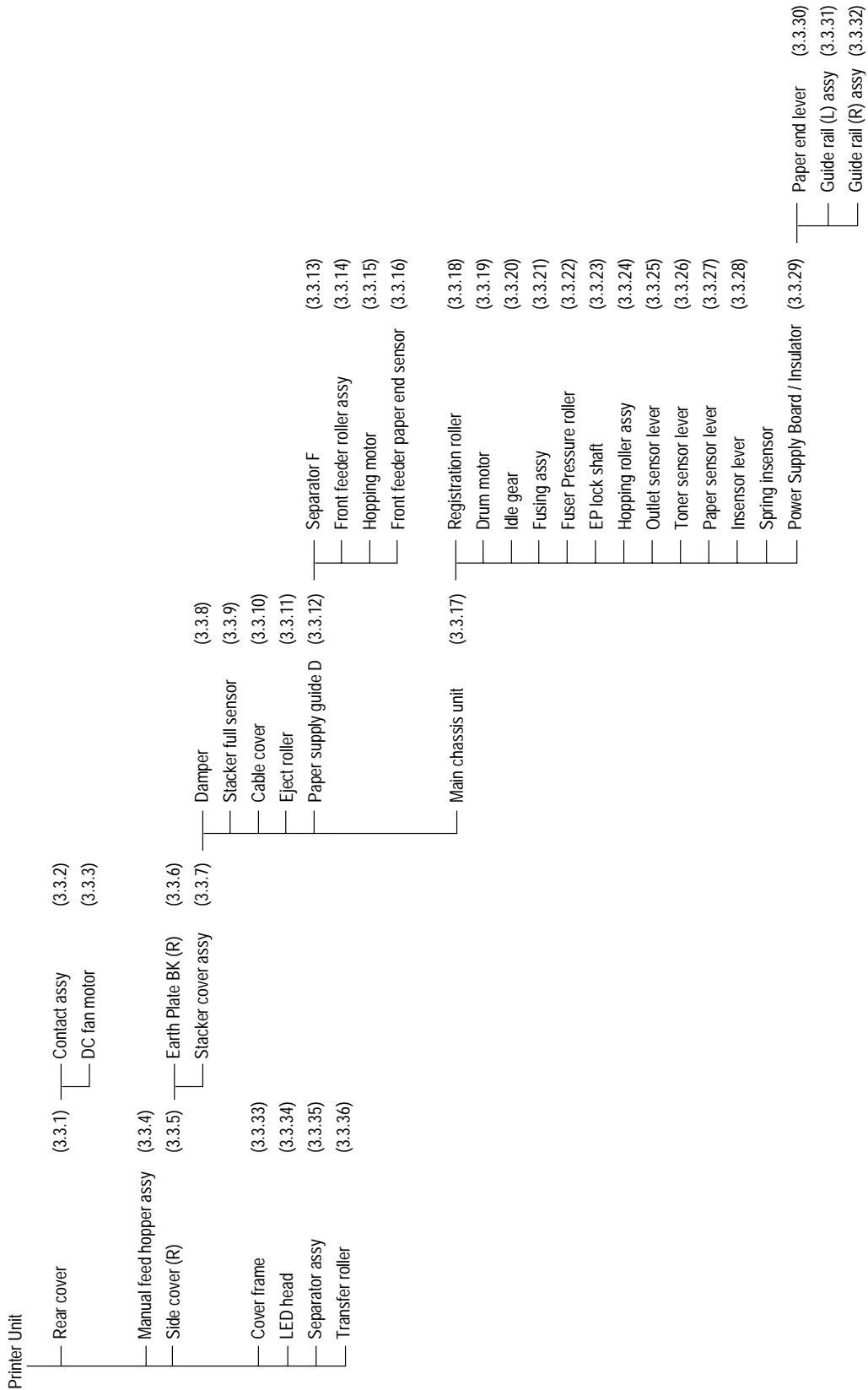


Figure 3-4

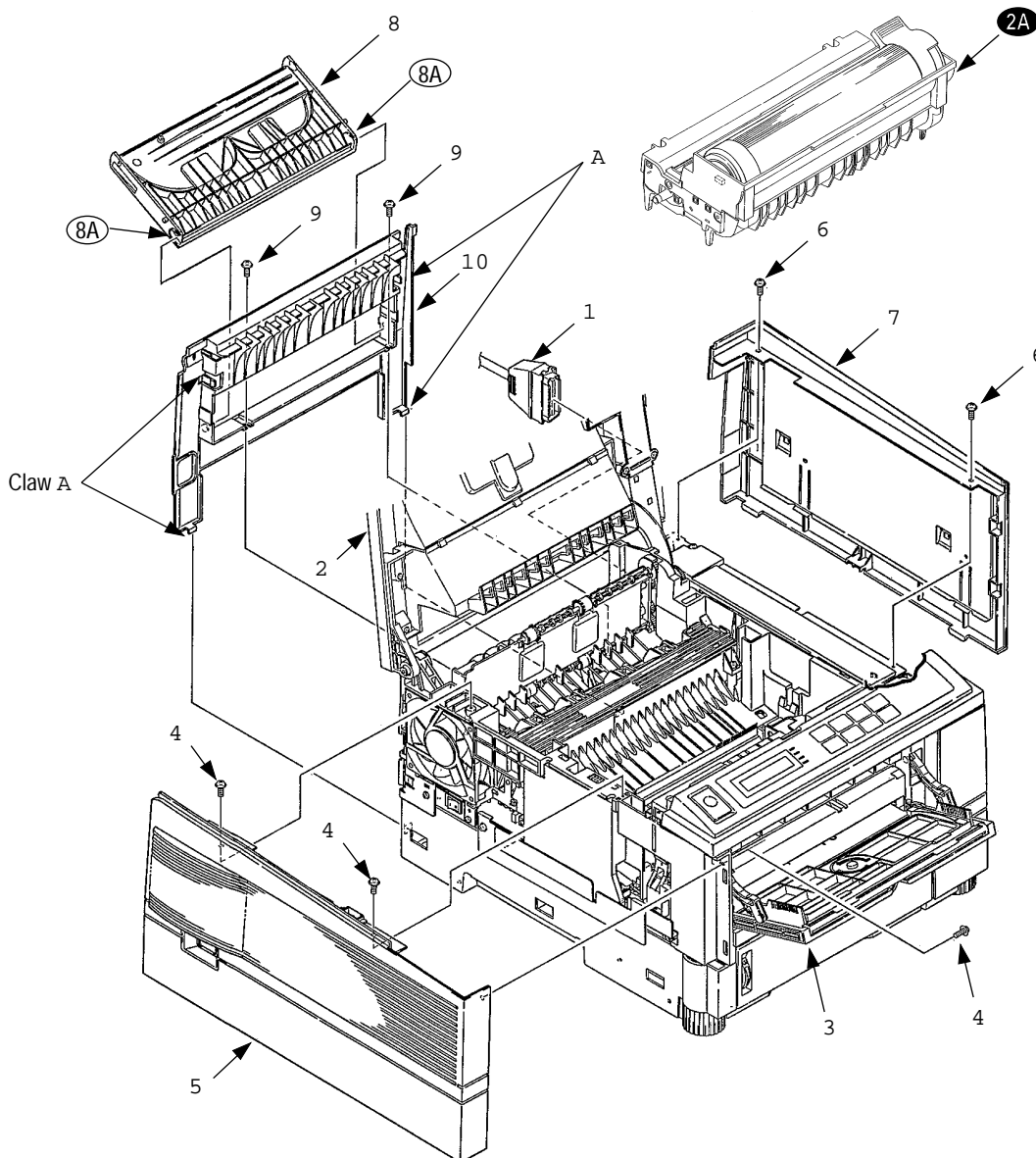
3.3 How to Change Parts

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



3.3.1 Rear cover, side cover (L) Assembly, face-up stacker Assembly, and I/F cover Assembly.

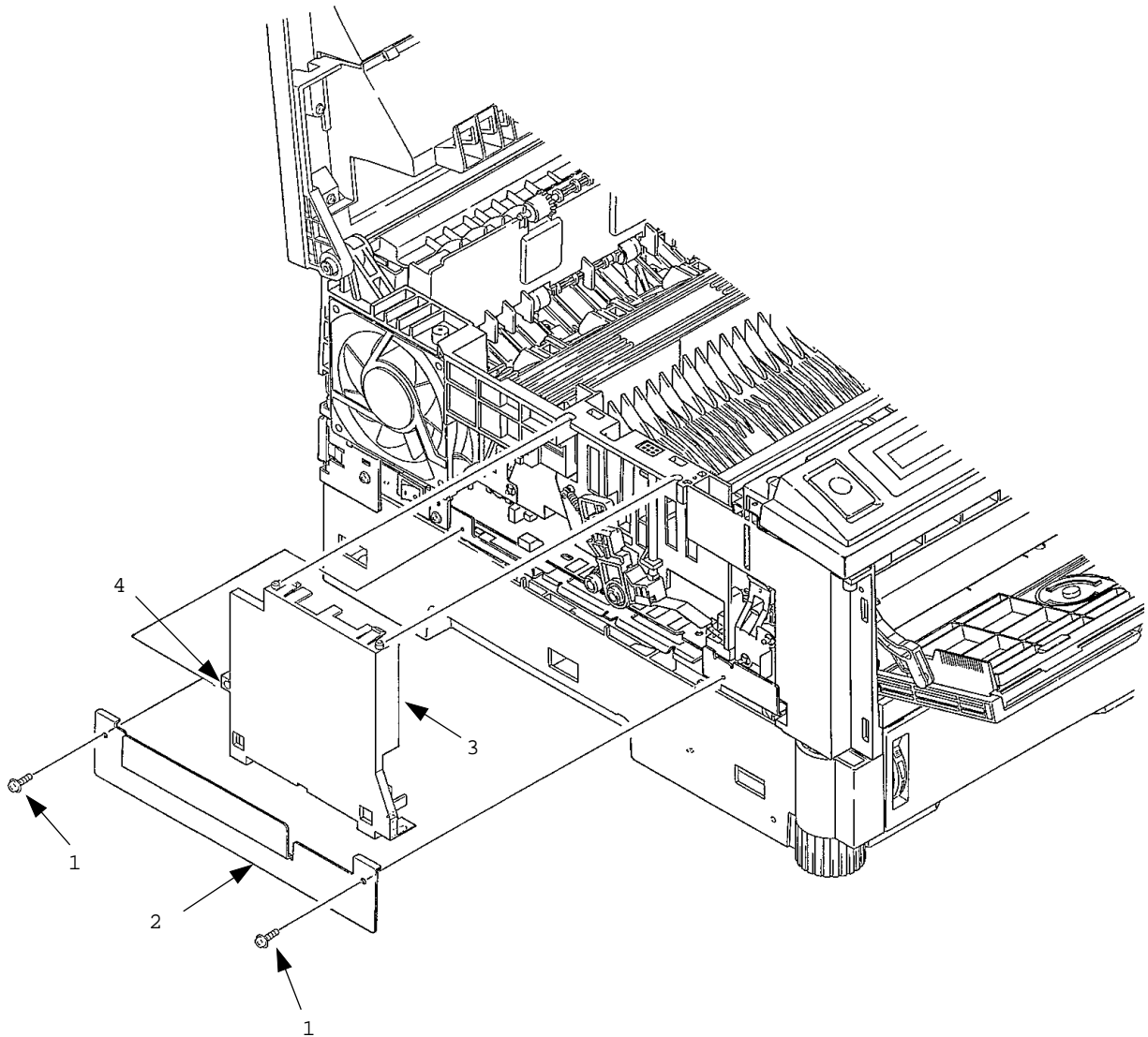
- (1) Turn the AC power switch off. Unplug the AC power cord from the outlet.
- (2) Remove the interface cable 1. Remove drum/toner Assembly 2A and store in black plastic bag shipped w/printer.
- (3) Open the face-up stacker Assembly 8. Disconnect the engagement at the left and right protrusions 8A. Remove the face-up stacker Assembly 8. (Flex the Assembly 8 in the middle to disengage 8A from the Rear cover 0.)
- (4) Open the stacker cover 2 and the manual feed hopper Assembly 3. Remove three screws 4. Remove the side cover (L) Assembly 5.
- (5) Remove two screws 6. Remove the I/F cover Assembly 7.
- (6) Remove two screws 9 and four claws A. (Use a small flat blade screw driver to "pop" claws.) Remove the rear cover 10.



3.3.2 Contact Assembly

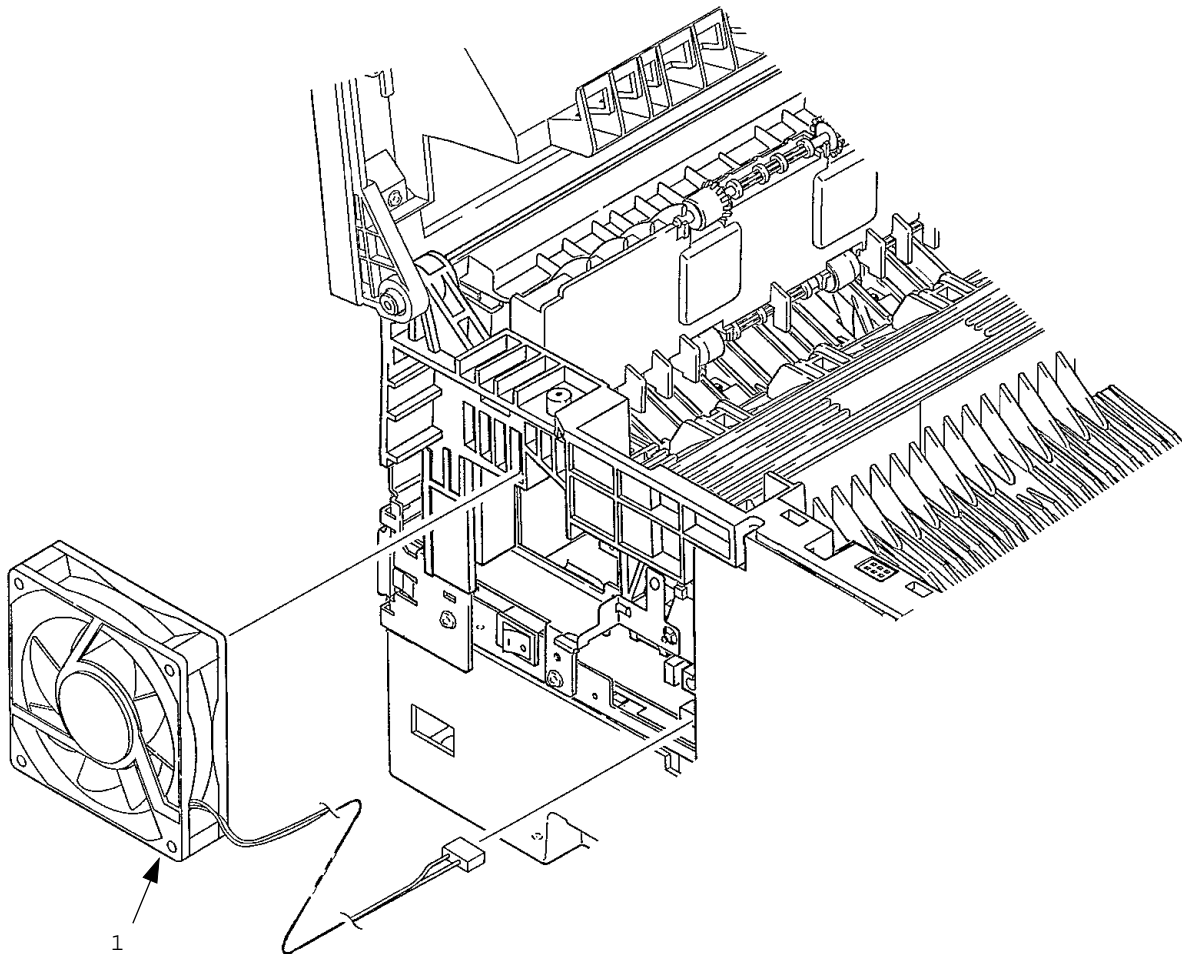
- (1) Turn the AC power switch off. Unplug the AC power cord from the outlet.
- (2) Remove the side cover (L) Assembly (see 3.3.1 (1) to (4)).
- (3) Remove two screws 1. Remove the contact plate (cover) 2 and the contact Assembly 3. Pull bottom of Assembly 3 out first, then the top of Assembly. Remove fan connector cables from location 4.

Caution: Be careful not to deform the electrodes of the contact Assembly when removing the contact Assembly.



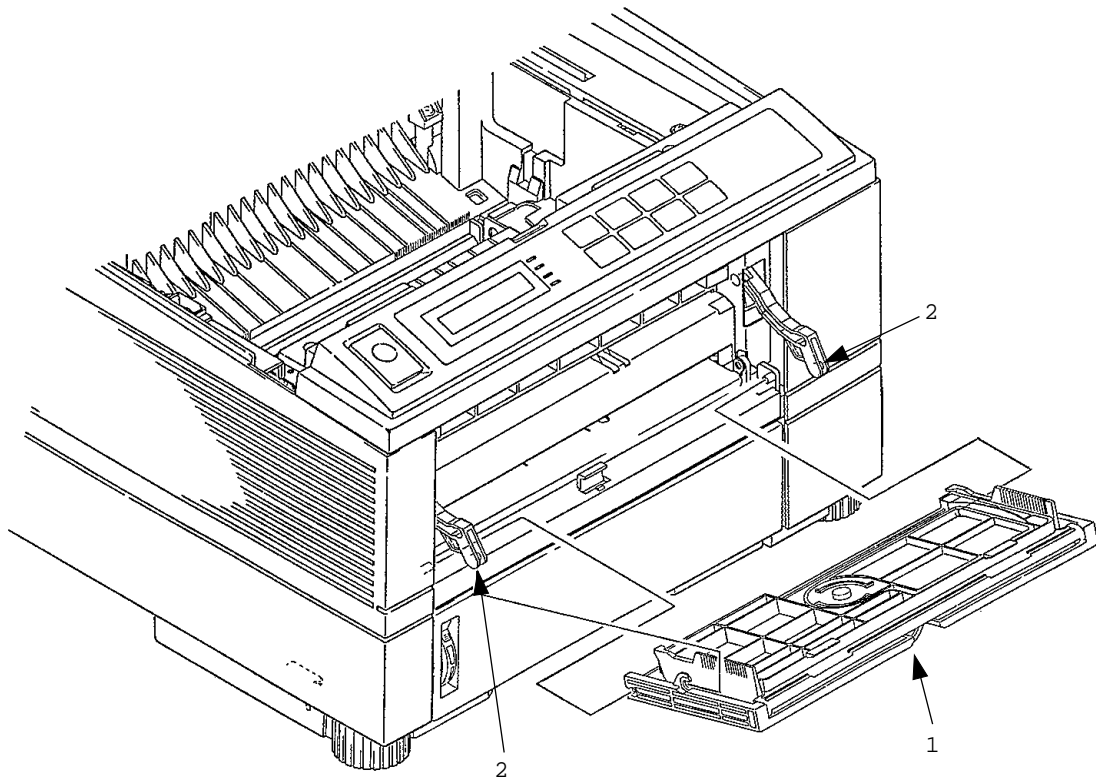
3.3.3 DC fan motor

- (1) Turn the AC power switch off. Unplug the AC power cord from the outlet.
- (2) Remove the side cover (L) Assembly (see 3.3.1 (1) to (4)).
- (3) Unplug the connector of the DC fan motor 1 and remove the DC fan motor 1.



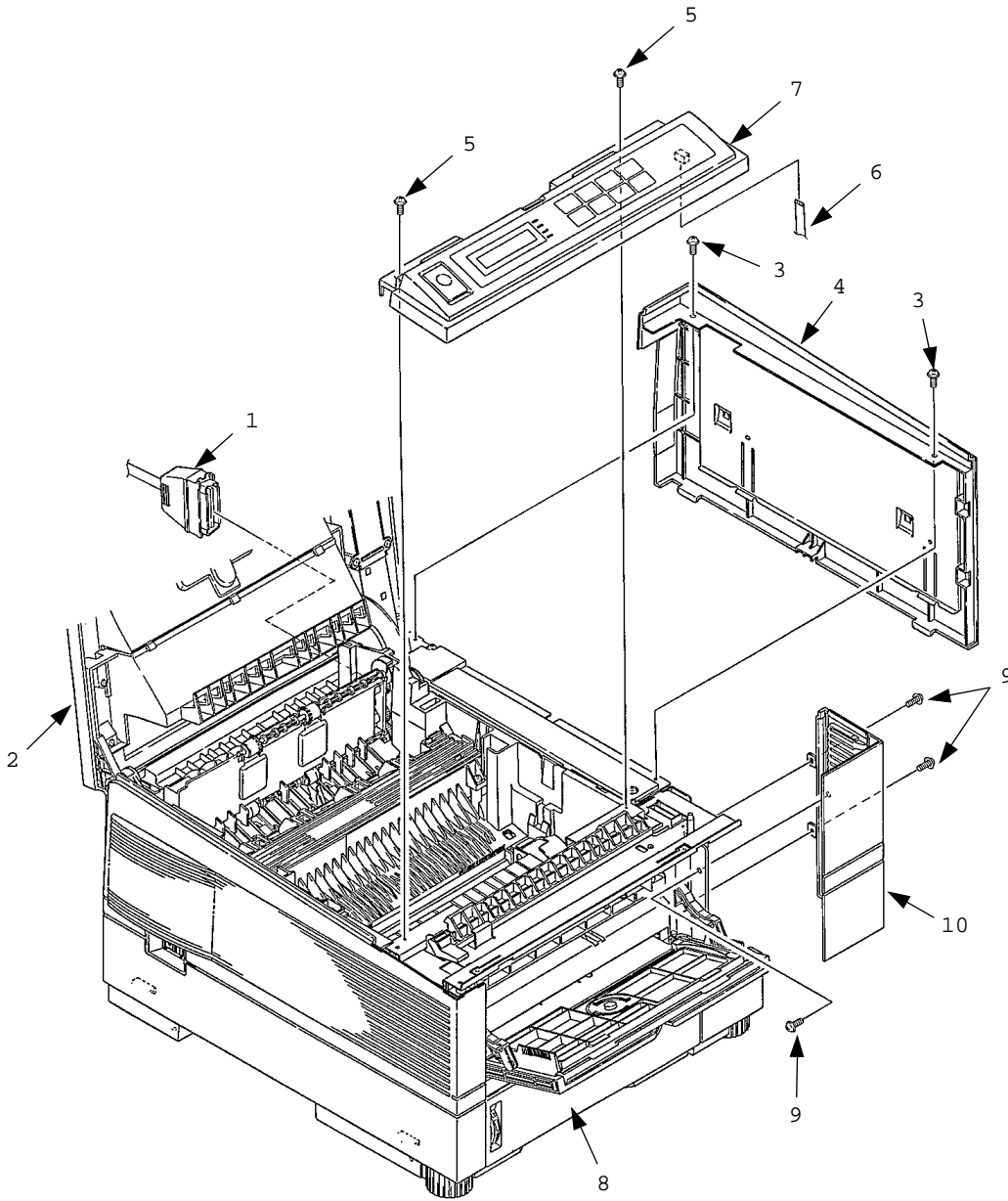
3.3.4 Manual feed hopper Assembly

- (1) Turn the AC power switch off. Unplug the AC power cord from the outlet.
- (2) Open manual feed hopper Assembly 1. Disengage the lower portion of this Assembly.
- (3) Hold manual feed hopper Assembly 1 vertically and remove the left and right levers 2 with a downward motion.



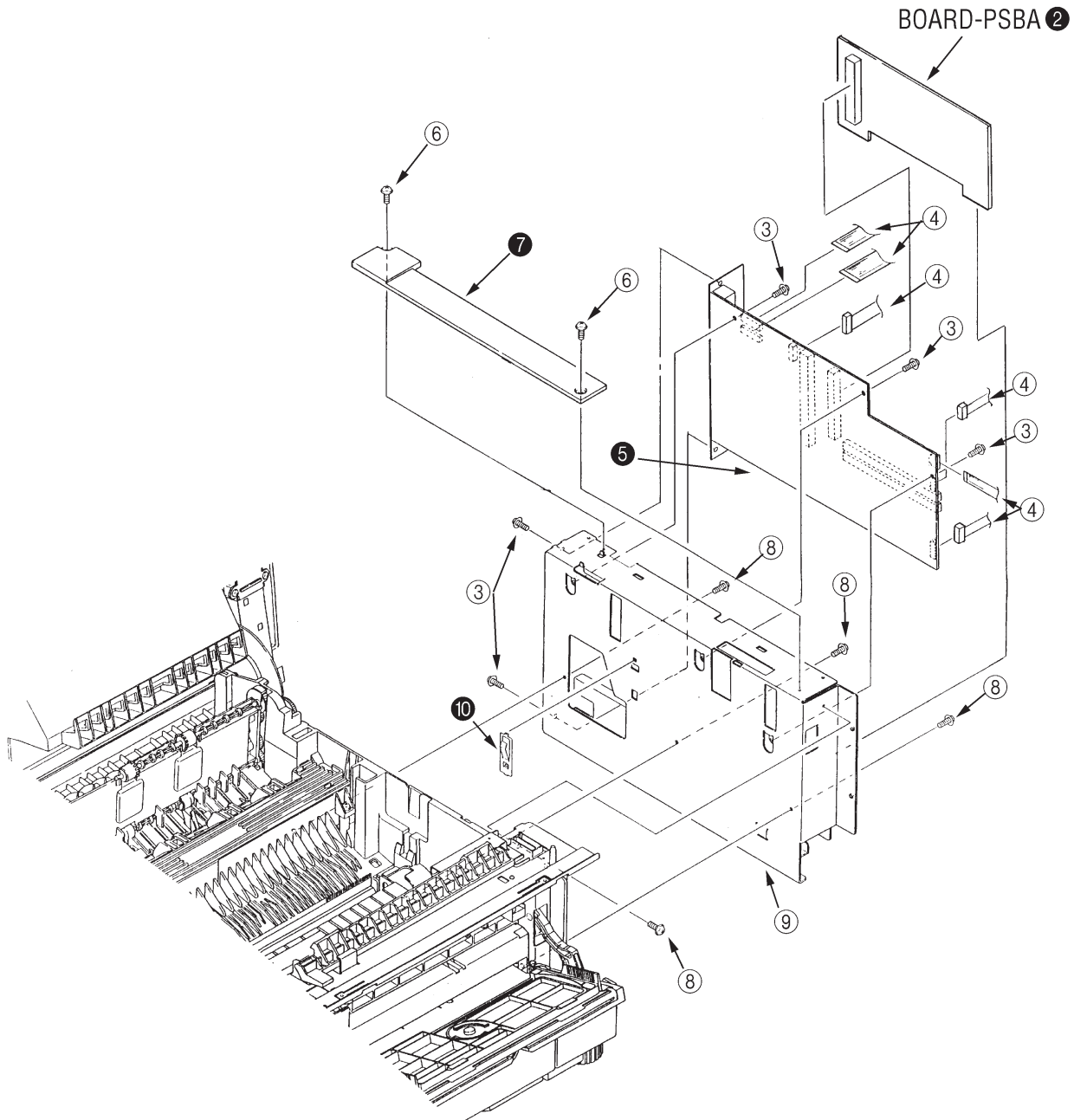
3.3.5 Side cover (R) (operator panel Assembly)

- (1) Turn the AC power switch off. Unplug the AC power cord from the outlet.
- (2) Remove interface cable 1.
- (3) Open stacker cover 2. Remove two screws 3. Remove I/F cover Assembly 4.
- (4) Remove two screws 5 and flexible cable 6 (use care to not damage flexible cable). Remove operator panel Assembly 7.
- (5) Open manual feed hopper Assembly 8. Remove three screws 9 and then remove side cover (R) 10.



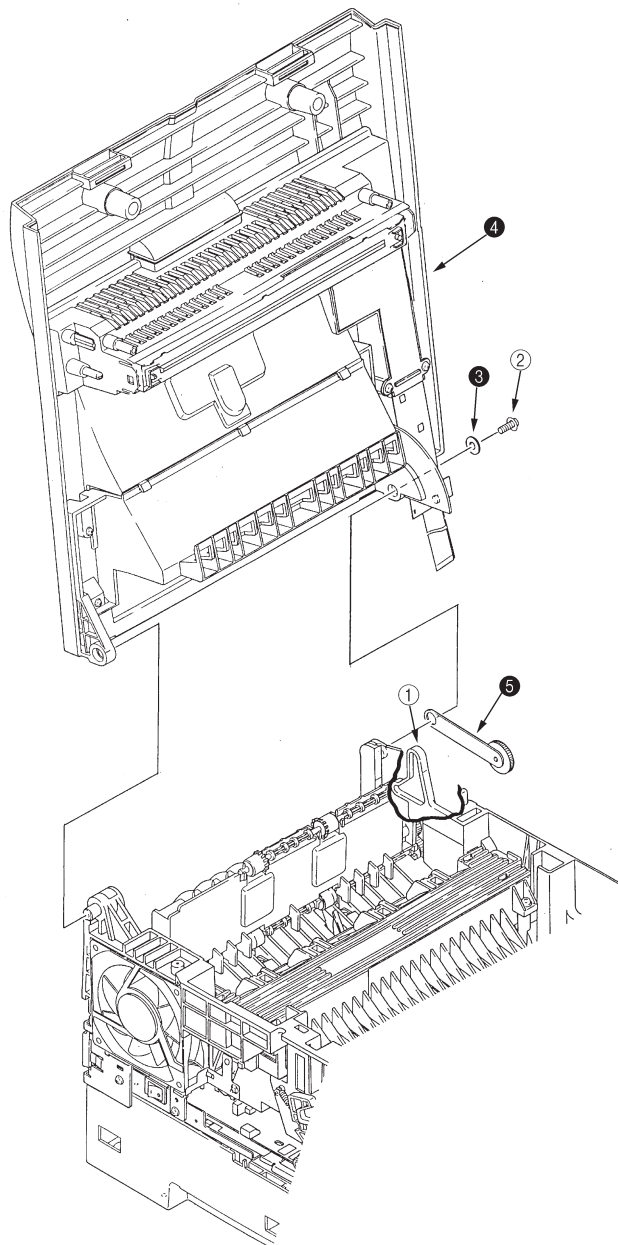
3.3.6 Earth plate BK (R) (BOARD-PSBA, BOARD-COM)

- (1) Turn the AC power switch off. Unplug the AC power cord from the outlet.
- (2) Remove side cover (R) (see 3.3.5).
- (3) Remove a screw 1. Remove BOARD-PSBA 2. (OKIPAGE16n/PS only)
- (4) Remove five screws 3 and seven connectors 4. Remove BOARD-COM 5.
- (5) Remove two screws 6 Remove IC card cover 7.
- (6) Remove four screws 8. Remove side plate (R) 9, by pulling up and out on top part of plate.
- (7) Remove the claws and then remove Earth plate BK (R) 10.



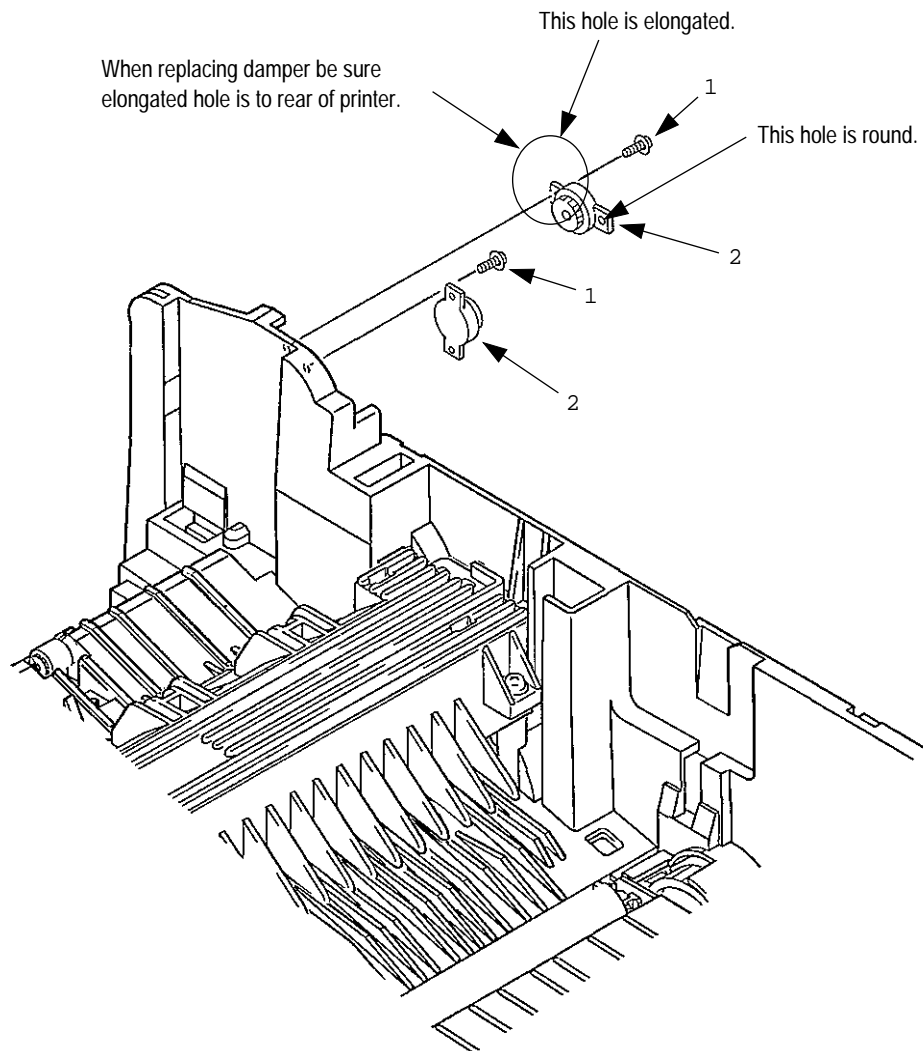
3.3.7 Stacker cover Assembly, damper arm, and washer

- (1) Turn the AC power switch off. Unplug the AC power cord from the outlet.
- (2) Remove the rear cover (see 3.3.1).
- (3) Remove the side cover (R) (see 3.3.5).
- (4) Remove the side plate (R) (see 3.3.6 (1) to (6)).
- (5) Disconnect the engagement of backup release lever 1 with the protrusion on the light side surface on the right side of the stacker cover.
- (6) Remove screw 2 and washer 3. Remove two claws. Remove stacker cover Assembly 4 (at this time, the damper arm 5 is also removed).



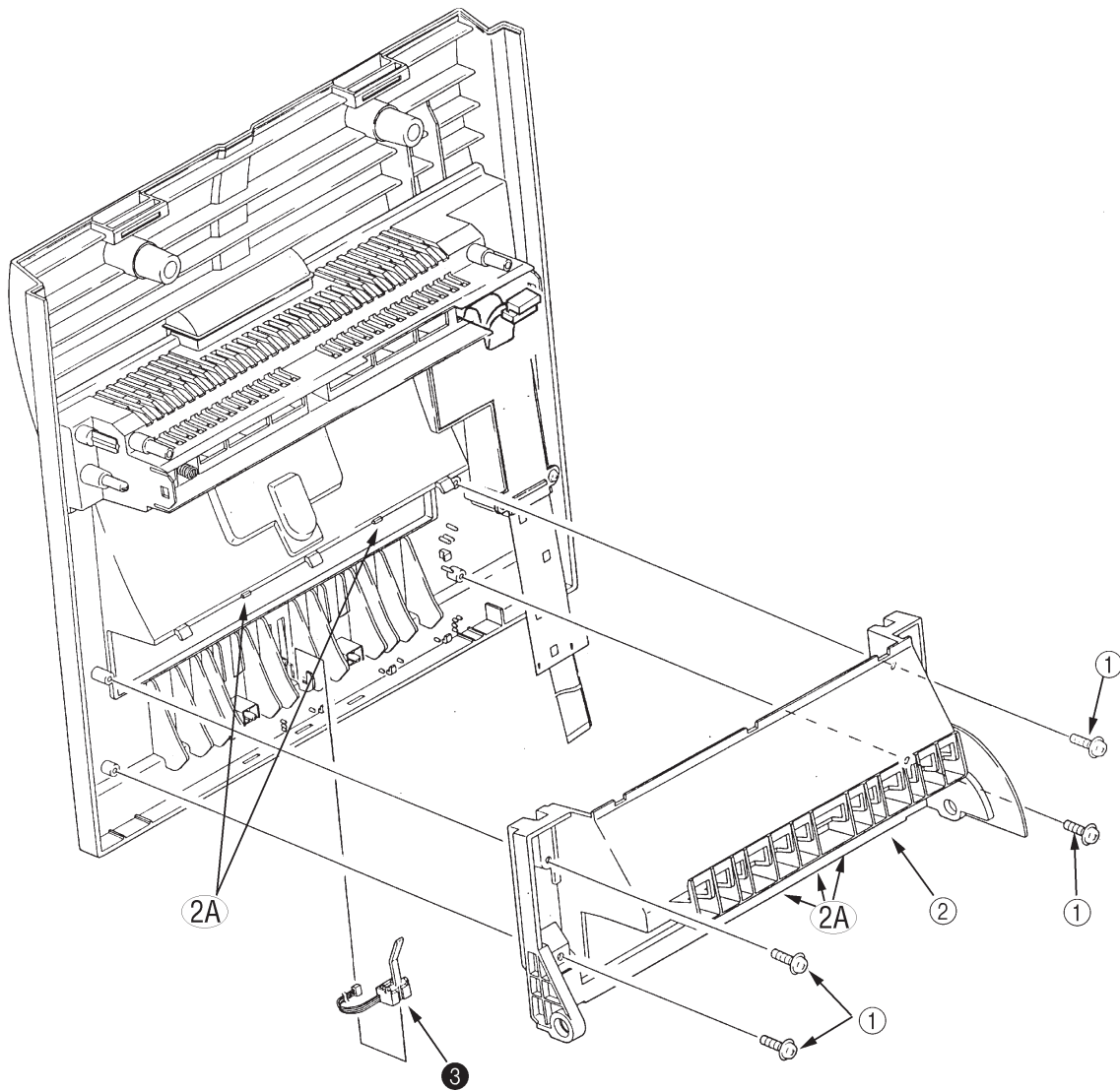
3.3.8 Damper

- (1) Turn the AC power switch off. Unplug the AC power cord from the outlet.
- (2) Remove the damper arm (see 3.3.7).
- (3) Remove two screws 1 and then remove two dampers 2.



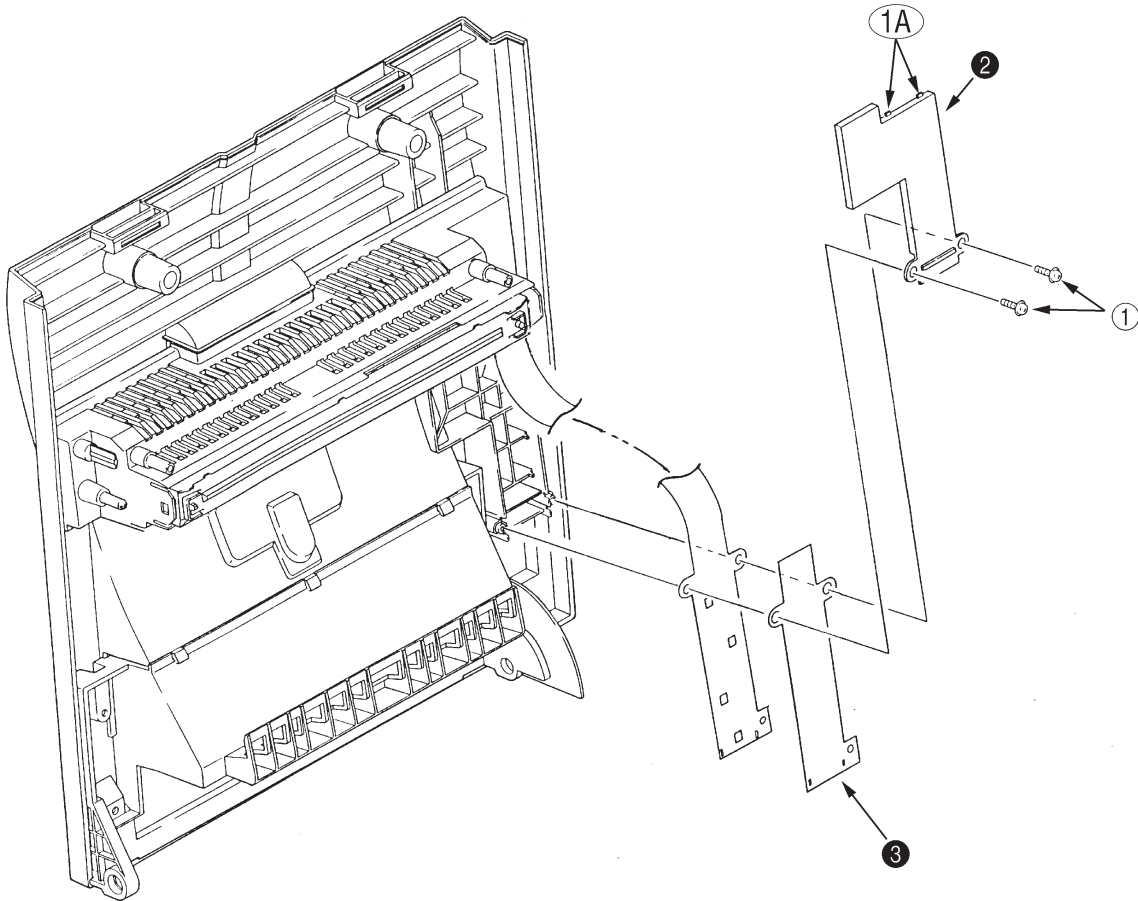
3.3.9 Stacker full sensor Assembly

- (1) Turn the AC power switch off. Unplug the AC power cord from the outlet.
- (2) Remove the stacker cover Assembly (see 3.3.7).
- (3) Remove four screw 1. Remove stacker mount 2 by releasing the tabs at position 2A.
- (4) Remove stacker full sensor Assembly 3 by releasing spreading the plastic tabs on each side of sensor Assembly 3 and lifting switch from cover.



3.3.10 Cable cover (cable guides A and B)

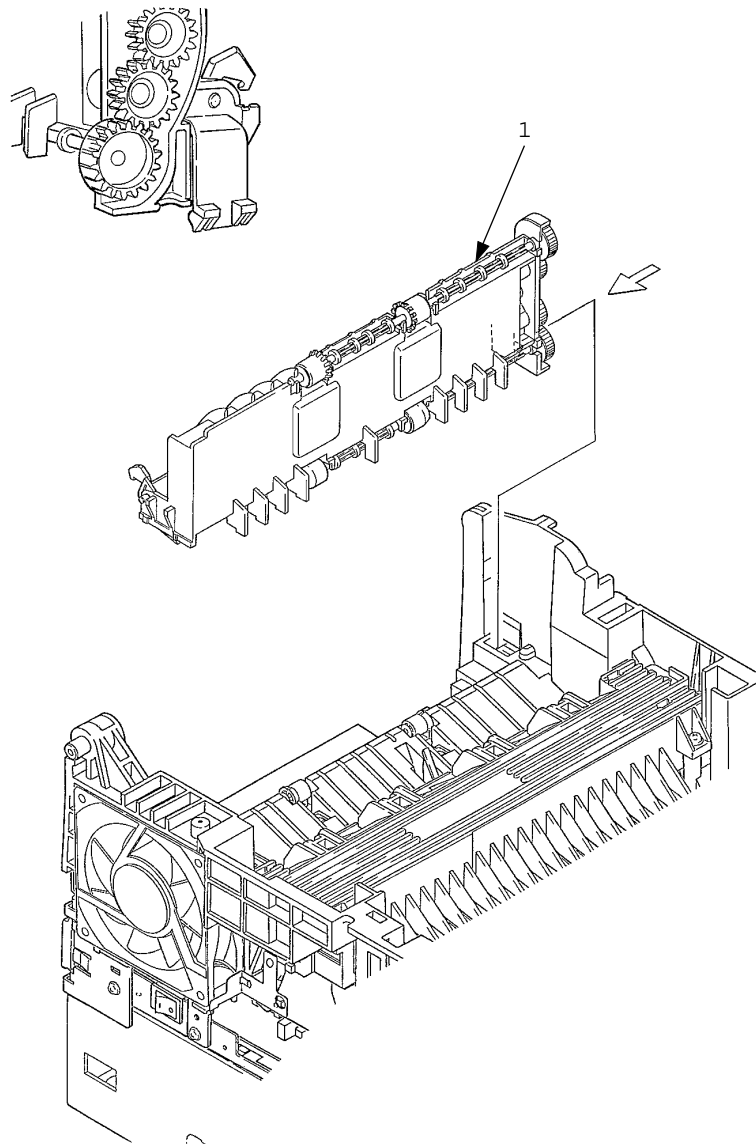
- (1) Turn the AC power switch off. Unplug the AC power cord from the outlet.
- (2) Remove the stacker cover Assembly (see 3.3.7).
- (3) Remove two screws 1 release tabs at position 1A Remove cable cover 2, cable guide A 3.



Note: Use care when replacing cable cover. Do not pinch, crimp, or cut cables or protective sheet.

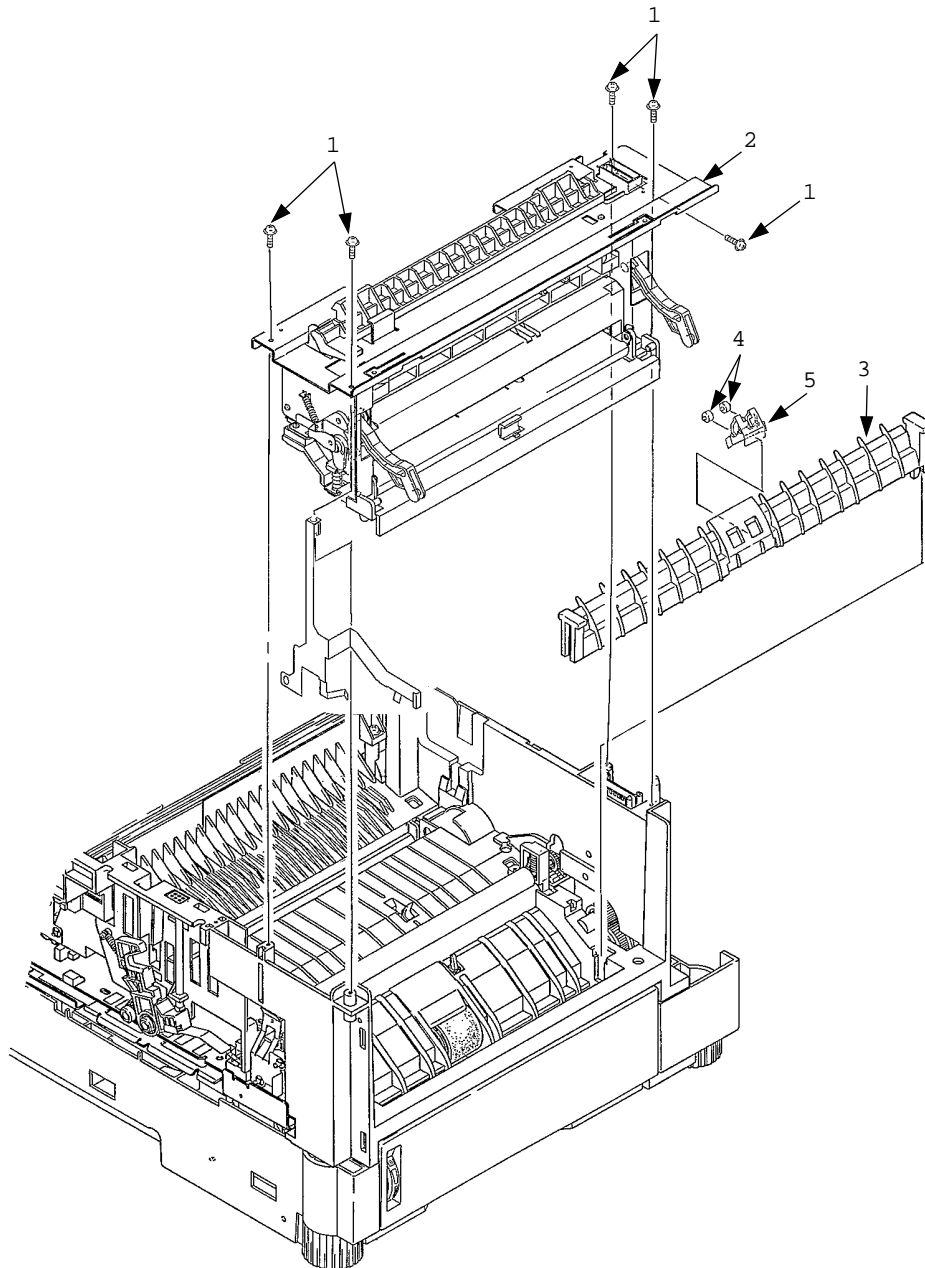
3.3.11 Eject roller Assembly

- (1) Turn the AC power switch off. Unplug the AC power cord from the outlet.
- (2) Remove the rear cover (see 3.3.1).
- (3) Remove the side cover (R) (see 3.3.5).
- (4) Remove the side plate (R) (see 3.3.6 (1) to (6)).
- (5) Remove the stacker cover Assembly (see 3.3.7).
- (6) Release the latch on the right side of eject roller Assembly 1. Lift up and remove the eject roller Assembly.



3.3.12 Paper supply guide D

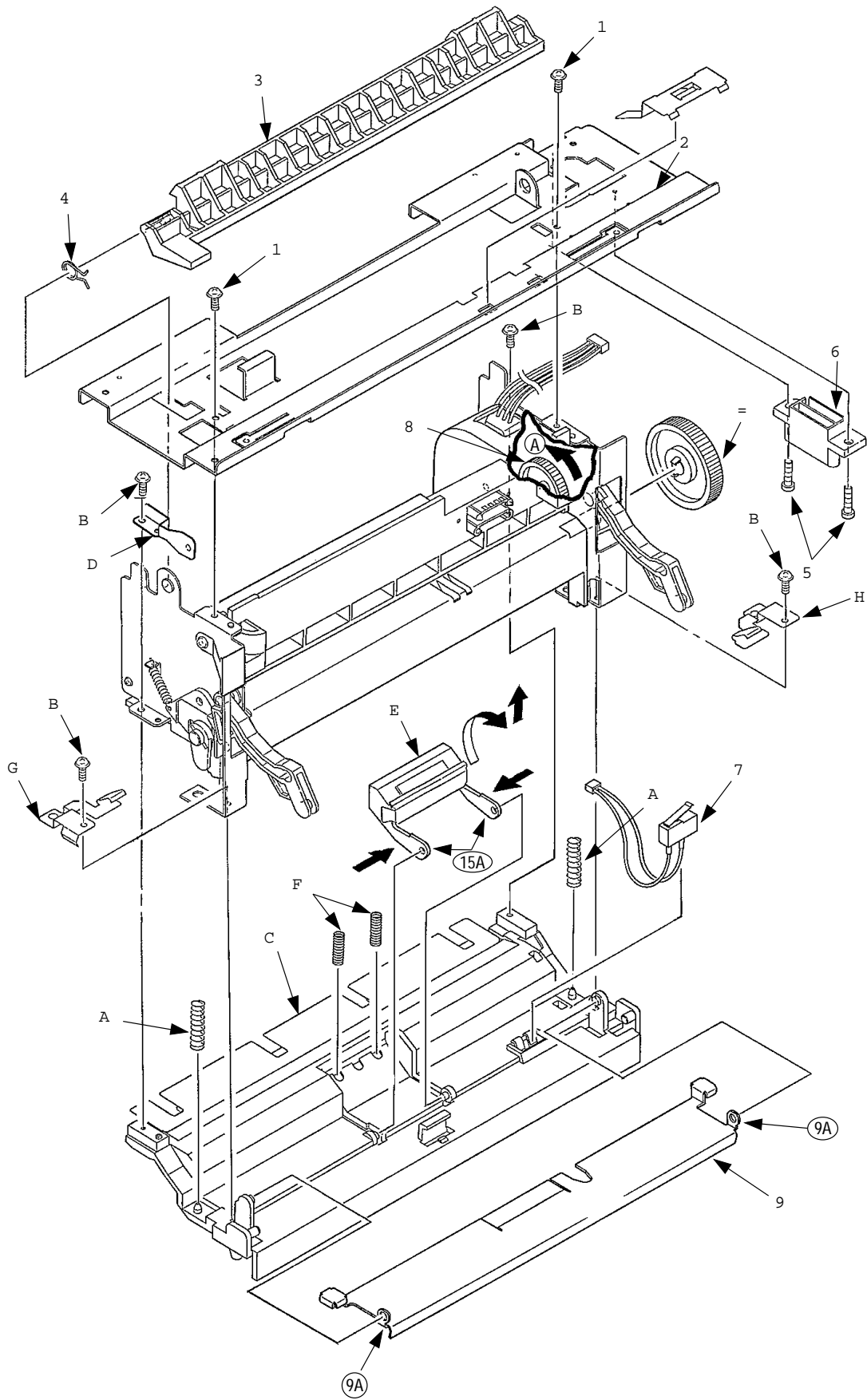
- (1) Turn the AC power switch off. Unplug the AC power cord from the outlet.
- (2) Remove the side cover (R) (see 3.3.5).
- (3) Remove five screws 1. Lift up and remove front feeder roller Assembly 2.
- (4) Lift up and remove paper supply guide D 3. (At this time, two bias rollers 4 and bias spring 5 are also removed. Be careful not to lose them.)



3.3.13 Separator F

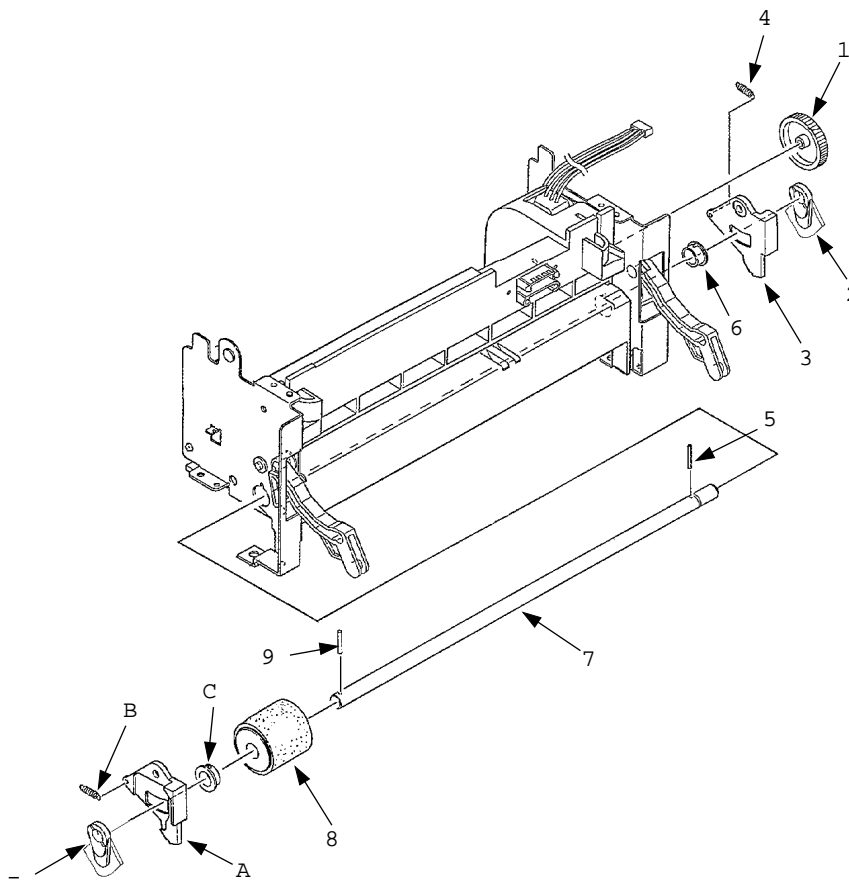
- (1) Turn the AC power switch off. Unplug the AC power cord from the outlet.
- (2) Remove the manual feed hopper Assembly (see 3.3.4).
- (3) Remove the side cover (R) (see 3.3.5).
- (4) Remove the front feeder Assembly (see 3.3.12 steps (1) to (3)). Make a diagram of wire locations and routing.
- (5) Remove two screws 1 and then remove the inner cover 2. At this time, the cover lock lever 3 and the torsion spring 4 are also removed, note position of torsion spring.
- (6) Remove two screws 5 and then remove square-shaped connector 6.
- (7) Using a dedicated tool, remove the connector of switch Assembly 7 from square-shaped connector 6.
- (8) Turn idle gear 8 in the direction of arrow (A) until front feeder plate 9 is elevated.
- (9) Remove front feeder gear = and then remove two springs (F) A. Be careful not to lose the springs.
- (10) Remove four screws B and then remove paper supply guide A C. (At this time, front feeder earth plate D G H are also removed.)
- (11) Remove front feeder plate 9 by releasing the engagement at two parts (9A). Switch Assembly 7 may now be removed.
- (12) Pull up separator E toward you and then release two mounting posts at (15A) to remove the separator. (At this time, two springs F are also removed simultaneously. Be careful not to lose the springs.)
- (13) Release two clutches on paper supply guide C and pull out switch Assembly 7 upward. Switch Assembly 7 should be moved more towards the center of the paper path.

During Re-assembly use great care: do not pinch, crimp, or cut wires to switch Assembly 7.



3.3.14 Front feeder roller Assy

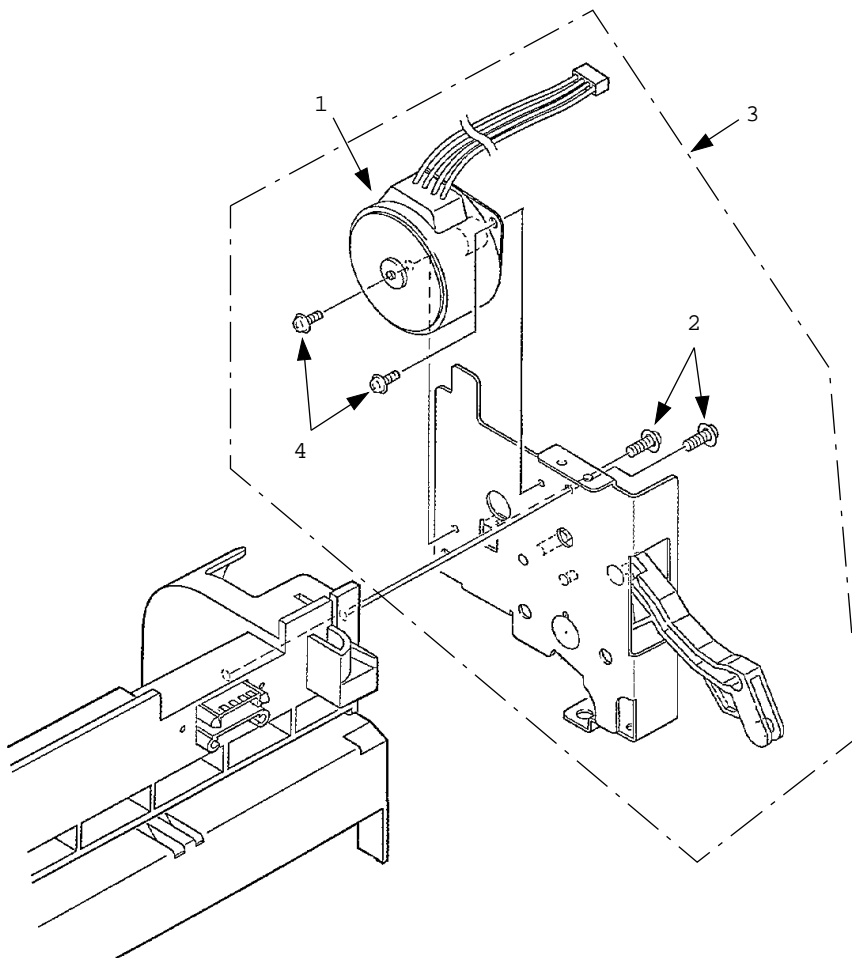
- (1) Turn the AC power supply switch off. Unplug the AC power cord from the outlet.
- (2) Remove the manual feed hopper Assy (see 3.3.4).
- (3) Remove the side cover (R) (see 3.3.5).
- (4) Remove the front feeder roller Assy (see 3.3.12 (1) to (3)).
- (5) Remove the paper supply guide A (see 3.3.13 (1) to (10)).
- (6) Remove idle gear 1 and then remove the right side front feeder cam 2, release lever (R) 3, and spring 4. (At this time, knock pin 5 and bearing F 6 are also removed. Be careful not to lose them.) Do not mix these parts with those from the left side of Assy.
- (7) Pull out the front feeder shaft 7 toward the left and then remove front feeder roller Assy 8.
- (8) Remove knock pin 9 and then remove front feeder cam = on the left (L) side, release lever (L) A, and spring B. (At this time, the bearing F C on the left (L) side is also removed.) Do not mix these parts with those from the right side of Assy.



- Note 1:** Hopping roller orientation when removed from shaft.
2: Be sure sensor arm swings freely after re-assembly.
3: Be sure that during re-assembly both feeder cams (2 and =) are facing the same direction.

3.3.15 Hopping motor

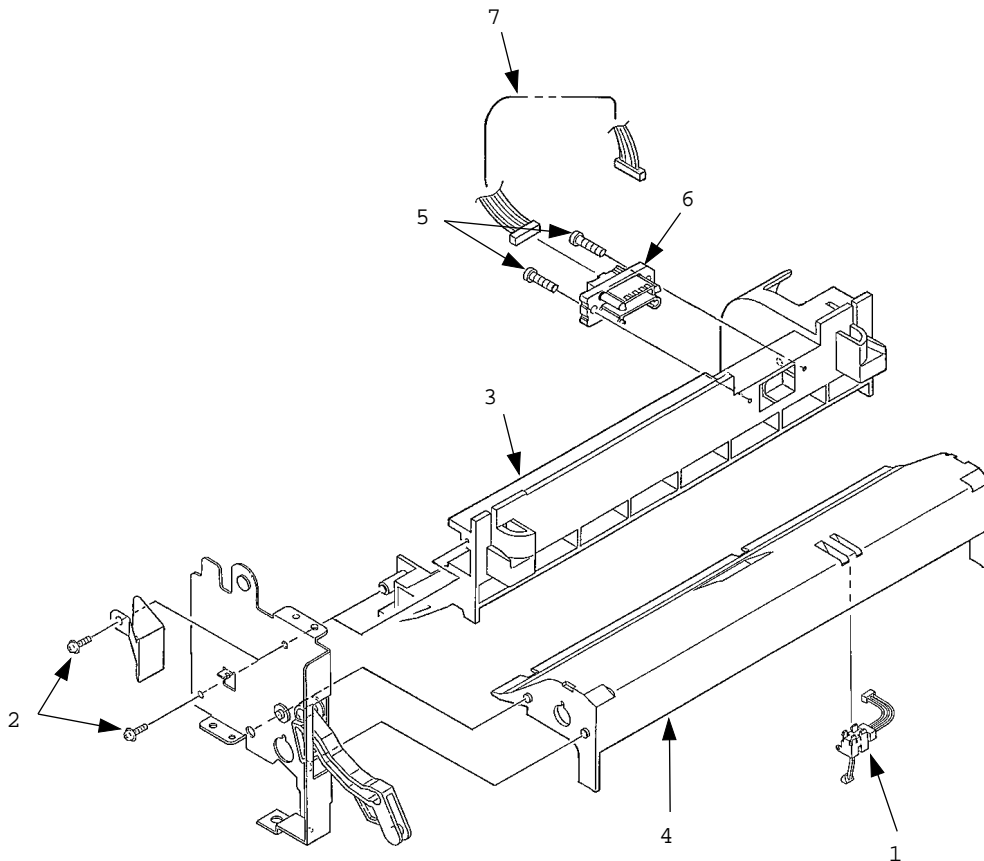
- (1) Turn the AC power switch off. Unplug the AC power cable from the outlet.
- (2) Remove the manual feed hopper Assembly (see 3.3.4).
- (3) Remove the side cover (R) (see 3.3.5).
- (4) Remove the front feeder Assembly (see 3.3.12.(1) to (3)).
- (5) Remove the inner cover and square-shaped connector (see 3.3.13.(5) and (6)).
- (6) Using a dedicated tool, remove the connector of hopping motor 1 from the square-shaped connector.
- (7) Remove the paper supply guide A (see 3.3.13. (7) to (10)).
- (8) Remove the lever (R) (see 3.3.10. (6)).
- (9) Remove two screws 2 and then remove side plate (R) Assembly 3.
- (10) Remove two screws 4 and then remove hopping motor 1.



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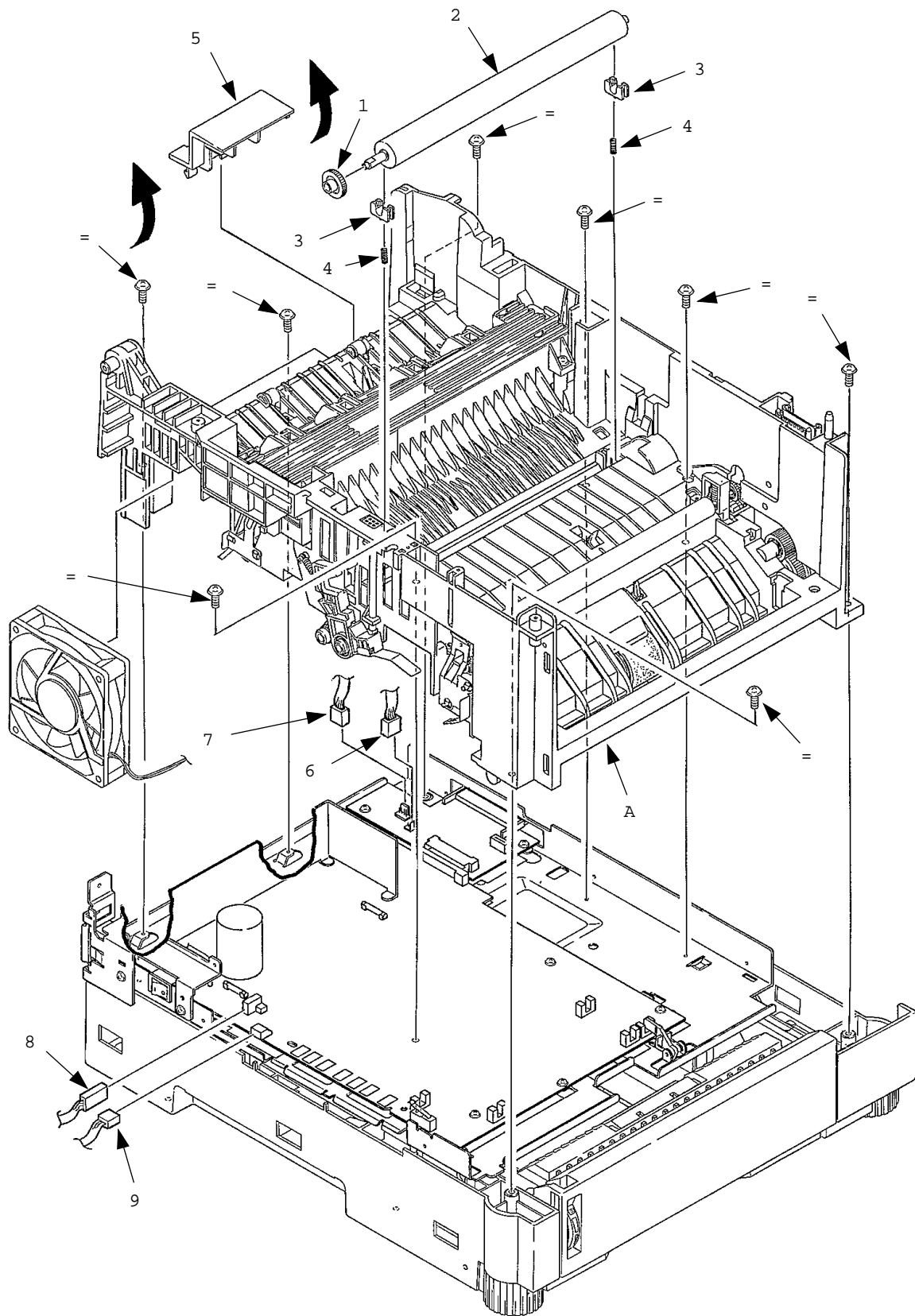
3.3.16 Front feeder paper end sensor

- (1) Turn the AC power switch off. Unplug the AC power cord from the outlet.
- (2) Remove the manual feed hopper Assembly (see 3.3.4).
- (3) Remove the side cover (R) (see 3.3.5).
- (4) Remove the front feeder roller Assembly (see 3.3.12. (1) to (3)).
- (5) Remove the side plate (R) Assembly (see 3.3.15. (1) to (9)).
- (6) Using a dedicated tool, remove the connector of front feeder paper end sensor 1 from the square-shaped connector.
- (7) Remove two screws 2 and then remove paper supply guide C 3.
- (8) Remove paper supply guide B 4.
- (9) Remove four claws and then remove front feeder paper end sensor 1.
- (10) Remove two screws 5 and then remove square-shaped connector 6 from paper supply guide C 3.
- (11) Using a dedicated tool, remove the connector cord 7 from the square-shaped connector.



3.3.17 Main chassis unit

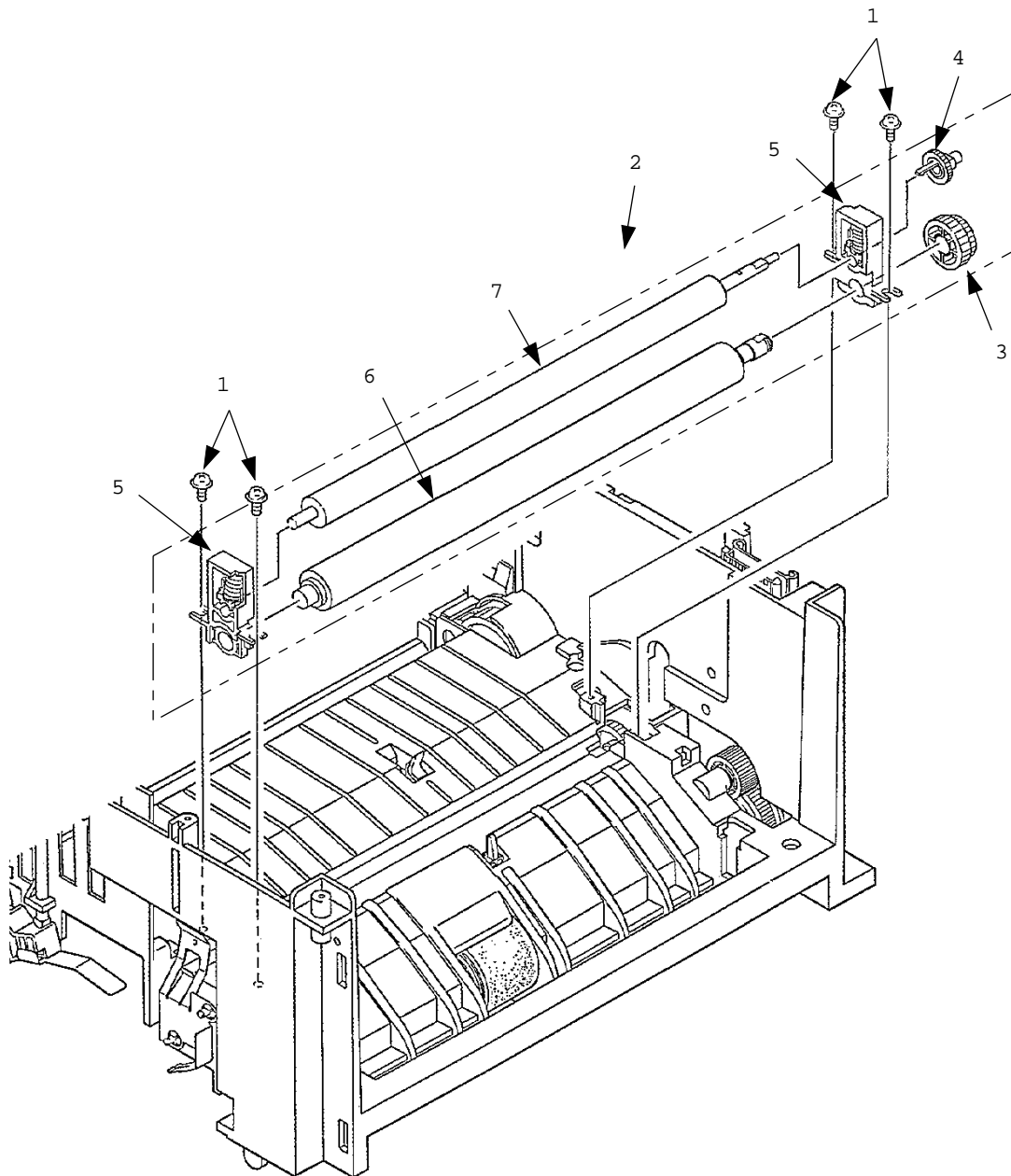
- (1) Turn the AC power switch off. Unplug the AC power cord from the outlet.
- (2) Remove the rear cover (see 3.3.1).
- (3) Remove the contact Assembly (see 3.3.2).
- (4) Remove the side cover (R) (see 3.3.5).
- (5) Remove the side plate (R) (see 3.3.6 (1) to (6)).
- (6) Remove the stacker cover Assembly (see 3.3.7).
- (7) Remove the front feeder roller Assembly (see 3.3.12, (1) to (3)).
At this time, it is not required to remove the manual feed hopper Assembly.
- (8) Remove the earth plate (HP).
- (9) Lift gear (TR) 1 to unlock it. Remove gear (TR) 1 and transfer roller 2. (At this time, two bearings (TR) 3 and two transfer springs 4 are also removed.)
Do not lose bearings or springs.
- (10) Remove connector cover 5 in direction of arrow and then remove four connectors 6 and 7 .
- (11) Remove the DC Fan motor.
- (12) Remove eight screws = and then remove main chassis unit A.



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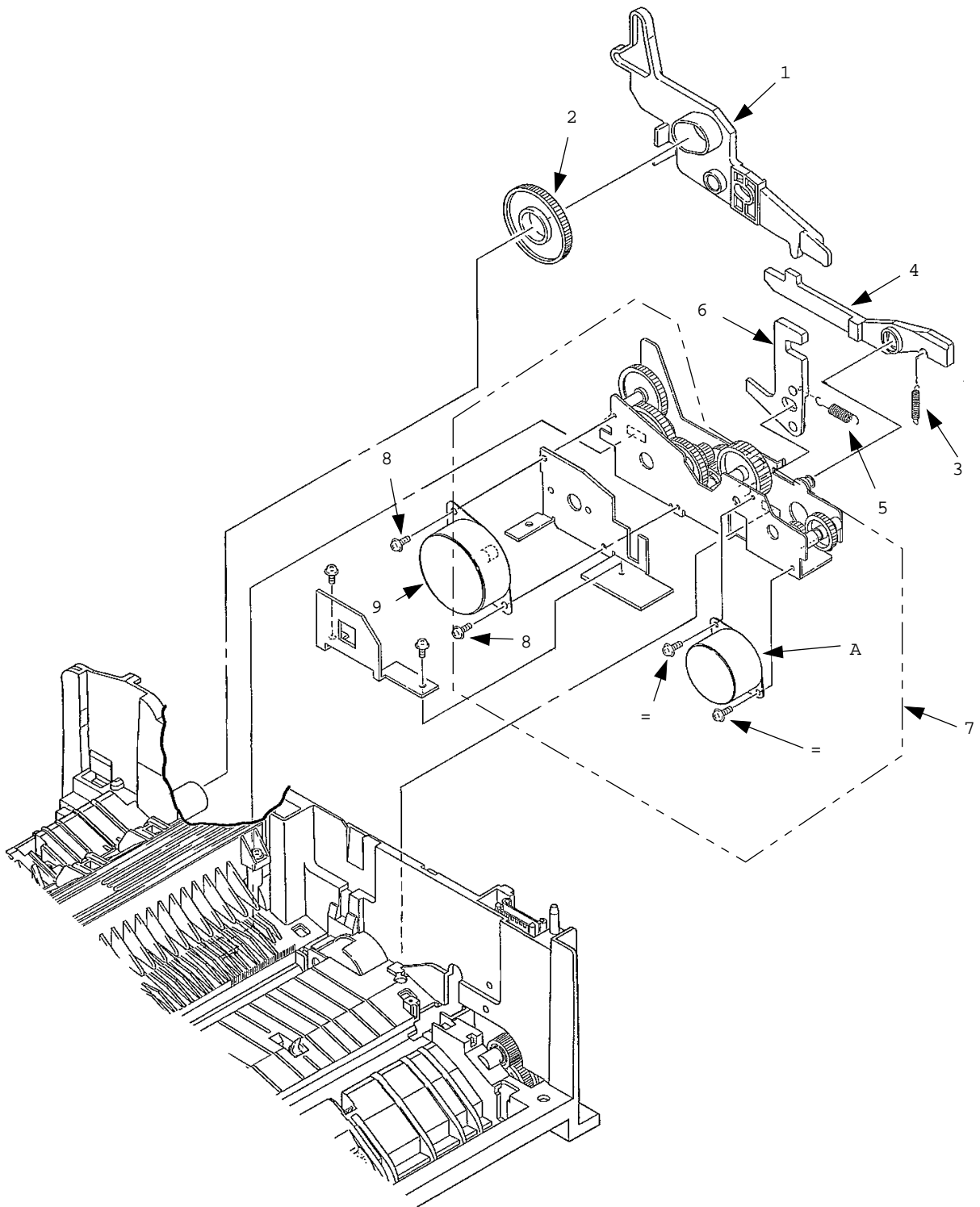
3.3.18 Registration roller

- (1) Turn the AC power switch off. Unplug the AC power cord from the outlet.
- (2) Remove the front feeder roller Assembly (see 3.3.12. (1) to (3)).
- (3) Remove four screws 1. Lift and remove the registration roller Assembly 2, left side first then right side.
- (4) Release the latch and remove registration roller gear 3 and pressure roller gear 4.
- (5) Remove left and right side registration roller bearing Assemblies 5 and then remove resist roller 6 and pressure roller 7.



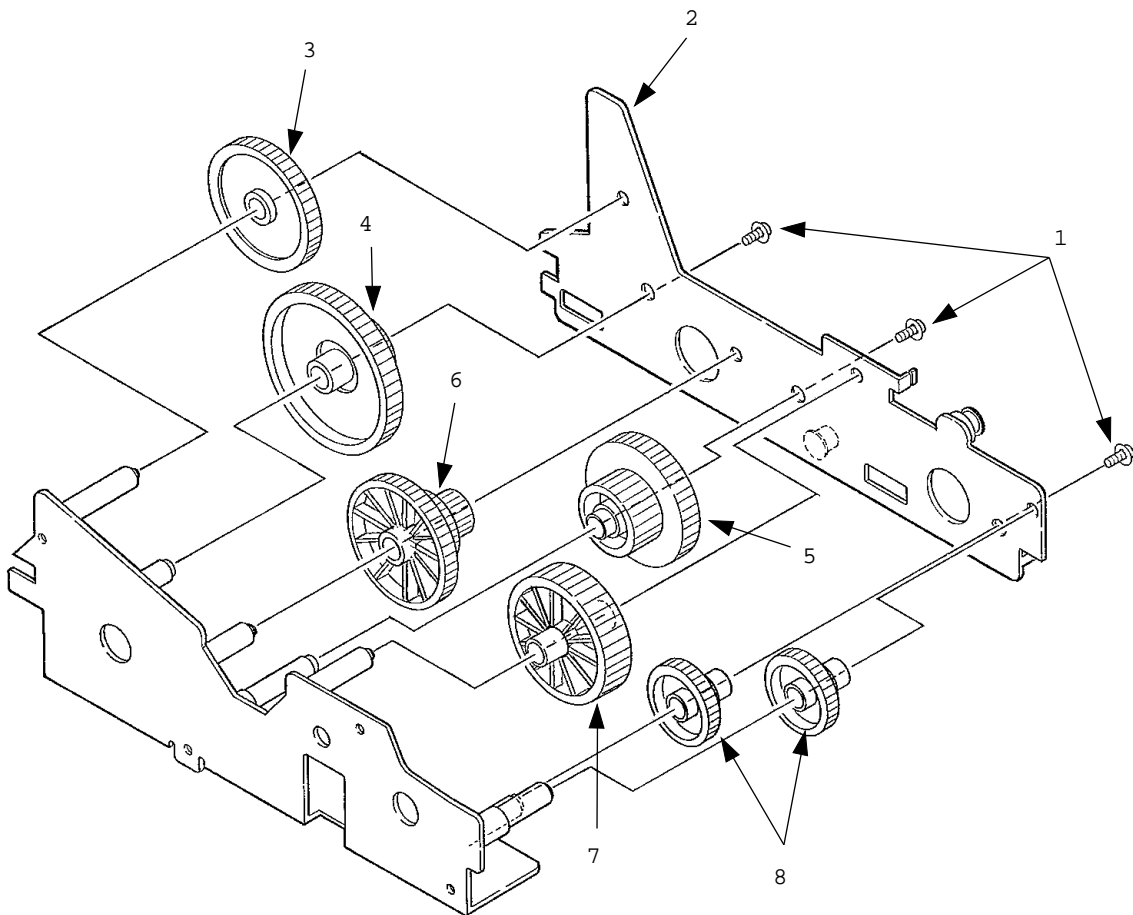
3.3.19 Drum motor

- (1) Turn the AC power switch off. Unplug the AC power cord from the outlet.
- (2) Remove the main chassis unit (see 3.3.17).
- (3) Remove the registration roller Assembly (see 3.3.18 (1) to (3)).
- (4) Remove fuser Assembly.
- (5) Release the latch of fuser pressure roller release lever 1 and pull out it toward the right. (At this time, idle gear H 2 is also removed.)
- (6) Remove spring 3 and then remove pressure release lever 4. Be careful, do not lose or damage spring.
- (7) Remove EP lock spring 5 and then remove ED lock lever 6.
- (8) Release two latches and remove motor Assembly 7.
- (9) Remove two screws 8 and then remove drum motor 9 and heat sink.
- (10) Remove two screws = and then remove registration motor A.



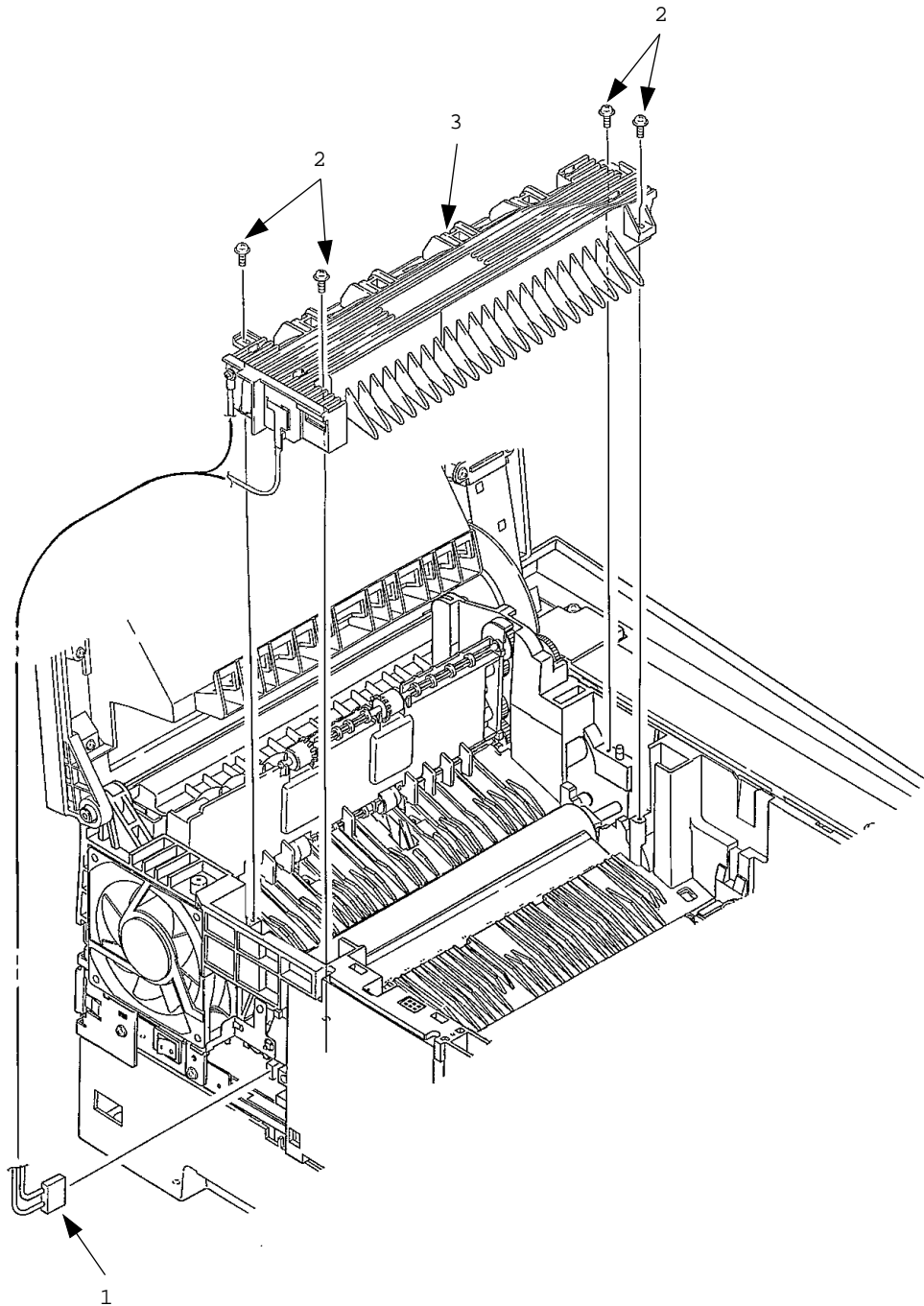
3.3.20 Idle gear

- (1) Turn the AC power switch off. Unplug the AC power cord from the outlet.
- (2) Remove the main chassis unit (see 3.3.17).
- (3) Remove the motor Assembly (see 3.3.19 (1) to (8)).
- (4) Remove three screws 1 and then remove motor bracket B 2.
- (5) Remove idler gear E 3, idler gear D 4, idler gear B 5, idler gear C 6, idler gear A 7, and two resist idler gears 8.



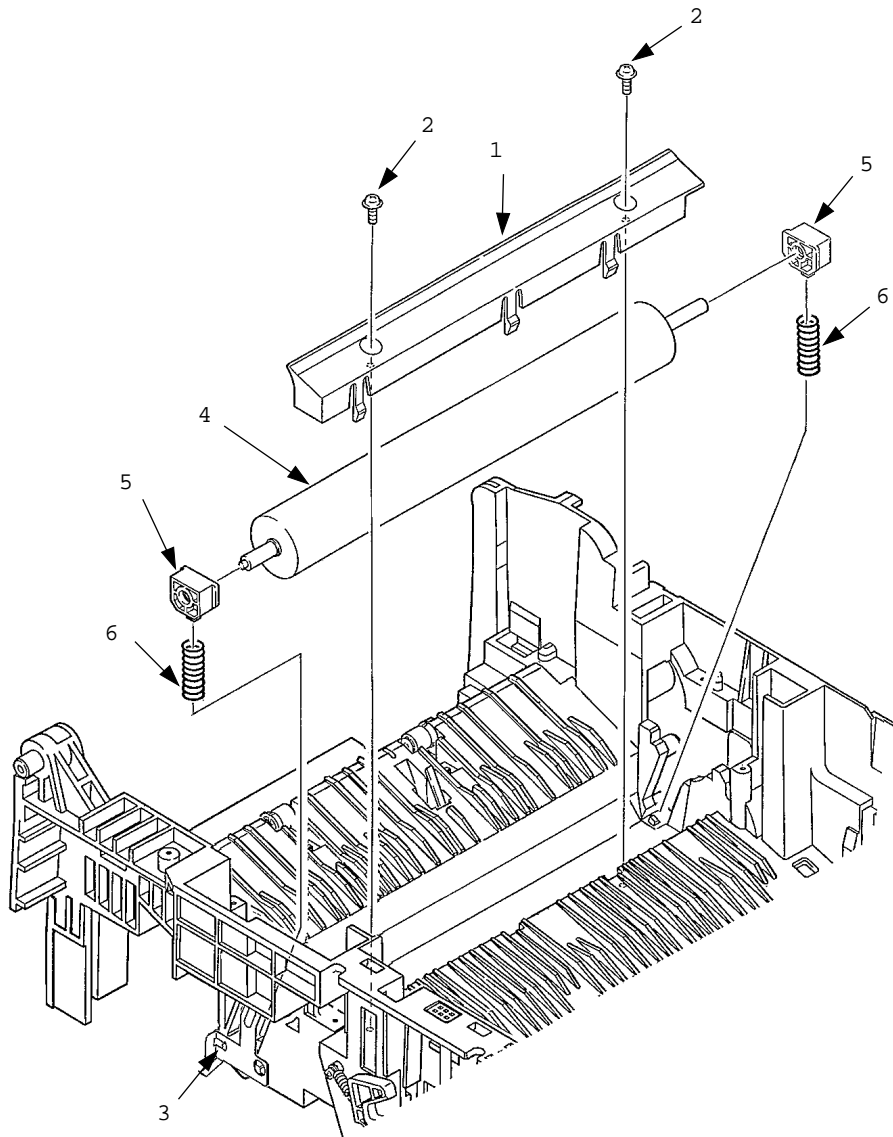
3.3.21 Fusing Assembly

- (1) Turn the AC power switch off. Unplug the AC power cord from the outlet.
- (2) Remove the side cover (L) Assembly (see 3.3.1 (1) to (3)).
- (3) Unplug connector 1.
- (4) Remove four screws 2 and then remove fusing Assembly 3.



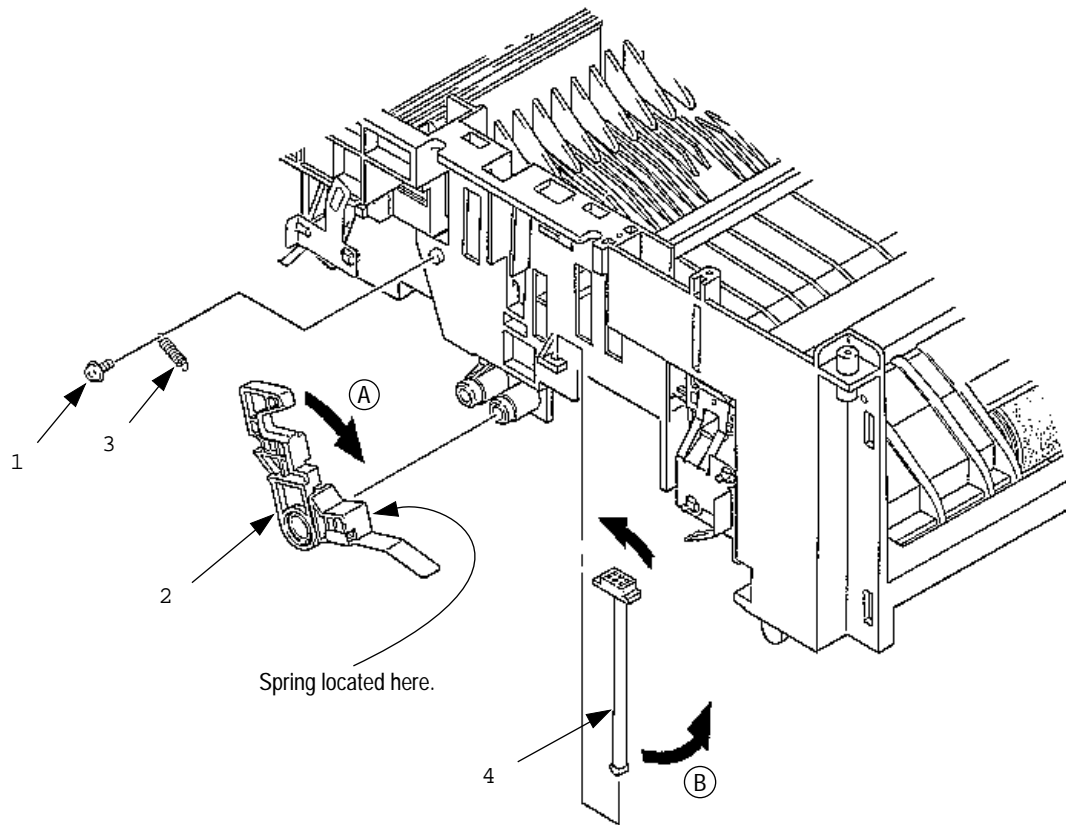
3.3.22 Fuser pressure roller

- (1) Turn the AC power switch off. Unplug the AC power cord from the outlet.
- (2) Remove the main chassis unit (see 3.3.17).
- (3) Remove the fusing Assembly (see 3.3.21).
- (4) Remove the fuser pressure roller release lever (see 3.3.19 (5)).
- (5) Remove two screws 2 and release three locks on the fusing guide. Remove the fusing guide 1 by pushing it upward from the lower side.
- (6) Release the engagement with earth plate L (BK) 3. Lift and remove fuser pressure roller 4. (At this time, two fuser pressure roller bearings 5 and two bias springs 6 are also removed.)



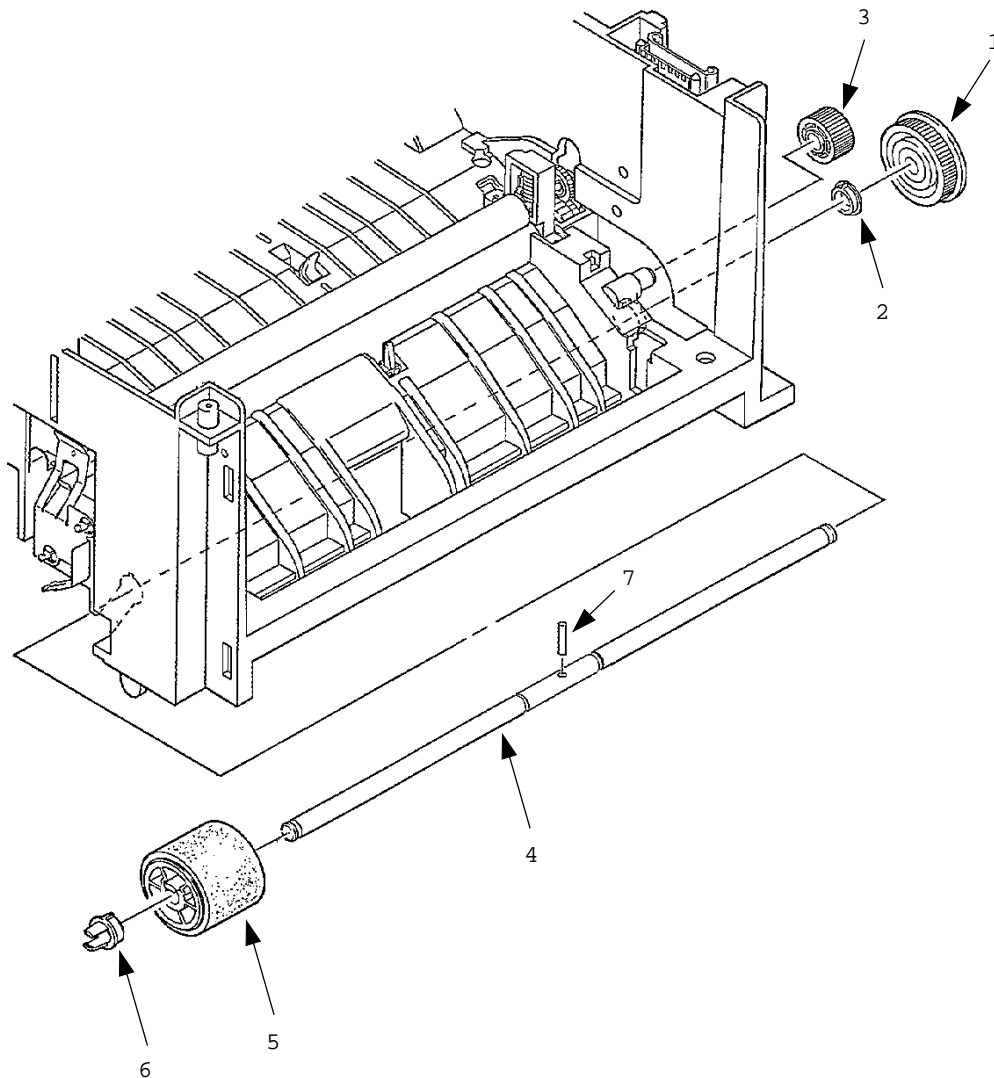
3.3.23 EP lock shaft

- (1) Turn the AC power switch off. Unplug the AC power cord from the outlet.
- (2) Remove the main chassis unit (see 3.3.17).
- (3) Remove screw 1. Turn EP lock level (L) Assembly 2 in the direction of arrow A .
- (4) Remove spring 3.
- (5) Drop EP lock shaft 4 down and turn in the direction of arrows B and remove it.



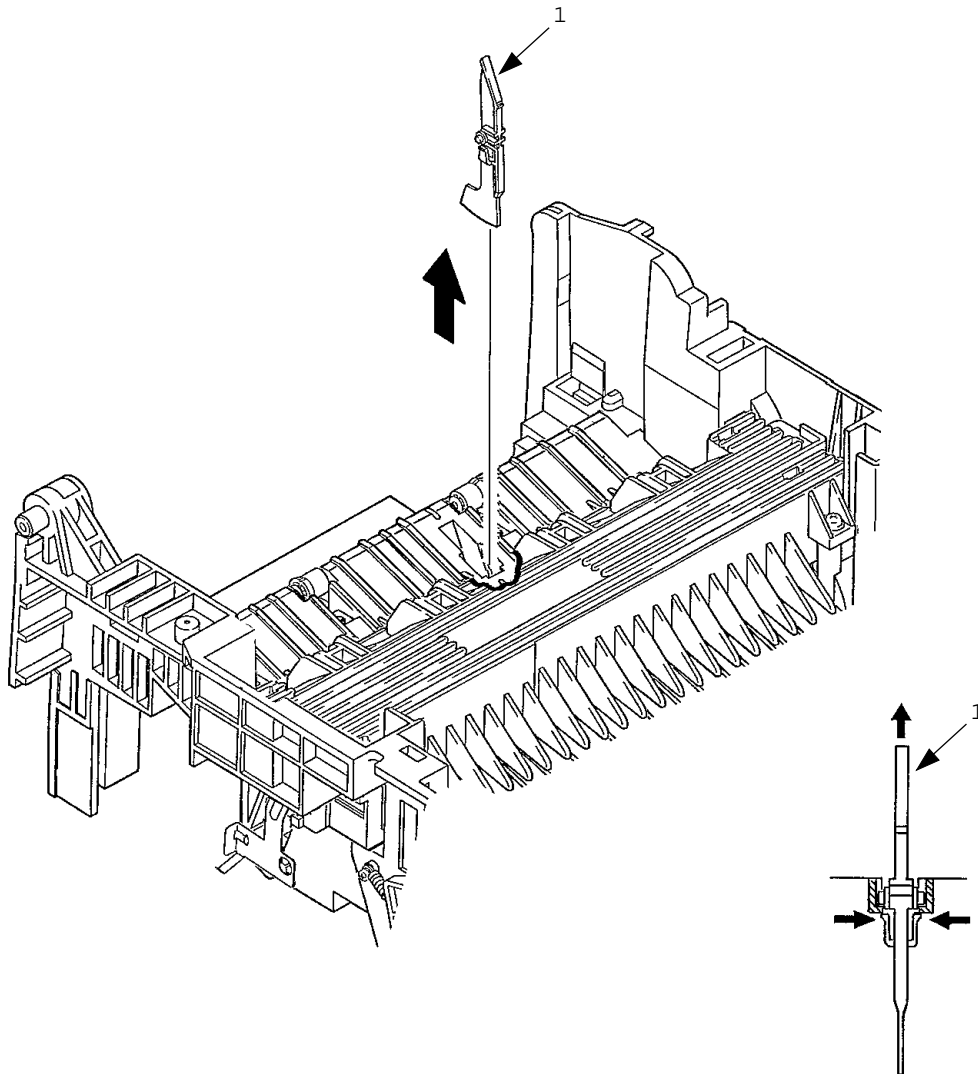
3.3.24 Hopping roller Assembly

- (1) Turn the AC power switch off. Unplug the AC power cord from the outlet.
- (2) Remove the main chassis unit (see 3.3.17).
- (3) Release the latch. Remove hopping roller gear 1 and bearing P 2. Then, remove idle gear HF 3.
- (4) Remove the left side of hopping roller shaft 4 from the groove. Pull out hopping roller shaft 4 and hopping roller Assembly 5 toward the left.
- (5) Release the latch and remove bearing L 6.
- (6) Release the latch and remove hopping roller Assembly 5. (At this time, knock pin 7 is also removed. Be careful not to lose the knock pin.)



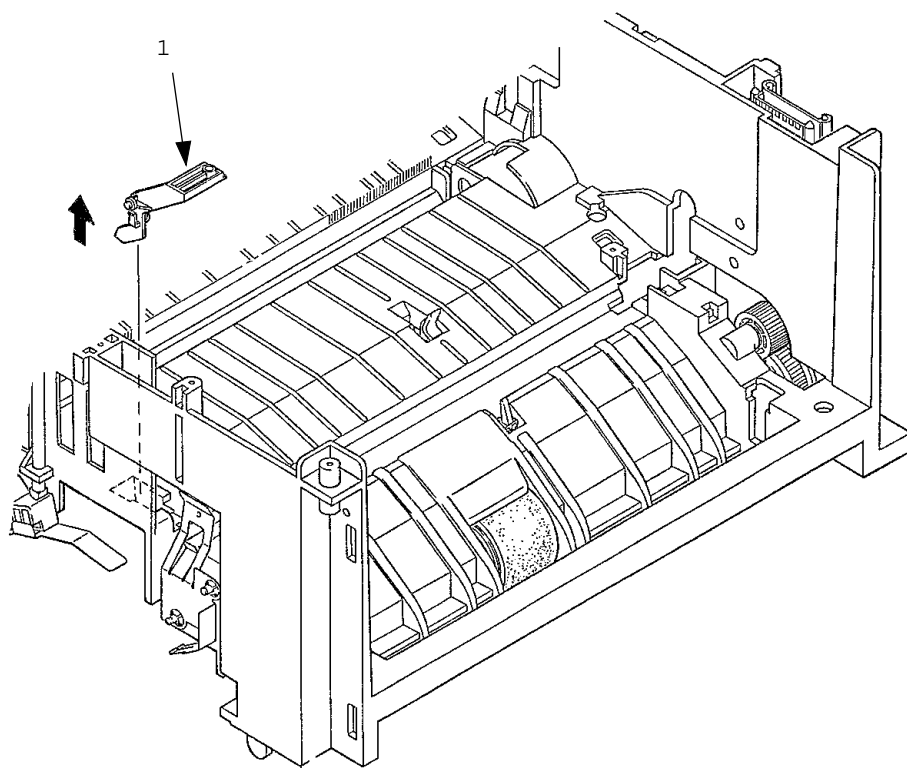
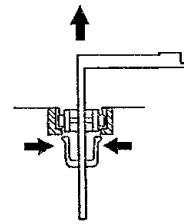
3.3.25 Outlet sensor lever

- (1) Turn the AC power switch off. Unplug the AC power cord from the outlet.
- (2) Remove the main chassis unit (see 3.3.17).
- (3) Press the clamp part of outlet sensor lever 1. Remove the outlet sensor lever 1 by pushing it upward from the lower side.



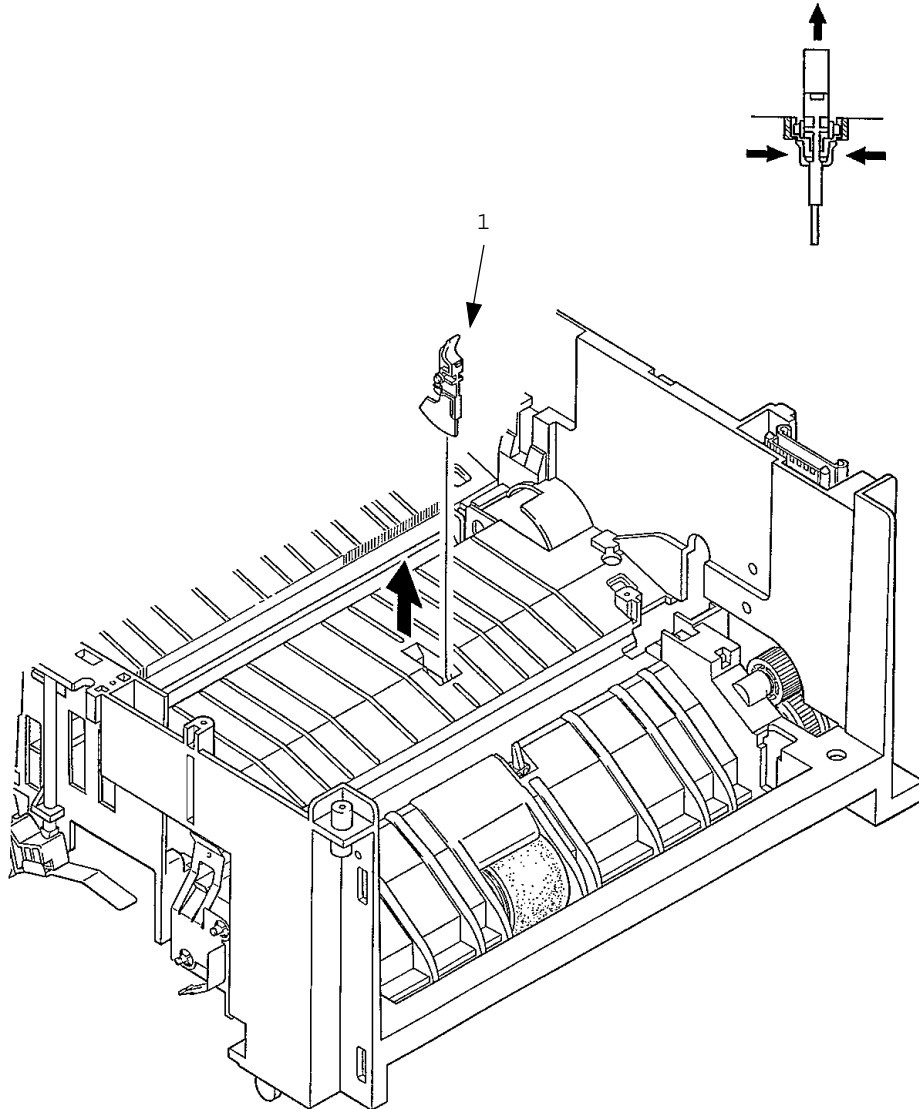
3.3.26 Toner sensor lever

- (1) Turn the AC power switch off. Unplug the AC power cord from the outlet.
- (2) Remove the main chassis unit (see 3.3.17).
- (3) Squeeze the clamp part of toner sensor lever 1 and remove the toner sensor lever 1 by pushing it upward from the lower side.



3.2.27 Paper sensor lever

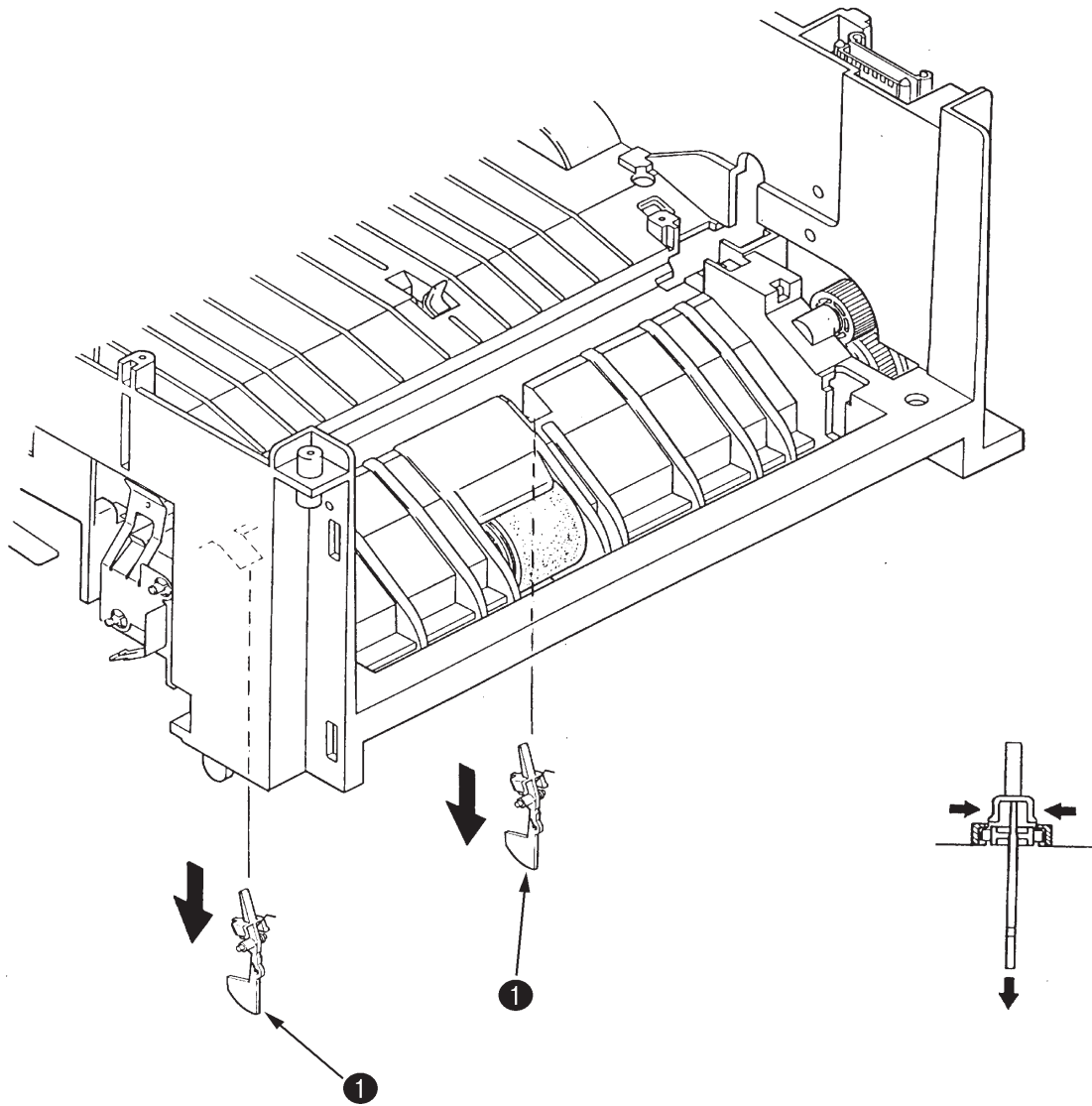
- (1) Turn the AC power switch off. Unplug the AC power cord from the outlet.
- (2) Remove the main chassis unit (see 3.3.17).
- (3) Squeeze the clamp part of the paper sensor lever 1. Remove the paper sensor lever 1 by pushing it upward from the lower side.



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3.3.28 Inlet sensor lever

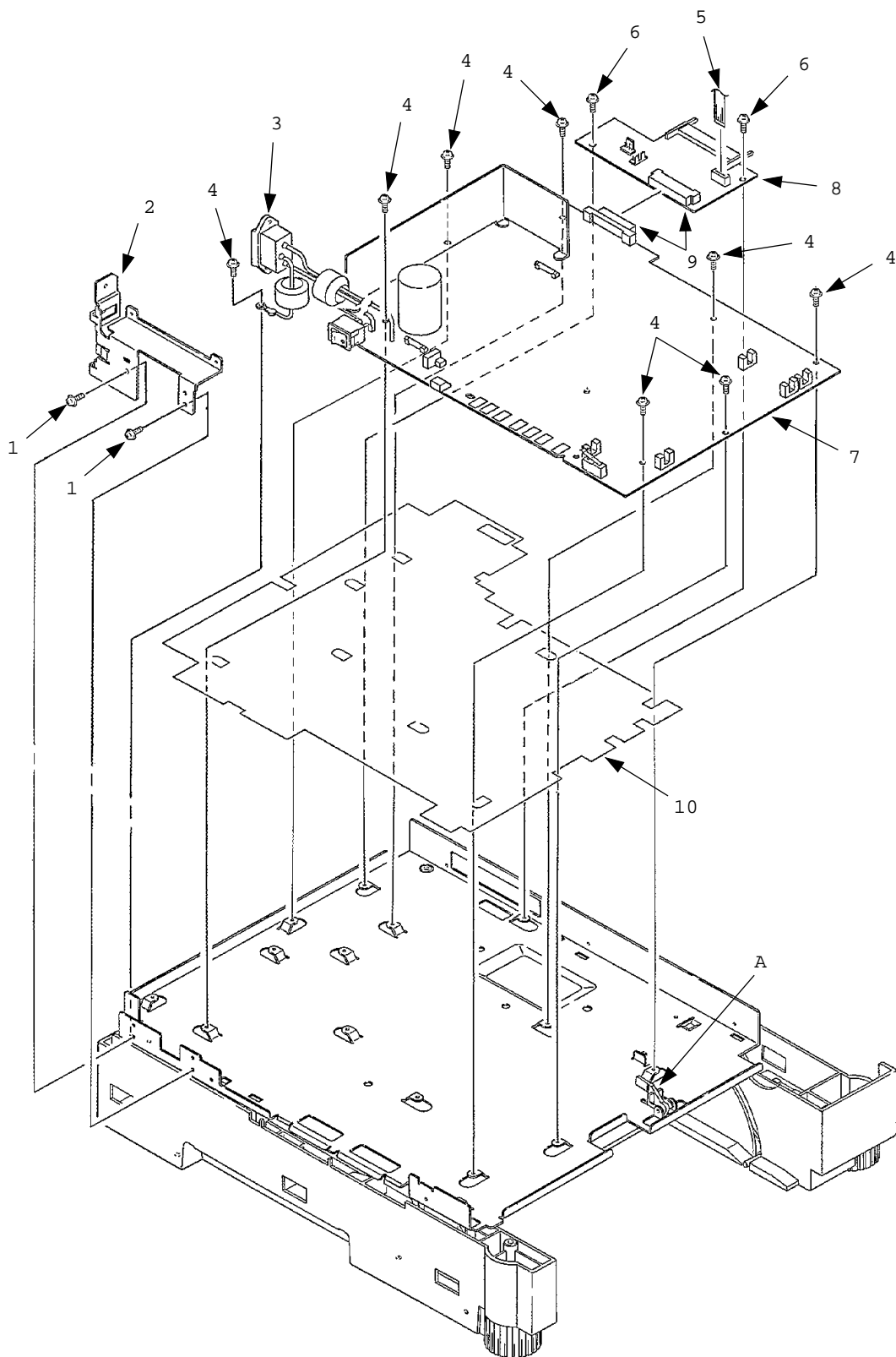
- (1) Turn the AC power switch off. Unplug the AC power cord from the outlet.
- (2) Remove the main chassis unit (see 3.3.17).
- (3) Squeeze the clamp part of two inlet sensor levers 1. Remove the inlet sensor levers 1 by pushing them downward.



3.3.29 Power Supply Board / Insulator

- (1) Turn the AC power switch off. Unplug the AC power cord from the outlet.
- (2) Remove the main chassis unit (see 3.3.17).
- (3) Remove two screws 1 and then remove inlet holder 2. At this time, remove inlet 3 from inlet holder 2.
- (4) Remove eight screws 4, connector 5, and two screws 6. Remove Power Supply Board 7 together with AOLC-PCB 8.
- (5) Unplug connector 9 and remove PowerSupply Board 7.
- (6) Remove insulator 10.

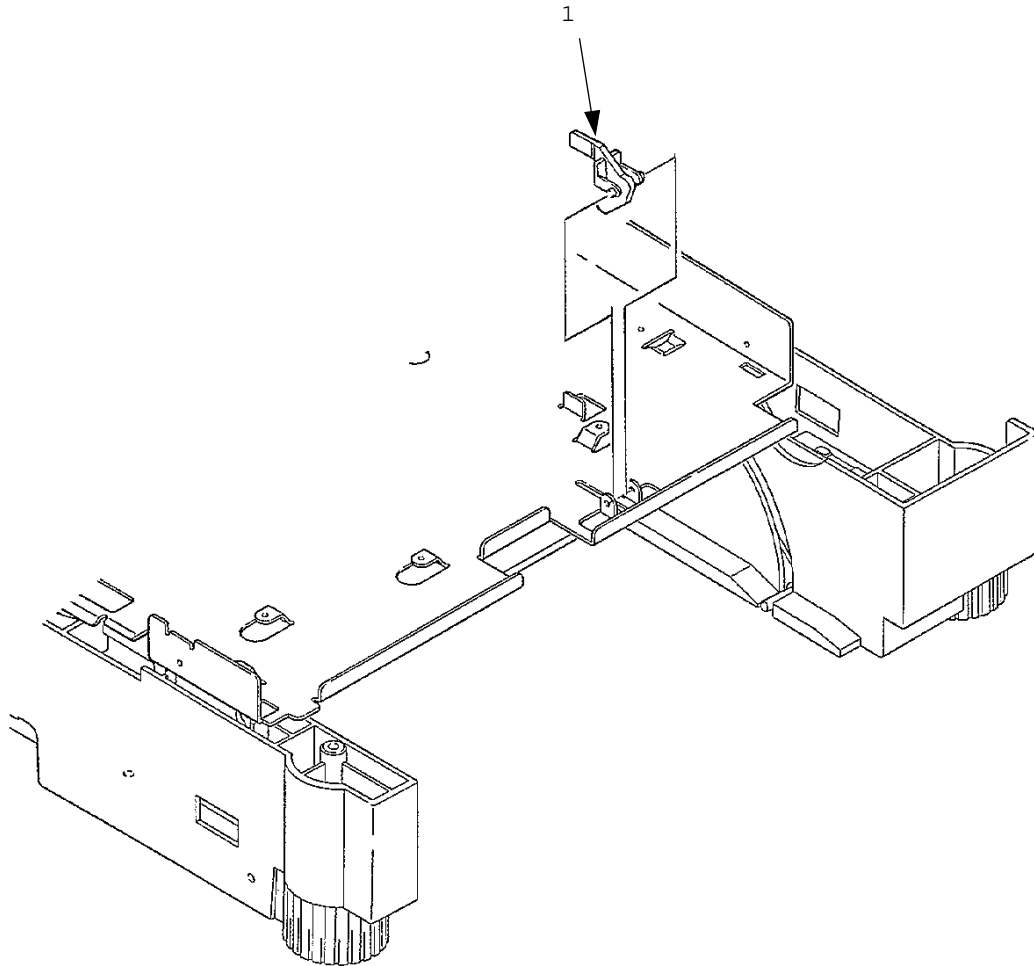
Caution: Be careful not to deform the paper end lever A.



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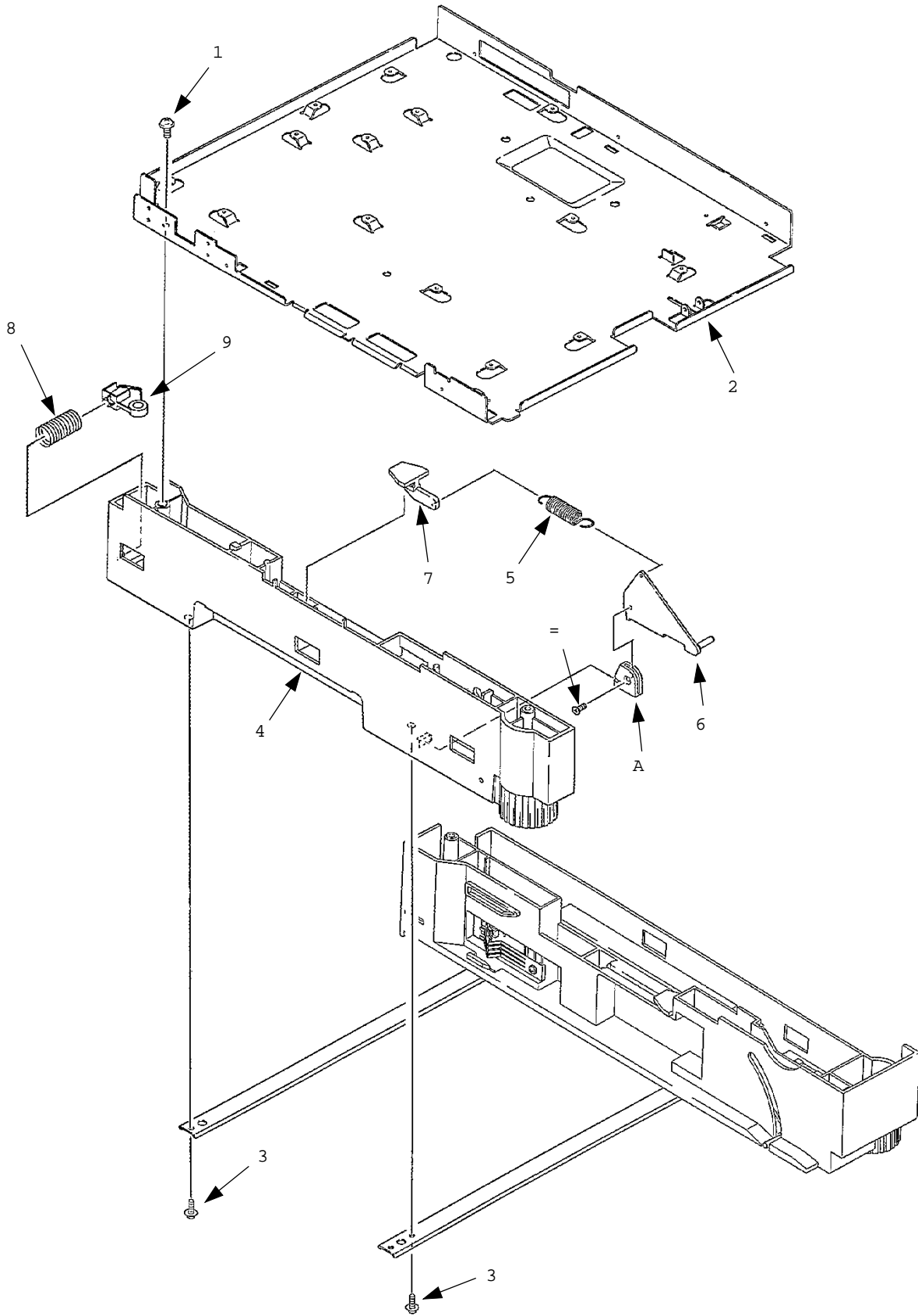
3.3.30 Paper end lever

- (1) Turn the AC power switch off. Unplug the AC power cord from the outlet.
- (2) Remove the main chassis unit (see 3.3.17).
- (3) Release the lock and remove paper end lever 1.



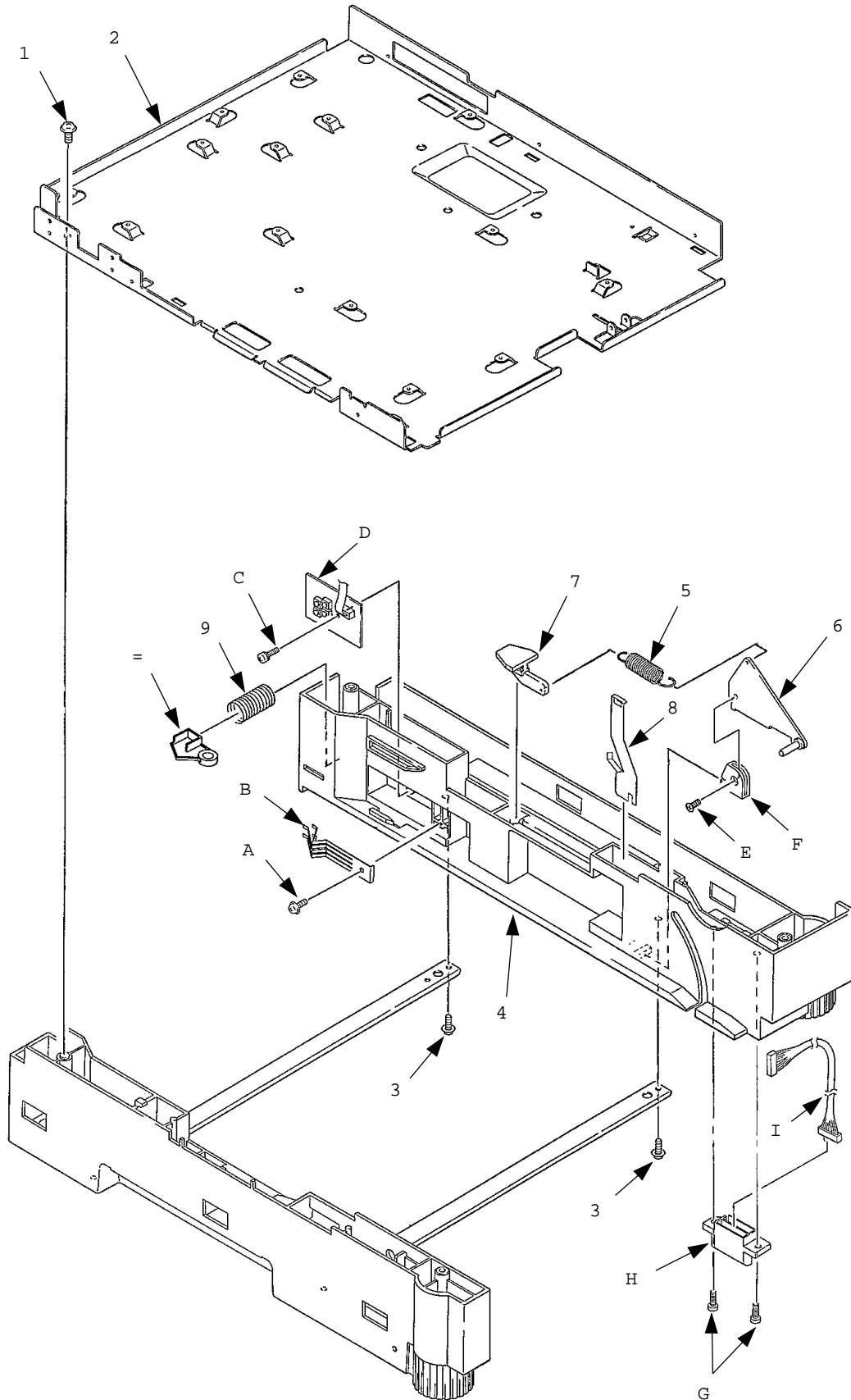
3.3.31 Guide rail (L) Assembly

- (1) Turn the AC power switch off. Unplug the AC power cord from the outlet.
- (2) Remove the main chassis unit (see 3.3.17).
- (3) Remove the insulator (see 3.3.29).
- (4) Remove screw 1 and then remove base plate 2.
- (5) Remove two screws 3 and then remove guide rail (L) Assembly 4.
- (6) Remove cassette lock spring 5 and then remove bias link 6 and pull block 7.
(Pay attention the direction of hook of cassette lock spring 5.)
- (7) Remove spring 8 and then remove cassette stopper 9.
- (8) Remove screw 0 from bias link 6 and then remove link support A.



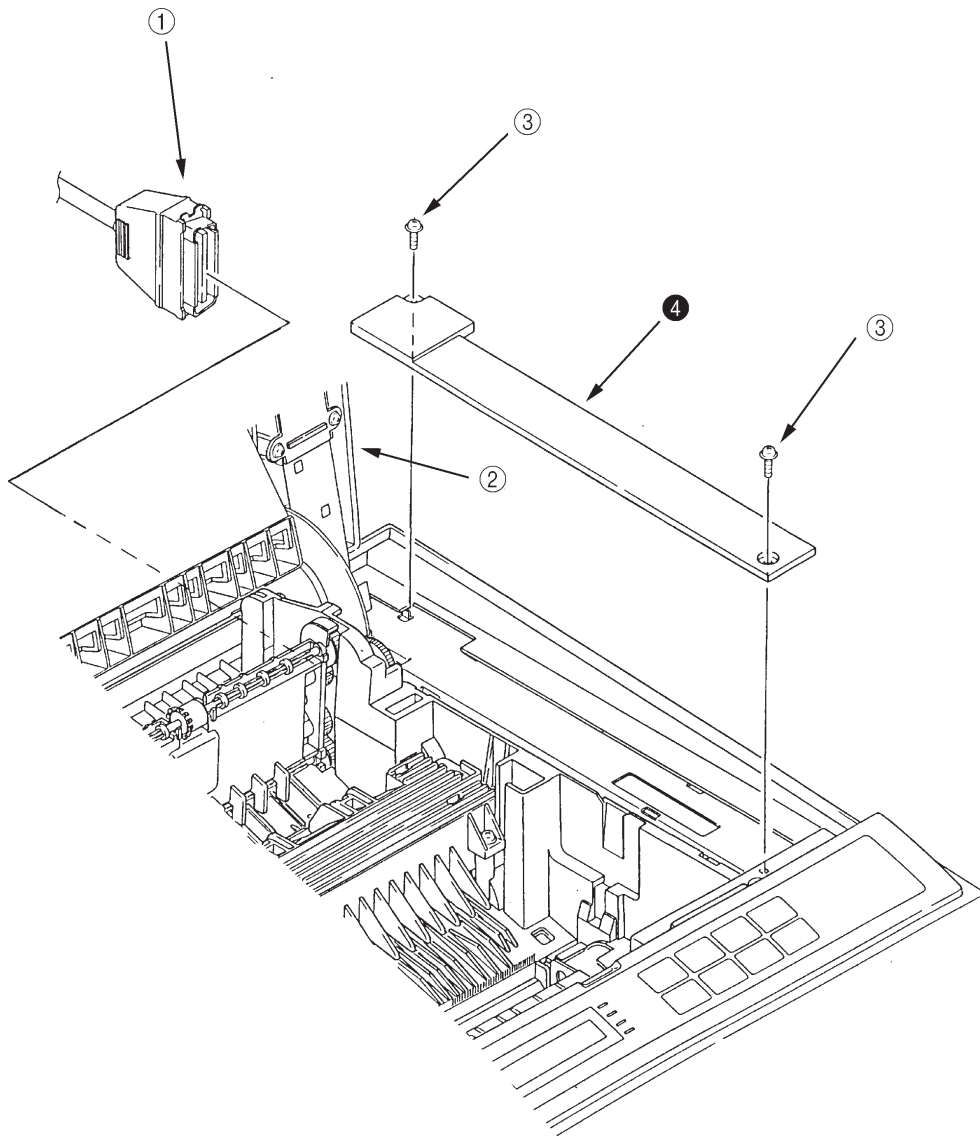
3.3.32 Guide rail (R) Assembly

- (1) Turn the AC power switch off. Unplug the AC power cord from the outlet.
- (2) Remove the main chassis unit (see 3.3.17).
- (3) Remove the insulator (see 3.3.29).
- (4) Remove screw 1 and then remove base plate 2.
- (5) Remove two screws 3 and then remove guide rail (R) Assembly 4.
- (6) Remove cassette lock spring 5 and then remove bias link 6 and pull block 7 (At this time, earth plate 8 is also removed.)
(Pay attention the direction of hook of cassette lock spring 5.)
- (7) Remove spring 9 and then remove cassette stopper =.
- (8) Remove screw A and then remove detector spring B.
- (9) Remove screw C and then remove AOLS-PCB D.
- (10) Remove screws E from bias link 6 and then remove link support F.
- (11) Remove two screws G and then remove square cord from square-shaped connector H.
- (12) Using a dedicated tool, remove connector cord I from square-shaped connector H.



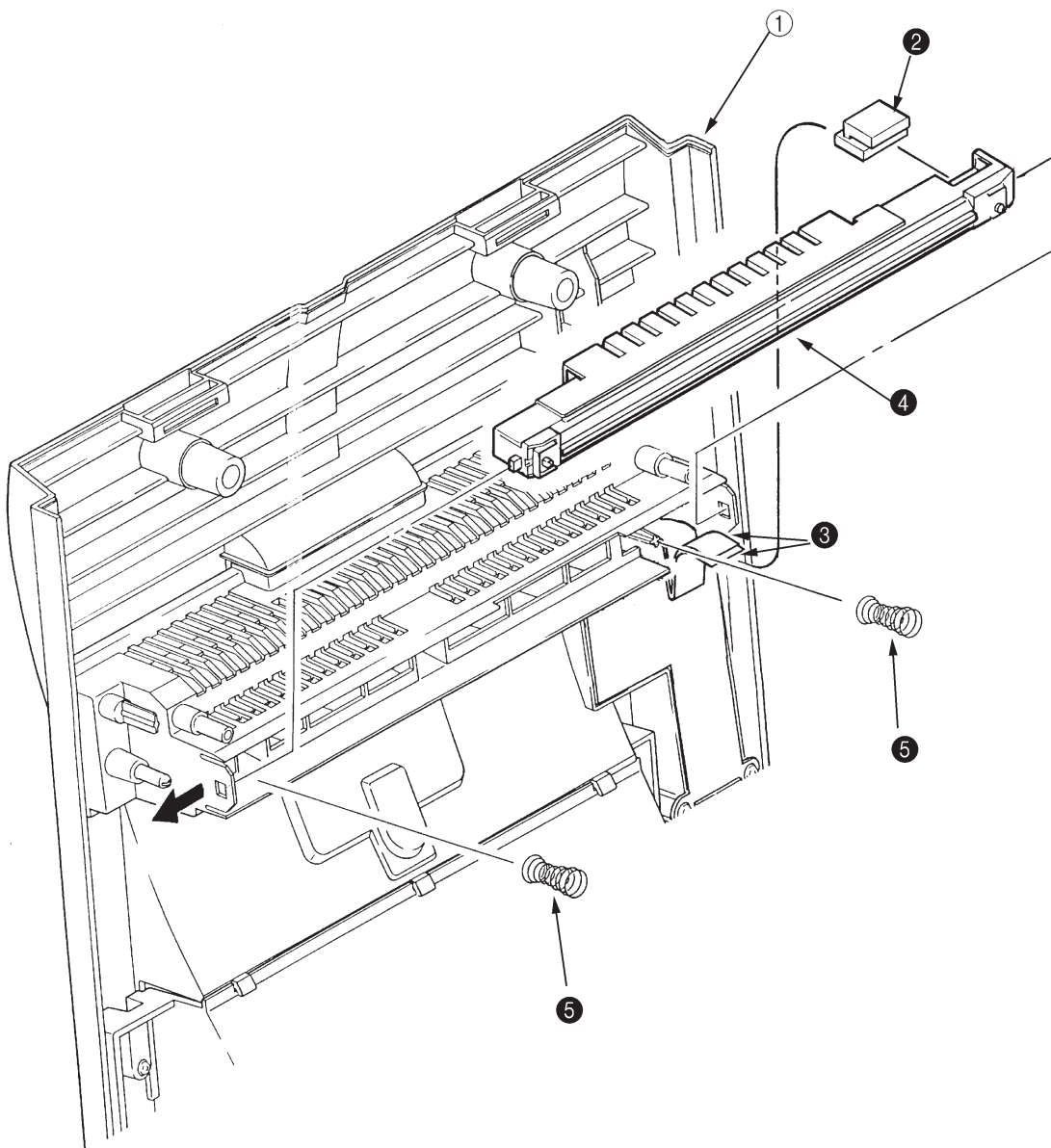
3.3.33 Cover Frame

- (1) Turn the AC power switch off. Unplug the AC power cord from the outlet.
- (2) Remove interface cable 1.
- (3) Open stacker cover 2. Remove two screws 3 and then remove Cover Frame 4.



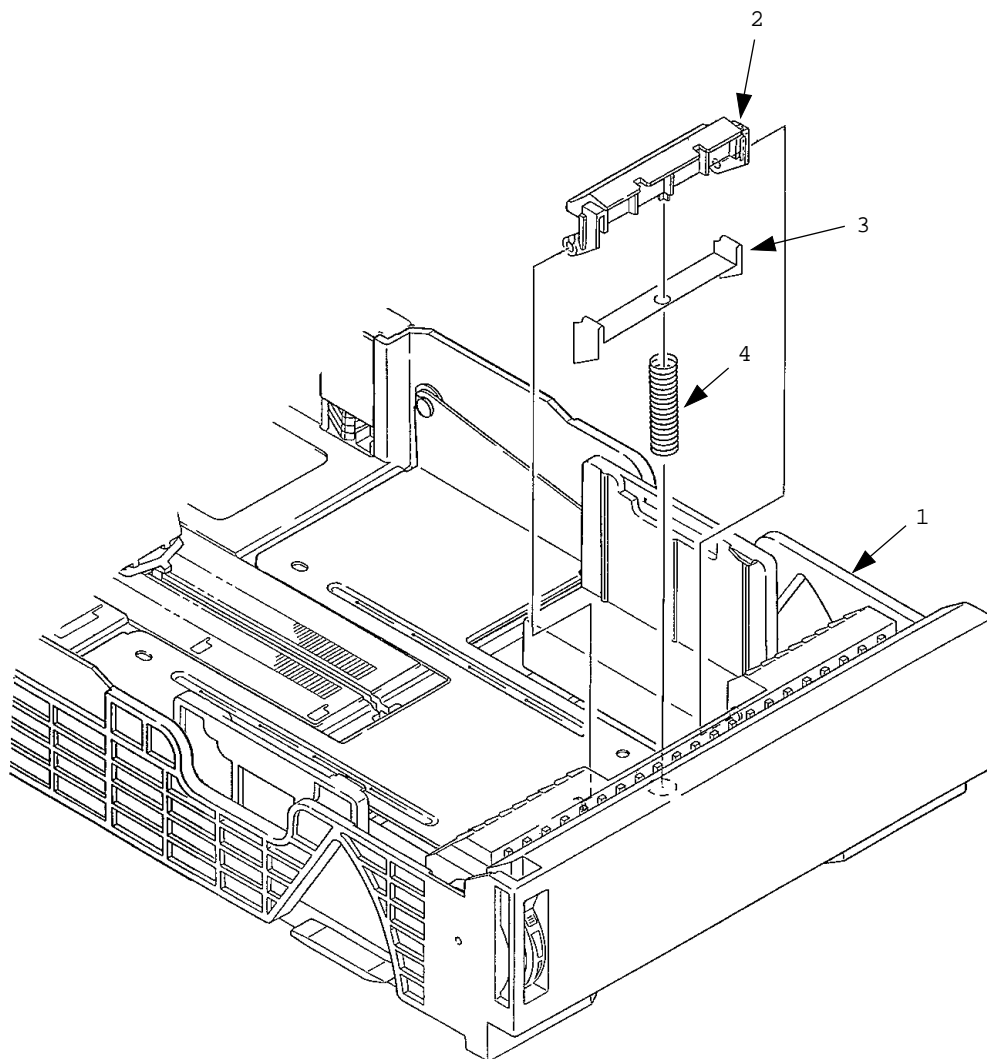
3.3.34 LED head

- (1) Turn the AC power switch off. Unplug the AC power cord from the outlet.
- (2) Open stacker cover 1.
- (3) Remove PC connectors 2 and two LED cables 3 from LED head 4.
- (4) Push the hook on the left side of stacker cover 1 in the direction of arrow and remove LED head 4. (Take care not to lose head springs 5.)
- (5) Pull out the head spring 5 from the post.



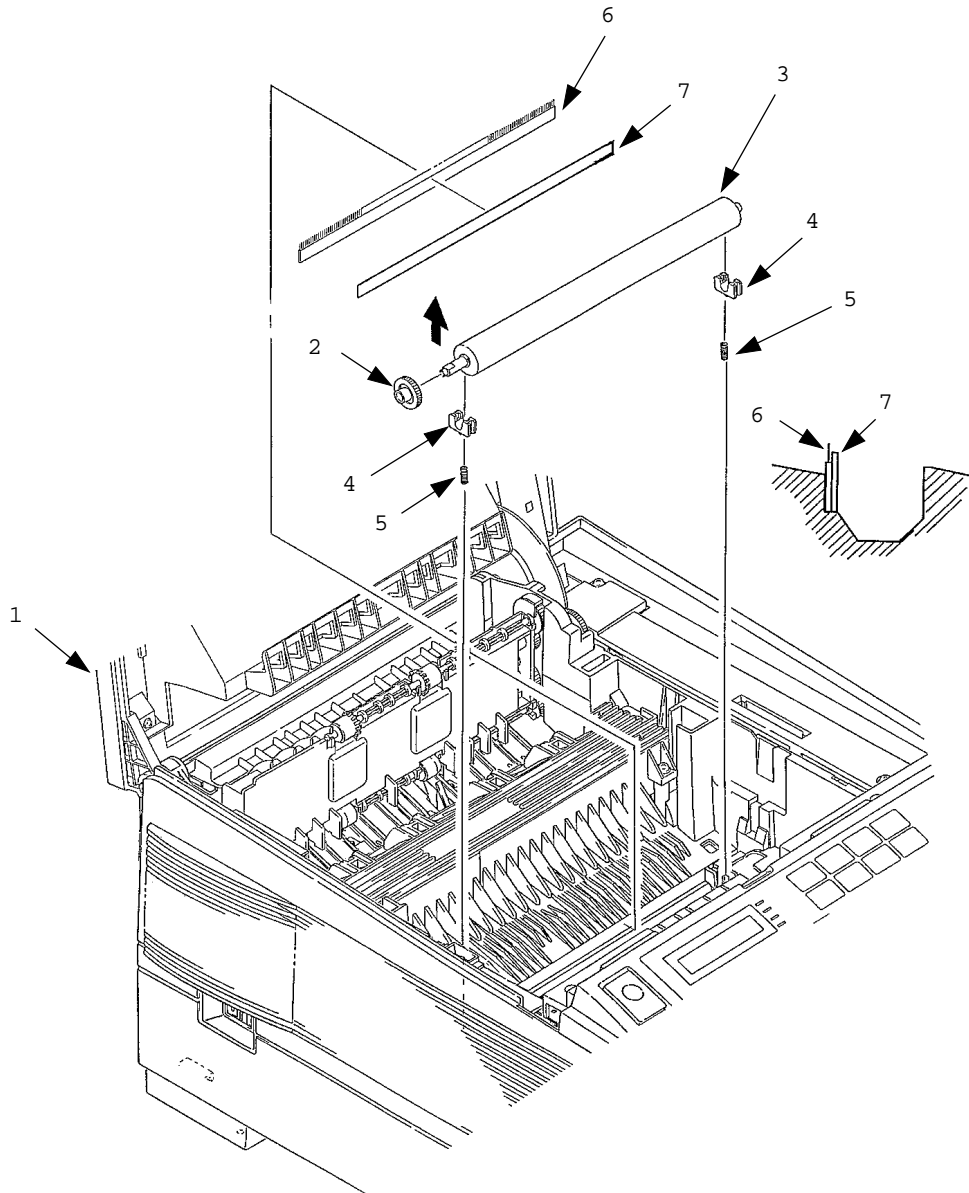
3.3.35 Separator Assembly

- (1) Turn the AC power switch off. Unplug the AC power cord from the outlet.
- (2) Pull out the paper cassette Assembly 1 from the printer.
- (3) Release two locks and remove separator Assembly 2. (At this time, leaf spring 3 and coil spring 4 are also removed. Be careful not to lose these springs.)



3.3.36 Transfer roller

- (1) Turn the AC power switch off. Unplug the AC power cord from the outlet.
- (2) Open stacker cover 1.
- (3) Lift the left side of the gear TR 2 and release the lock. Remove gear TR 2 and transfer roller 3. (At this time, two bearings (TR) 4 and two transfer roller springs 5 are also removed.)
- (4) Remove diselectrification bar 6 and diselectrification film 7 from the chassis unit.



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4. ADJUSTMENT

This chapter explains the adjustment necessary when replacing a part. Adjustment is made by changing a parameter value set in EEPROM on the controller PCB. A parameter is set with the key operation on the operator panel. This printer has three kinds of maintenance modes. It is required to select one of the maintenance modes necessary when replacing a part.

4.1 Maintenance Modes And Functions

- **User maintenance mode**

To enter the user maintenance mode, turn on the POWER switch while pressing the MENU key.

Function

There are seven functions as follows.

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

- **System maintenance mode**

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

To enter the system maintenance mode, turn on the POWER switch while pressing the RECOVER key.

Function

There are 8 functions as follows.

- Page count display
- Page count printing enable/disable
- Rolling ASCII continuous printing
- EEPROM reset
- HSP ERROR recovery
- HSP ERROR count display
- HSP ERROR count reset
- SIDM enable/disable

- **Engine maintenance mode**

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

To enter the engine maintenance mode, turn on the POWER switch while pressing the FORM FEED key and ENTER key.

Function

There are 15 functions as follows.

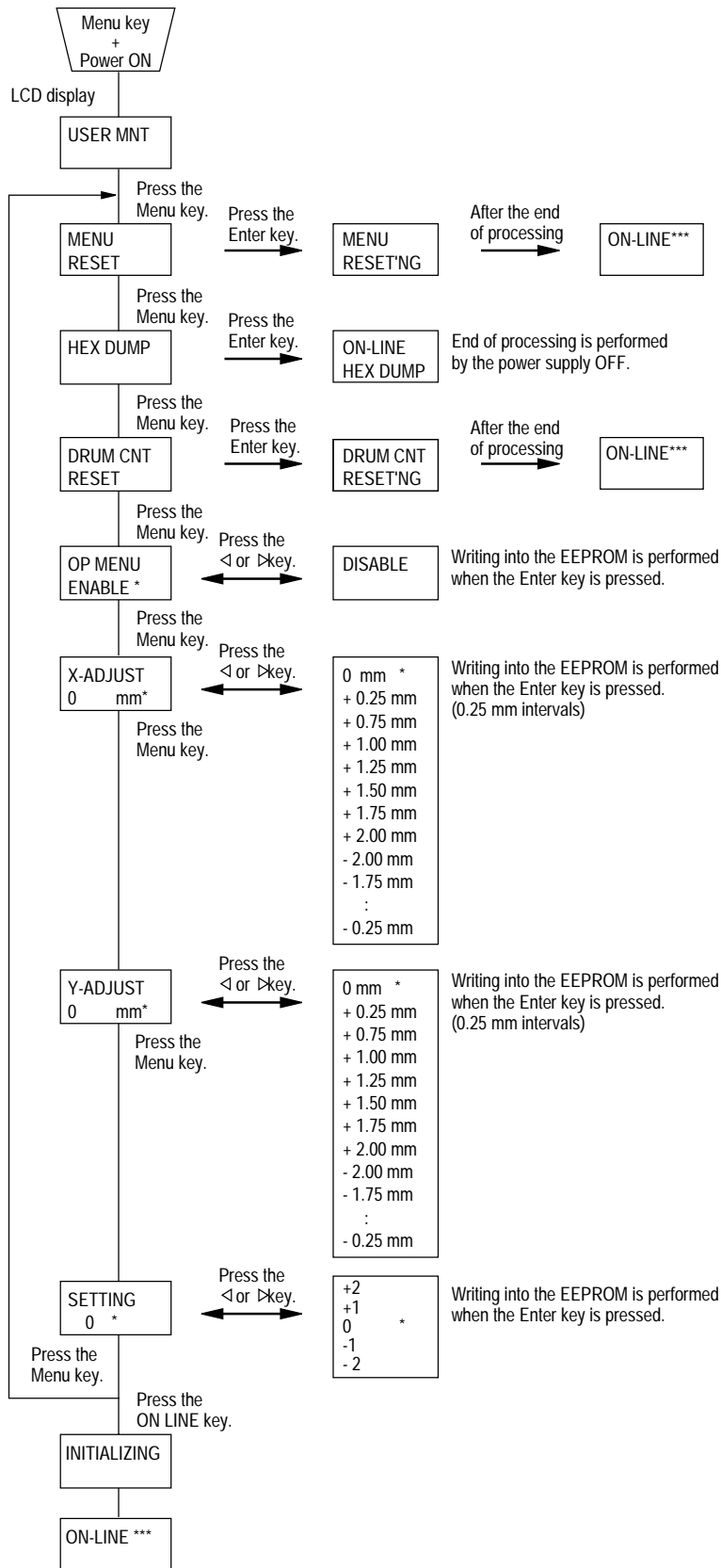
- Head drive time setting
- Setting of Head drive timing compensation while OST is on.
- Compensated head type setting
- Printing start position setting
- Drum counter total display
- Drum count display
- Setting of standard paper feed length
- Setting of front feeder paper feed length
- Setting of second tray paper feed length
- Selection of second tray feeder download table
- Setting of envelope feeder paper feed length
- Selection of envelope feeder download table
- Fuser count indication
- Fuser count reset
- Engine reset

4.1.1 User maintenance mode

- To enter the user maintenance mode, turn the power supply ON while pressing the Menu key.
- This mode uses the menu for function selection.
- The user maintenance mode provides the following functions:
 - (1) Menu reset
 - All settings for Menu level-1 are reset to the factory default values.
The menus for all executable emulations including options are reset to the factory default values.
 - The operation mode starts automatically upon completion of resetting.
 - (2) Hex dump
 - The data received from the host 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 selecting the OFF LINE mode by pressing the ON-LINE key. (Automatic activation of printing even when the received data is less than one page by selecting the Auto Eject function on the menu.)
 - Exit from this mode by turning the power OFF.
 - (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) Operator panel menu disable
 - This function is for enabling and disabling the operator panel menu functions (Menu 1, Menu 2, Tray Select, Copies and Paper Size).
 - (5) X ADJUST
 - This function is used to adjust the printing start position within the range of ± 2 mm in 0.25 mm steps in the X direction.
 - (6) Y ADJUST
 - This function is used to adjust the printing start position within the range of ± 2 mm in 0.25 mm steps in the Y direction.
 - (7) SETTING
 - This function is used to improve print quality.

-2	}	Rough/thick paper, Low temperature/humidity and/or blockly faded print appeared.
-1	}	
0		Nomal media/environmental conditions.
+1	}	Rough papers, high temperature/humidity and/or snowy print of high density pattern.
+2	}	

User maintenance mode menu system



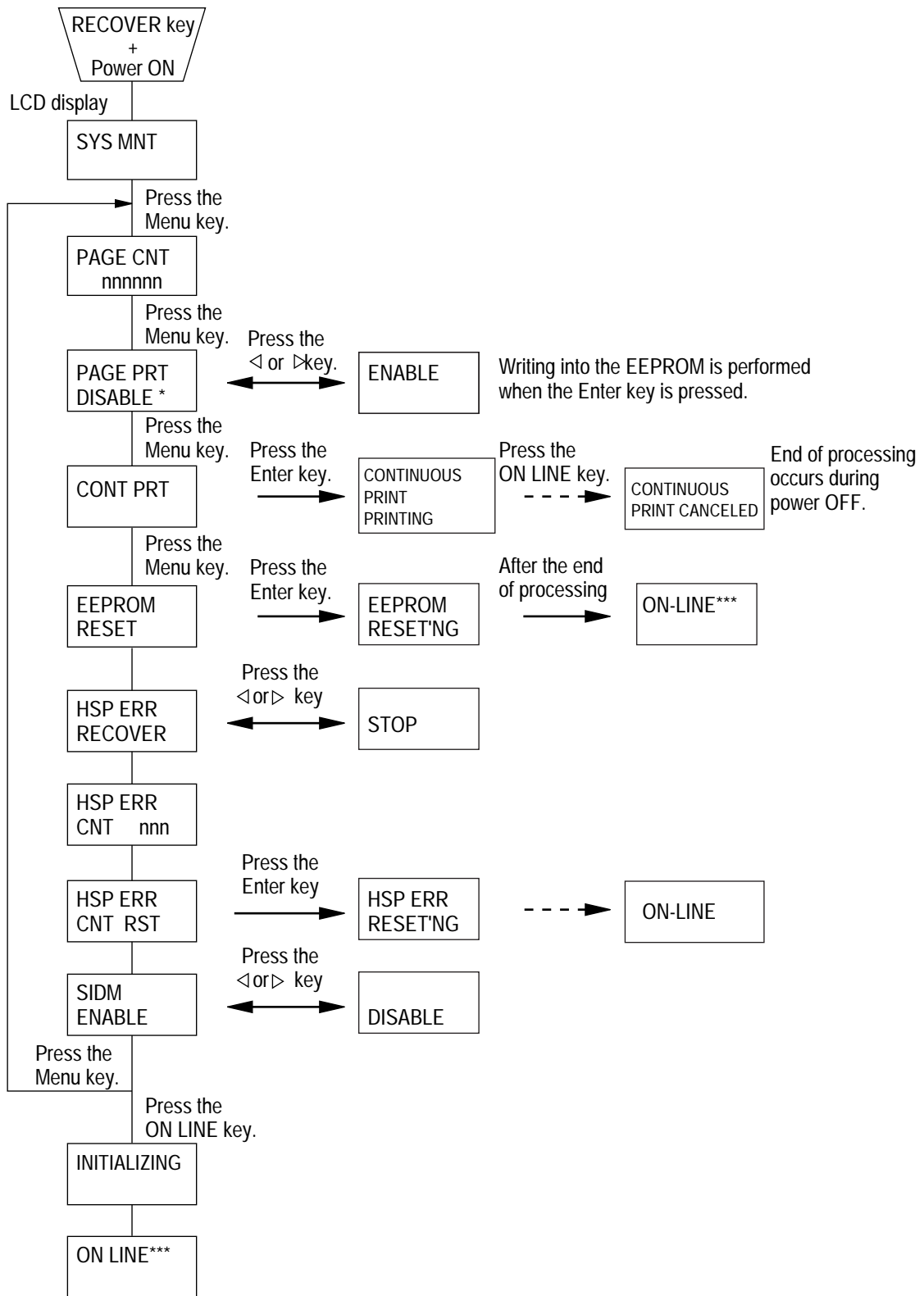
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4.1.2 System maintenance mode

- The system maintenance mode is set when the power is turned ON while pressing the Recover key.
- This mode adopts the menu for function selection.
- The system maintenance mode is provided with the listed functions.

- (1) Page count display
 - The total number of pages counted at the engine is displayed on the LCD.
- (2) Page count printing enable/disable
 - This function selects whether to include (enable) or exclude (disable) the total number of printed pages counted at the engine 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) 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.
- (5) HSP ERROR recovery
 - Select HSP ERROR recovery function either recover or stop.
- (6) HSP ERROR count
 - Display total HSP ERROR count.
- (7) HSP ERROR count reset
 - Reset the HSP ERROR counter.
- (8) SIDM enable/disable
 - If it's selected disable, cannot select SIDM emulations by Menu.

System maintenance mode menu system



4.1.3 Engine maintenance mode

- The engine maintenance mode is activated when the power is turned ON while pressing to the Form Feed key and Enter key.
- This mode adopts the menu for function selection.
- The method for exit from this mode depends on the setting.
- The engine maintenance mode is provided with the following functions:
 - (1) Head drive time setting
 - Sets the drive time of the LED head.
 - (2) Setting of Head drive timing compensation while OST is on.
 - This function sets head drive timing compensation level while OST is on at 600 DPI mode.
 - (3) Compensated head type setting
 - This function sets type of the compensated head.
 - (4) Printing start position setting
 - Sets the printing start position.
 - (5) Drum count total display
 - Displays on the LCD the total number of drum revolutions in the unit counted at the engine.
 - (6) Drum count display
 - Displays on the LCD the total number of EP drum revolutions counted at the engine.
 - (7) Setting of standard tray paper feed length
 - This function sets the paper feed length of standard tray paper.
 - (8) Setting of front feeder paper feed length
 - This function sets the paper feed length of the front feeder.
 - (9) Setting of High Capacity Second Paper Feeder paper feed length
 - This function sets the paper feed length of the High Capacity Second Paper Feeder.
 - (10) Selection of High Capacity Second Paper Feeder download table
 - This function selects the download table for the High Capacity Second Paper Feeder.

(11) Setting of Multi Feeder paper feed length

- This function sets the paper feed length of the Multi Feeder.

(12) Selection of Multi Feeder download table

- This function selects the download table for the Multi Feeder.

(13) Fuser count display

- Displays on the LCD the total number of printed pages counted at the engine.

(14) Fuser count reset

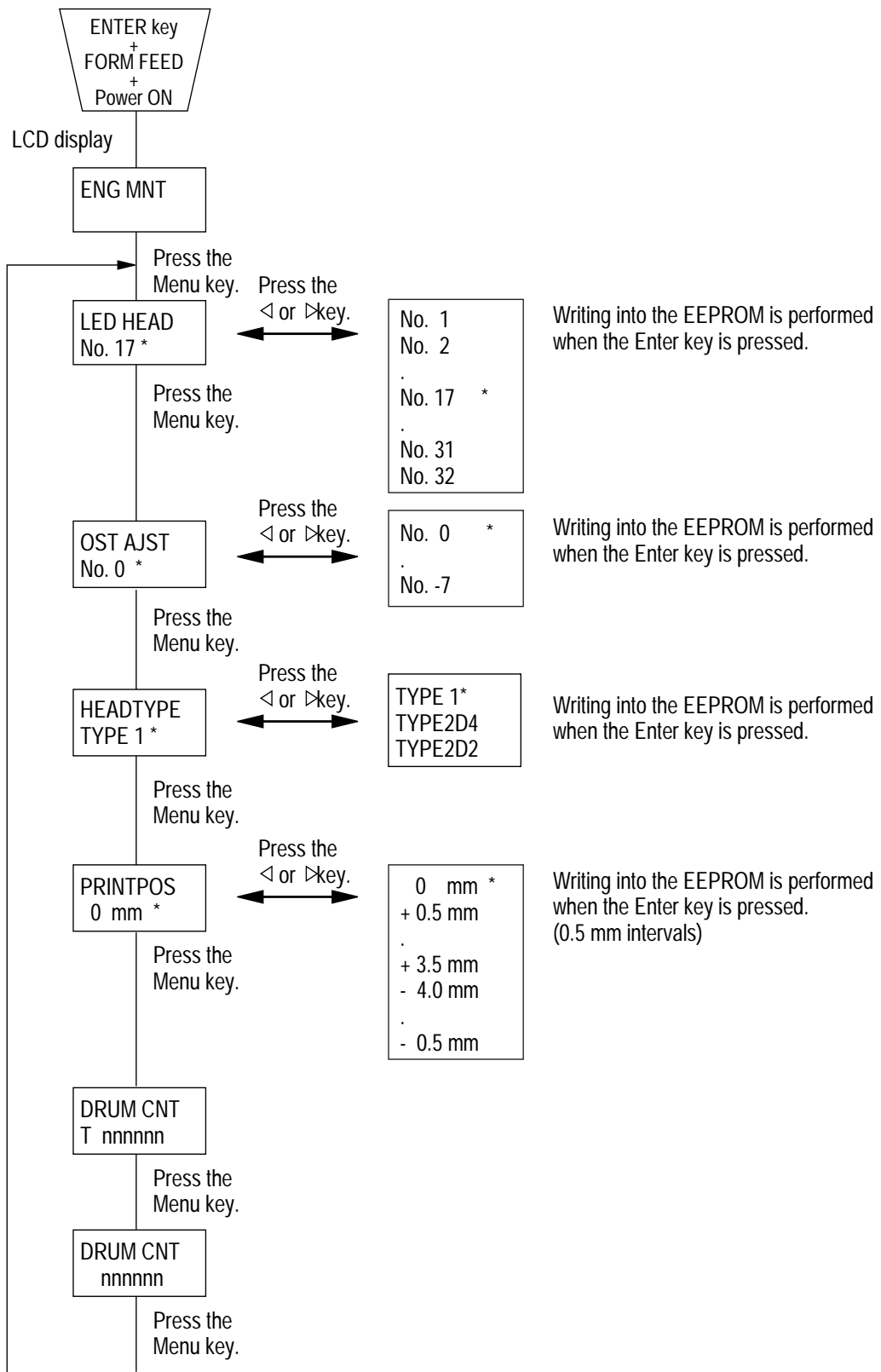
- When the fuser unit is replaced, the maintenance person uses this fuser count reset function to reset the fuser lifetime.
- After the fuser counter is reset, the engine enters into the operation mode automatically

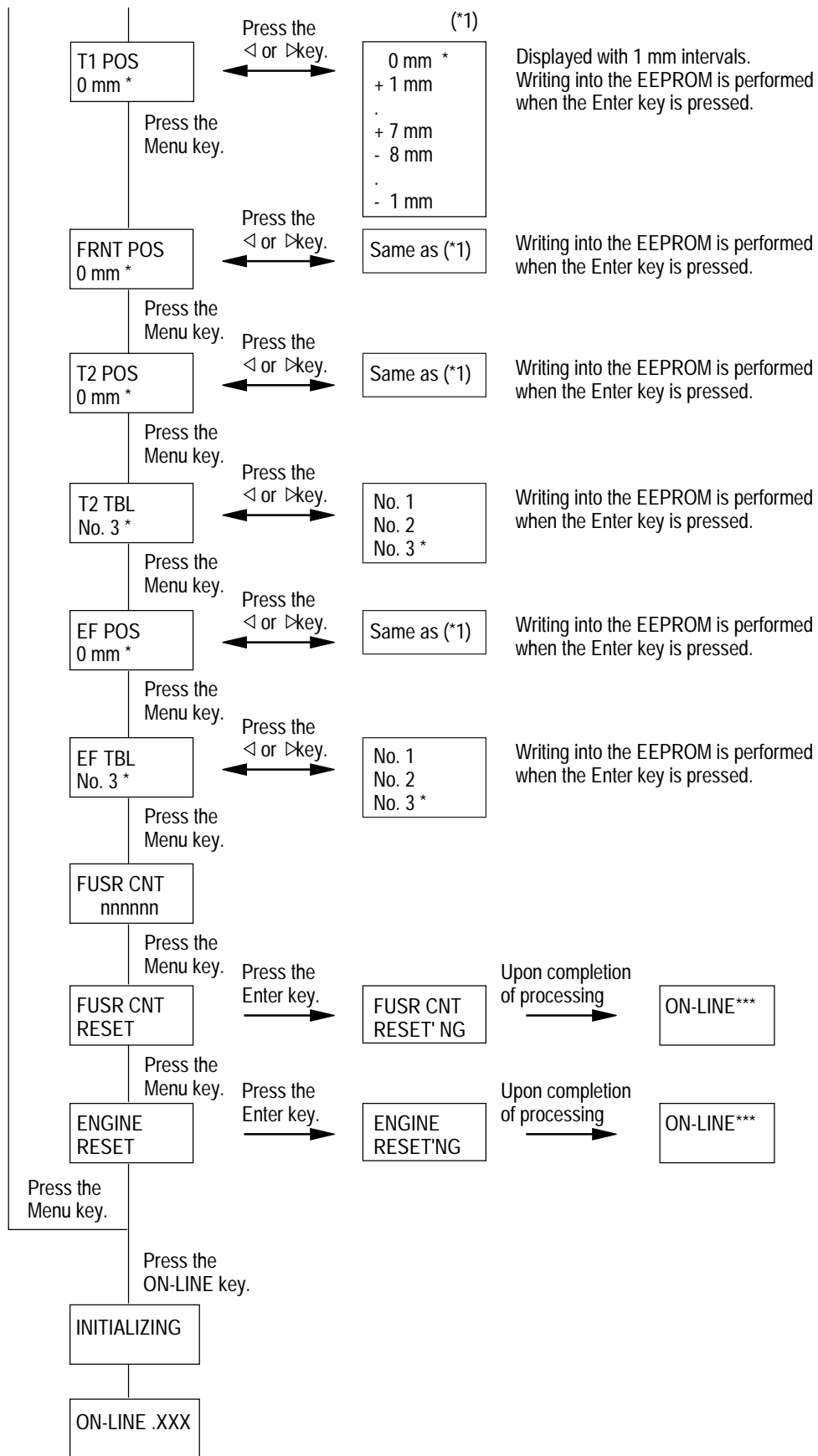
(15) Engine reset

- All EEPROM areas used by the engine are reset to the 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.

Note: Do not change the default value of (2), (5), (8) ~ (13) they are the parameter for adjusting in the factory.

- Engine maintenance mode menu system





4.1.4 EEPROM initialization

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

Table 4-1

Event \ EEPROM area	Menu level 1	Menu level 2	F/W revision area	Information for destination	Engine area	Drum counter	Fuser counter	Page counter	XY adjust	LED head drive time	Remarks
Menu resetting for user maintenance	j										
EEPROM resetting for system maintenance	j	j							j		
Engine resetting for engine maintenance					j	j	j	j			
Firmware revision check error LCD display: EEPROM RESETTING	j	j	j						j		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					j	j	j	j		j	This initialization occurs when a new EEPROM is mounted.
Engine ID error LCD display: ENGINE RESET					j	j	j	j		j	
Setting of data for destination	j	j		j					j		
User information error LCD display: EEPROM RESETTING	j	j		j					j		This resetting occurs when irregular user information is detected.

j : shows initialization

4.2 Adjustment When Replacing A Part

Adjustment becomes necessary when replacing one of the following parts.

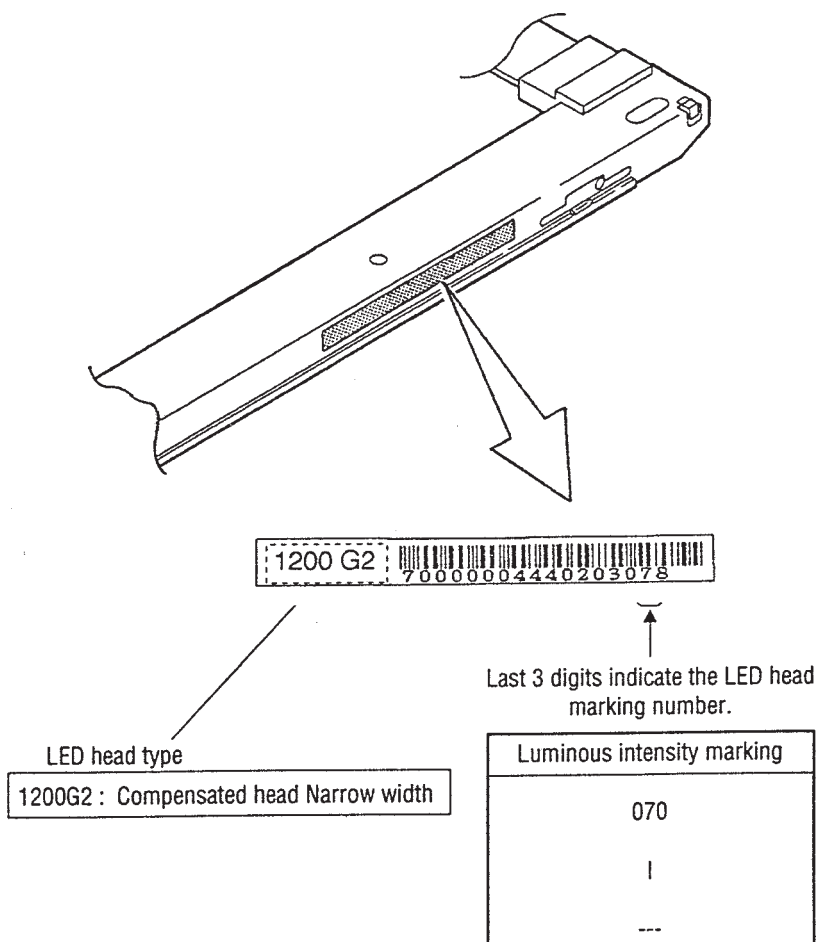
Part Replaced	Adjustment
LED Head	Set the LED head drive time. (Refer to Chapter 4.2.1)
Image Drum Cartridge	Reset the image drum counter. (Refer to User's manual)
Fuser Unit	Reset the fuser counter. (Refer to Chapter 4.2.2)
EEPROM	Set the LED head drive time. (Refer to Chapter 4.2.1)

4.2.1 Setting of LED head drive time

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

- Luminous intensity marking label

(1) Normal Type LED HEAD



- Setting of LED head drive time

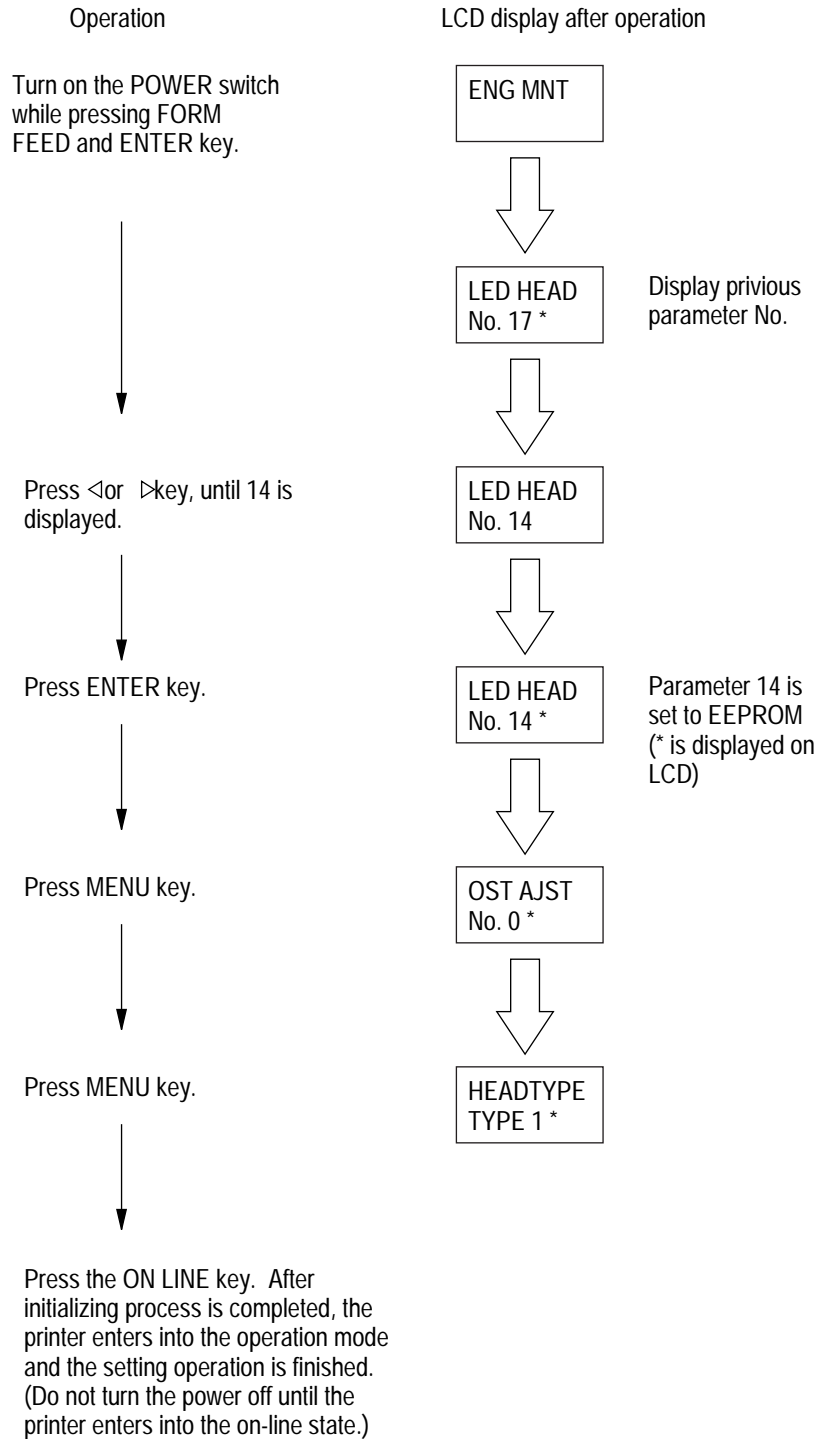
Drive time of the LED head is to set parameter of drive time setting values corresponding to the lumious intensity displays marked on the LED head to EEPROM.

- a. Corresponding table of lumious energy display and drive time parameter

Luminous intensity display on LED head	Drive time parameter	Luminous intensity display on LED head	Drive time parameter
0.27 ~ 0.28	25	0.61 ~ 0.64	13
0.29 ~ 0.30	24	0.65 ~ 0.69	12
0.31 ~ 0.32	23	0.70 ~ 0.73	11
0.33 ~ 0.35	22	0.74 ~ 0.79	10
0.36 ~ 0.37	21	0.80 ~ 0.84	9
0.38 ~ 0.40	20	0.85 ~ 0.90	8
0.41 ~ 0.43	19	0.91 ~ 0.96	7
0.44 ~ 0.46	18	0.97 ~ 1.03	6
0.47 ~ 0.49	17	1.04 ~ 1.10	5
0.50 ~ 0.52	16	1.11 ~ 1.18	4
0.53 ~ 0.57	15	1.19 ~ 1.26	3
0.58 ~ 0.60	14	1.27 ~ 1.35	2

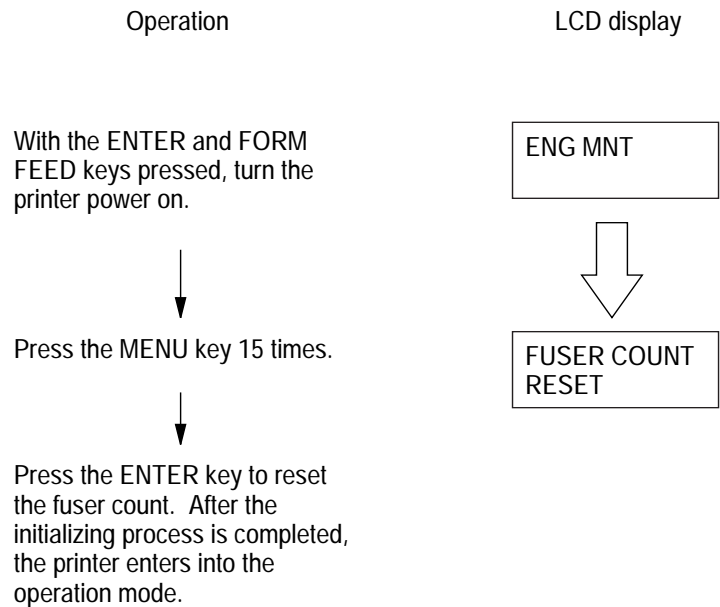
b. Setting

Example: Setting method the parameter to 14 (in case of previous parameter is 17).



4.2.2 Resetting the fuser counter

- (1) The fuser counter can be reset in the engine maintenance mode.
- (2) Resetting method



4.2.3 Destination setting

The desired destination can be set by turning the power on while depressing two keys corresponding to the destination according to the following table.

Destination	Keys to be depressed
ODA	MENU, ▷
OEL	MENU, ◁
OKI-INT-A (Australia, etc.)	MENU, PAPER SIZE
OKI-INT-L (Singapore, etc.)	MENU, TRAY TYPE

5. PERIODIC MAINTENANCE

5.1 Periodic Part Replacement

As specified below, the parts shall be replaced periodically.

Part name	Condition for replacement	Cleaning	Remarks
• Toner cartridge	5,000	• LED head.	Consumables
• Image drum cartridge	30,000	• LED head.	Consumables

5.2 Cleaning

Remove any toner and dust. Clean inside and around the printer with a piece of cloth when necessary. Use the handy cleaner (VACCUM) for cleaning the printers interior.

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

5.2.1 Cleaning of LED lens array

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

Note: The LED lens array must be cleaned with an LED head cleaner.

White lines or stripes
(void, light printing)



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6. TROUBLESHOOTING PROCEDURES

6.1 Troubleshooting Tips

- (1) Check the basic check points covered in the user's manual.
- (2) Gather as much information on the problem from the customer as possible.
- (3) Perform inspections in conditions close to those in which the problem had occurred.

6.2 Points to Check before Correcting Image Problems

- (1) Is the printer being run in proper ambient conditions?
- (2) Have the supplies (toner) and the routine replacement part (image drum cartridge) been replaced properly?
- (3) Is the paper normal? See paper specifications section.
- (4) Has the image drum cartridge been loaded properly?

6.3 Tips for Correcting Image Problems

- (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 is heated during operation.
- (4) Do not expose the image drum to light for longer than 5 minutes at room temperature.

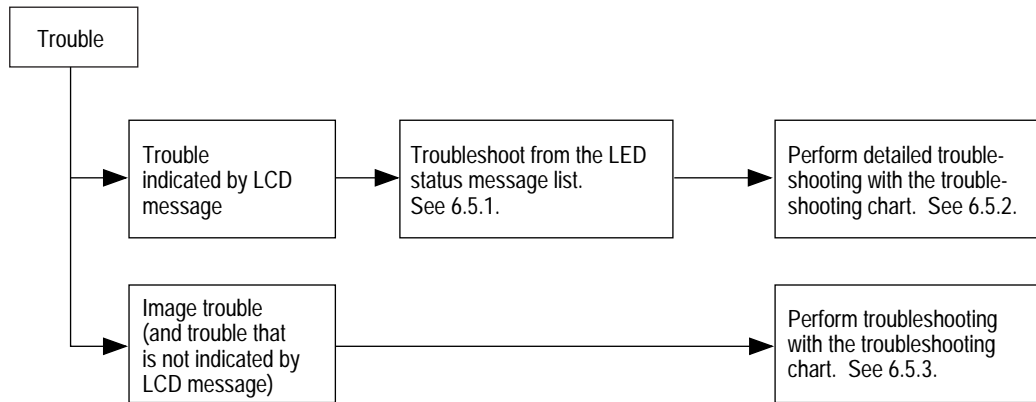
6.4 Preparation for Troubleshooting

Operator Panel Display

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

6.5 Troubleshooting Flow

If trouble should develop in this printer, troubleshoot based on the following procedure flow:



6.5.1 LCD Status Message/Trouble List

Table 6-1 lists the status and problems that may be indicated by messages on the LCD.

LED status

■	: OFF	■	: BLINK
■	: ON	□	: Undefined

Category	LCD status message	Trouble or status	Remedy
Daily status	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> ON-LINE .xxx tttttt </div> <ul style="list-style-type: none"> READY MANFEED ATTENTION DATA 	The printer is in the on-line mode. xxx: Emulation in use (HP4, PS, HEX, AUT) ttttt: Tray being selected (TRAY 1, TRAY 2, FRONT, MANUAL, FEEDER) mmmmmmmmm: Paper size in the tray being selected (LETTER, EXECUTIVE, LEGAL 14, LEGAL 13,A4 SIZE, A5 SIZE, A6 SIZE, B5 SIZE, COM-10,MONARCH, COM-9, DL ENV, C5 ENV, C4 ENV)	Normal operation
	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> OFF-LINE .xxx tttttt </div> <ul style="list-style-type: none"> READY MANFEED ATTENTION DATA 	The printer is in the off-line mode.	
	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> DATA PRESENT .xxx </div> <ul style="list-style-type: none"> READY MANFEED ATTENTION DATA 	The data remains unprinted in the buffer. Data On: The printer is in the on-line mode. Data Flash: The printer is receiving the data or performing the output processing.	In the off-line mode, the data is printed by pressing the FORM FEED button.
	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> PROCESSING .xxx </div> <ul style="list-style-type: none"> READY MANFEED ATTENTION DATA 	The printer is processing data. XXX: (PS, AUT) (OKIPAGE16n/PS only)	Normal operation
	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> WAITING .xxx </div> <ul style="list-style-type: none"> READY MANFEED ATTENTION DATA 	The printer is waiting for the next data. XXX: (PS, AUT) (OKIPAGE16n/PS only)	

Category	LCD status message	Trouble or status	Remedy
Daily status	<div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 5px; margin-right: 10px;">PRINTING</div> <div style="display: flex; flex-direction: column; gap: 5px;"> <div><input type="checkbox"/> READY</div> <div><input type="checkbox"/> MANFEED</div> <div><input type="checkbox"/> ATTENTION</div> <div><input checked="" type="checkbox"/> DATA</div> </div> </div>	The printer is printing.	Normal operation
	<div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 5px; margin-right: 10px;">POWER SAVING</div> <div style="display: flex; flex-direction: column; gap: 5px;"> <div><input type="checkbox"/> READY</div> <div><input type="checkbox"/> MANFEED</div> <div><input type="checkbox"/> ATTENTION</div> <div><input type="checkbox"/> DATA</div> </div> </div>	It enters into this mode when printer idle status duration exceeds the value set by the menu.	
	<div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 5px; margin-right: 10px;">TONER LOW</div> <div style="display: flex; flex-direction: column; gap: 5px;"> <div><input type="checkbox"/> READY</div> <div><input type="checkbox"/> MANFEED</div> <div><input checked="" type="checkbox"/> ATTENTION</div> <div><input type="checkbox"/> DATA</div> </div> </div>	<p>Toner is running out</p> <p>This message is displayed in combination with other message indicated in the first line. Normal operation such as stop/ continuation of printing can be continued.</p> <p>If "LOW TONER = OFF" is selected in the menu, the LED "ATTENTION" flashes.</p>	– Replace the toner cartridge.
	<div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 5px; margin-right: 10px;">TONER SENSOR</div> <div style="display: flex; flex-direction: column; gap: 5px;"> <div><input type="checkbox"/> READY</div> <div><input type="checkbox"/> MANFEED</div> <div><input checked="" type="checkbox"/> ATTENTION</div> <div><input type="checkbox"/> DATA</div> </div> </div>	<p>A fault occurred in the toner sensor.</p> <p>Normal operation can be continued.</p>	<ul style="list-style-type: none"> – Check the operation of the toner sensor lever. – Replace the Power Supply – Replace the Main board (BOARD-COM) <p>Note: When replacing the Main board, install the EEPROM mounted on the replaced Main board.</p>
	<div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 5px; margin-right: 10px;">RESET</div> <div style="display: flex; flex-direction: column; gap: 5px;"> <div><input checked="" type="checkbox"/> READY</div> <div><input checked="" type="checkbox"/> MANFEED</div> <div><input checked="" type="checkbox"/> ATTENTION</div> <div><input checked="" type="checkbox"/> DATA</div> </div> </div>	<p>The data that remains unprinted in the buffer is deleted and the printer is initialized to the user default settings.</p> <p>The temporary DLL, Macro, and User pattern are deleted.</p>	Normal operation
	<div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 5px; margin-right: 10px;">PRINTER BUSY</div> <div style="display: flex; flex-direction: column; gap: 5px;"> <div><input checked="" type="checkbox"/> READY</div> <div><input type="checkbox"/> MANFEED</div> <div><input type="checkbox"/> ATTENTION</div> <div><input type="checkbox"/> DATA</div> </div> </div>	The printer is processing data, and can not go to off line. (OKIPAGE16n/PS only)	

Category	LCD status message	Trouble or status	Remedy
Daily status	<div style="border: 1px solid black; padding: 5px; display: inline-block;">RESET TO FLUSH</div> <div style="display: inline-block; vertical-align: top; margin-left: 10px;"> <input checked="" type="checkbox"/> READY <input type="checkbox"/> MANFEED <input type="checkbox"/> ATTENTION <input type="checkbox"/> DATA </div>	Allows operator to flush processing data by pressing RESET button for 2 seconds. (OKIPAGE16n/PS only)	Normal operation
	<div style="border: 1px solid black; padding: 5px; display: inline-block;">FLUSHING JOB</div> <div style="display: inline-block; vertical-align: top; margin-left: 10px;"> <input checked="" type="checkbox"/> READY <input type="checkbox"/> MANFEED <input type="checkbox"/> ATTENTION <input type="checkbox"/> DATA </div>	The printer is flushing current data. This message is displayed till the end of the current data. (OKIPAGE16n/PS only)	
	<div style="border: 1px solid black; padding: 5px; display: inline-block;">PRINT FONTS</div> <div style="display: inline-block; vertical-align: top; margin-left: 10px;"> <input type="checkbox"/> READY <input type="checkbox"/> MANFEED <input type="checkbox"/> ATTENTION <input checked="" type="checkbox"/> DATA </div>	All fonts of the printer are being printed. Ready ON: Executed by command entry. Ready flashing: Executed by key operation.	
	<div style="border: 1px solid black; padding: 5px; display: inline-block;">PRINT DEMO PAGE</div> <div style="display: inline-block; vertical-align: top; margin-left: 10px;"> <input type="checkbox"/> READY <input type="checkbox"/> MANFEED <input type="checkbox"/> ATTENTION <input checked="" type="checkbox"/> DATA </div>	The demo page is being printed. Ready ON: Executed by command entry. Ready flashing: Executed by key	
	<div style="border: 1px solid black; padding: 5px; display: inline-block;">PRINT MENU</div> <div style="display: inline-block; vertical-align: top; margin-left: 10px;"> <input type="checkbox"/> READY <input type="checkbox"/> MANFEED <input type="checkbox"/> ATTENTION <input checked="" type="checkbox"/> DATA </div>	The current menu setting is being printed. Ready ON: Executed by command entry Ready flashing: Executed by key operation	
	<div style="border: 1px solid black; padding: 5px; display: inline-block;">CHANGE DRUM</div> <div style="display: inline-block; vertical-align: top; margin-left: 10px;"> <input type="checkbox"/> READY <input type="checkbox"/> MANFEED <input checked="" type="checkbox"/> ATTENTION <input type="checkbox"/> DATA </div>	The drum count is near end of life. This message is displayed in combination with other message indicated on the first line. Normal operation can be continued.	

Category	LCD status message	Trouble or status	Remedy
Daily status	<div style="border: 1px solid black; padding: 5px; display: inline-block;">FUSER LIFE</div> <ul style="list-style-type: none"> <input type="checkbox"/> READY <input type="checkbox"/> MANFEED <input checked="" type="checkbox"/> ATTENTION <input type="checkbox"/> DATA 	<p>The fuser is nearing end of life. This message is displayed in combination with other message indicated on the first line. Normal operation can be continued.</p>	<p>– Replace the fuse unit. Note: After replacing the fuser unit reset the fuser counter. (Refer to chapter 4.2.2.)</p>
	<div style="border: 1px solid black; padding: 5px; display: inline-block;">COPY nnn/mm</div> <ul style="list-style-type: none"> <input type="checkbox"/> READY <input type="checkbox"/> MANFEED <input type="checkbox"/> ATTENTION <input checked="" type="checkbox"/> DATA 	<p>When the number of copies being printed is two or more, the number of copies being printed is displayed.</p>	<p>Normal operation</p>
	<div style="border: 1px solid black; padding: 5px; display: inline-block;">STACKER FULL REMOVE THE PAPER</div> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> READY <input checked="" type="checkbox"/> MANFEED <input type="checkbox"/> ATTENTION <input checked="" type="checkbox"/> DATA 	<p>The face-down stacker is full of paper.</p>	<ul style="list-style-type: none"> – Remove paper from the stacker. – Repair the broker stacker sensor cable – Repeat the insertion and removal of the connector. – Clean or replace the stacker full sensor.
	<div style="border: 1px solid black; padding: 5px; display: inline-block;">mmmmmmmm MANUAL YYYYYYYY REQUEST</div> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> READY <input type="checkbox"/> MANFEED <input type="checkbox"/> ATTENTION <input checked="" type="checkbox"/> DATA 	<p>Manual loading of paper indicated by the first line message is requested. YYYYYYYY: Tray being selected (PAPER, ENVELOPE)</p>	<p>Load the requested paper in the manual feeder and press the Form Feed button.</p>
	<div style="border: 1px solid black; padding: 5px; display: inline-block;">PS NOT AVAILABLE</div> <ul style="list-style-type: none"> <input type="checkbox"/> READY <input type="checkbox"/> MANFEED <input type="checkbox"/> ATTENTION <input type="checkbox"/> DATA 	<p>It indicates that the PostScript, a printer language which is not incorporated in the printer is stipulated by PjL command. (Warning) It may be cleared by depression of the RECOVER key when CLEARABLE WARNINGS=ON is selected in the MENU.</p>	
	<div style="border: 1px solid black; padding: 5px; display: inline-block;">EJECTING</div> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> READY <input checked="" type="checkbox"/> MANFEED <input type="checkbox"/> ATTENTION <input type="checkbox"/> DATA 	<p>The printer is ejecting a page</p>	

Category	LCD status message	Trouble or status	Remedy
Daily status	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> DRUM CLEANING MANUAL XXXXX R.. </div> <div style="display: inline-block; vertical-align: top; margin-left: 10px;"> <div style="display: flex; align-items: center; margin-bottom: 5px;"> <div style="width: 15px; height: 15px; background-color: #cccccc; border: 1px solid black; margin-right: 5px;"></div> READY </div> <div style="display: flex; align-items: center; margin-bottom: 5px;"> <div style="width: 15px; height: 15px; background-color: #ffffff; border: 1px solid black; margin-right: 5px;"></div> MANFEED </div> <div style="display: flex; align-items: center; margin-bottom: 5px;"> <div style="width: 15px; height: 15px; background-color: #ffffff; border: 1px solid black; margin-right: 5px;"></div> ATTENTION </div> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: #666666; border: 1px solid black; margin-right: 5px;"></div> DATA </div> </div>	It indicates that it is performing drum cleaning. The second line shows either of these messages: "MANUAL LETTER REQUEST" or "MANUAL A4 SIZE REQUEST".	
	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> FRONT TRAY ERROR PRESS RECOVERKEY </div> <div style="display: inline-block; vertical-align: top; margin-left: 10px;"> <div style="display: flex; align-items: center; margin-bottom: 5px;"> <div style="width: 15px; height: 15px; background-color: #000000; border: 1px solid black; margin-right: 5px;"></div> READY </div> <div style="display: flex; align-items: center; margin-bottom: 5px;"> <div style="width: 15px; height: 15px; background-color: #000000; border: 1px solid black; margin-right: 5px;"></div> MANFEED </div> <div style="display: flex; align-items: center; margin-bottom: 5px;"> <div style="width: 15px; height: 15px; background-color: #cccccc; border: 1px solid black; margin-right: 5px;"></div> ATTENTION </div> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: #ffffff; border: 1px solid black; margin-right: 5px;"></div> DATA </div> </div>	It indicates that a home position error of the front tray has occurred. The front tray becomes invalid when the RECOVER key is depressed. Other trays remain effective.	
	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> TONER EMPTY </div> <div style="display: inline-block; vertical-align: top; margin-left: 10px;"> <div style="display: flex; align-items: center; margin-bottom: 5px;"> <div style="width: 15px; height: 15px; background-color: #000000; border: 1px solid black; margin-right: 5px;"></div> READY </div> <div style="display: flex; align-items: center; margin-bottom: 5px;"> <div style="width: 15px; height: 15px; background-color: #000000; border: 1px solid black; margin-right: 5px;"></div> MANFEED </div> <div style="display: flex; align-items: center; margin-bottom: 5px;"> <div style="width: 15px; height: 15px; background-color: #cccccc; border: 1px solid black; margin-right: 5px;"></div> ATTENTION </div> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: #ffffff; border: 1px solid black; margin-right: 5px;"></div> DATA </div> </div>	Indicates depletion of the toner. Volume of remaining toner is much less than that of the TONER LOW alarm level. Even though it may resume temporarily by the cover open/close operation, the toner cartridge should be replaced.	– Replace the Toner Cartridge
Paper request	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> mmmmmmmmm tttttt PAPER REQUEST </div> <div style="display: inline-block; vertical-align: top; margin-left: 10px;"> <div style="display: flex; align-items: center; margin-bottom: 5px;"> <div style="width: 15px; height: 15px; background-color: #000000; border: 1px solid black; margin-right: 5px;"></div> READY </div> <div style="display: flex; align-items: center; margin-bottom: 5px;"> <div style="width: 15px; height: 15px; background-color: #000000; border: 1px solid black; margin-right: 5px;"></div> MANFEED </div> <div style="display: flex; align-items: center; margin-bottom: 5px;"> <div style="width: 15px; height: 15px; background-color: #cccccc; border: 1px solid black; margin-right: 5px;"></div> ATTENTION </div> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: #666666; border: 1px solid black; margin-right: 5px;"></div> DATA </div> </div>	Loading of paper indicated by the first line message is requested.	– Load the requested paper in the tray.
Tray paper out	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> PAPER OUT mmmmmmmmm tttttt </div> <div style="display: inline-block; vertical-align: top; margin-left: 10px;"> <div style="display: flex; align-items: center; margin-bottom: 5px;"> <div style="width: 15px; height: 15px; background-color: #000000; border: 1px solid black; margin-right: 5px;"></div> READY </div> <div style="display: flex; align-items: center; margin-bottom: 5px;"> <div style="width: 15px; height: 15px; background-color: #000000; border: 1px solid black; margin-right: 5px;"></div> MANFEED </div> <div style="display: flex; align-items: center; margin-bottom: 5px;"> <div style="width: 15px; height: 15px; background-color: #cccccc; border: 1px solid black; margin-right: 5px;"></div> ATTENTION </div> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: #000000; border: 1px solid black; margin-right: 5px;"></div> DATA </div> </div>	Either there is no paper tray or the tray has run out of paper. ttttt: Tray being selected (TRAY1, TRAY2, FRONT, MANUAL, FEEDER)	– Load paper or paper cassette.
	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> CANNOT USE A6 PAPER ON TRAY2 </div> <div style="display: inline-block; vertical-align: top; margin-left: 10px;"> <div style="display: flex; align-items: center; margin-bottom: 5px;"> <div style="width: 15px; height: 15px; background-color: #000000; border: 1px solid black; margin-right: 5px;"></div> READY </div> <div style="display: flex; align-items: center; margin-bottom: 5px;"> <div style="width: 15px; height: 15px; background-color: #000000; border: 1px solid black; margin-right: 5px;"></div> MANFEED </div> <div style="display: flex; align-items: center; margin-bottom: 5px;"> <div style="width: 15px; height: 15px; background-color: #cccccc; border: 1px solid black; margin-right: 5px;"></div> ATTENTION </div> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: #ffffff; border: 1px solid black; margin-right: 5px;"></div> DATA </div> </div>	Indicates that A6 size paper can not be used with the second paper tray. A6 size paper shall be used with the first paper tray or with the front feeder.	

Category	LCD status message	Trouble or status	Remedy
	<div style="border: 1px solid black; padding: 5px; display: inline-block;">TRAY1 INSTALL</div> <ul style="list-style-type: none"> READY MANFEED ATTENTION DATA 	Indicates that the first paper tray which is a part of paper path for paper in the second tray was removed.	<ul style="list-style-type: none"> - Install the first paper tray.
Buffer overflow	<div style="border: 1px solid black; padding: 5px; display: inline-block;">ERROR MEMORY OVERFLOW</div> <ul style="list-style-type: none"> READY MANFEED ATTENTION DATA 	The memory overflowed due to the following causes. - Data to be printed in one page is too much. - Macro data is too much - DLL data is too much.	<ul style="list-style-type: none"> - Press the RECOVER key on the operator panel to release the error display. - Install an expansion optional RAM or reduce the amount of print data.
	<div style="border: 1px solid black; padding: 5px; display: inline-block;">ERROR RECEIVE BUFFER OVERFLOW</div> <ul style="list-style-type: none"> READY MANFEED ATTENTION DATA 	The receive buffer was overflowed	<ul style="list-style-type: none"> - Press the RECOVER key on the operator panel to release the error display. - Change the setting of the host side so that the host can detect the busy state of the printer. Resend the data from the host side to the printer.
	<div style="border: 1px solid black; padding: 5px; display: inline-block;">ERROR PRINT OVERRUN</div> <ul style="list-style-type: none"> READY MANFEED ATTENTION DATA 	Printer overrun.	<ul style="list-style-type: none"> - Press the RECOVER key on the operator panel to release the error display. - Simplify page data formatting or add memory then select "Page Protection" from menu.
Interface error	<div style="border: 1px solid black; padding: 5px; display: inline-block;">OKI HSP I/F CARD RESETTING</div> <ul style="list-style-type: none"> READY MANFEED ATTENTION DATA 	Indicates that OKI HSP I/F card is being reset. It automatically restores upon completion of resetting.	
	<div style="border: 1px solid black; padding: 5px; display: inline-block;">ERROR HOST I/F OKI HSP xx</div> <ul style="list-style-type: none"> READY MANFEED ATTENTION DATA 	Indicates that an error (critical failure) occurred with OKI HSI I/F. Continues the operation when RECOVER key is pressed. xx: 10 I/F time out 20 other error	

Category	LCD status message	Trouble or status	Remedy
Paper size error	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> ERROR PAPER SIZE CHECK tttttt </div> <div style="display: inline-block; vertical-align: top; margin-left: 10px;"> <div style="display: flex; align-items: center; margin-bottom: 5px;"> <div style="width: 15px; height: 15px; background-color: black; margin-right: 5px;"></div> READY </div> <div style="display: flex; align-items: center; margin-bottom: 5px;"> <div style="width: 15px; height: 15px; background-color: black; margin-right: 5px;"></div> MANFEED </div> <div style="display: flex; align-items: center; margin-bottom: 5px;"> <div style="width: 15px; height: 15px; background-color: lightgray; margin-right: 5px;"></div> ATTENTION </div> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: gray; margin-right: 5px;"></div> DATA </div> </div>	Paper of improper size was fed from the tray. ttttt: MANUAL, TRAY 1, TRAY 2, FRONT, FEEDER	<ul style="list-style-type: none"> - Check the paper in the tray or check to see if more than one sheet was fed simultaneously. - Open the cover, then close it to perform recovery printing and the error display is released. - If this error occurs frequently, see chapter 6.5.2.
	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> PAPER INPUT JAM CHECK tttttt </div> <div style="display: inline-block; vertical-align: top; margin-left: 10px;"> <div style="display: flex; align-items: center; margin-bottom: 5px;"> <div style="width: 15px; height: 15px; background-color: black; margin-right: 5px;"></div> READY </div> <div style="display: flex; align-items: center; margin-bottom: 5px;"> <div style="width: 15px; height: 15px; background-color: black; margin-right: 5px;"></div> MANFEED </div> <div style="display: flex; align-items: center; margin-bottom: 5px;"> <div style="width: 15px; height: 15px; background-color: lightgray; margin-right: 5px;"></div> ATTENTION </div> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: gray; margin-right: 5px;"></div> DATA </div> </div>	A jam occurred during paper feeding from the tray. ttttt: MANUAL, TRAY 1, TRAY 2, FRONT, FEEDER	<ul style="list-style-type: none"> - Check the paper in the cassette. Open the cover, then close it to perform recovery printing and the error display is released. - If this error occurs frequently, see chapter 6.5.2.
Jam errors	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> PAPER FEED JAM CHECK tttttt </div> <div style="display: inline-block; vertical-align: top; margin-left: 10px;"> <div style="display: flex; align-items: center; margin-bottom: 5px;"> <div style="width: 15px; height: 15px; background-color: black; margin-right: 5px;"></div> READY </div> <div style="display: flex; align-items: center; margin-bottom: 5px;"> <div style="width: 15px; height: 15px; background-color: black; margin-right: 5px;"></div> MANFEED </div> <div style="display: flex; align-items: center; margin-bottom: 5px;"> <div style="width: 15px; height: 15px; background-color: lightgray; margin-right: 5px;"></div> ATTENTION </div> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: gray; margin-right: 5px;"></div> DATA </div> </div>	A jam occurred during paper travel through the printer. ttttt: MANUAL, TRAY 1, TRAY 2, FRONT, FEEDER	<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 chapter 6.5.2.
	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> PAPER EXIT JAM REMOVE THE PAPER </div> <div style="display: inline-block; vertical-align: top; margin-left: 10px;"> <div style="display: flex; align-items: center; margin-bottom: 5px;"> <div style="width: 15px; height: 15px; background-color: black; margin-right: 5px;"></div> READY </div> <div style="display: flex; align-items: center; margin-bottom: 5px;"> <div style="width: 15px; height: 15px; background-color: black; margin-right: 5px;"></div> MANFEED </div> <div style="display: flex; align-items: center; margin-bottom: 5px;"> <div style="width: 15px; height: 15px; background-color: lightgray; margin-right: 5px;"></div> ATTENTION </div> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background-color: gray; margin-right: 5px;"></div> DATA </div> </div>	A jam occurred during paper discharge.	<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 chapter 6.5.2.

Category	LCD status message	Trouble or status	Remedy
Daily status	<div style="border: 1px solid black; padding: 5px; display: inline-block;">menu</div> <ul style="list-style-type: none"> <input type="checkbox"/> READY <input type="checkbox"/> MANFEED <input type="checkbox"/> ATTENTION <input type="checkbox"/> DATA 	Menu operation	Normal operation in menu mode.
	<div style="border: 1px solid black; padding: 5px; display: inline-block;">COVER OPEN</div> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> READY <input checked="" type="checkbox"/> MANFEED <input type="checkbox"/> ATTENTION <input type="checkbox"/> DATA 	The upper cover was opened.	<ul style="list-style-type: none"> – Close the cover to release the error display. – If the display does not change after the cover is closed, check for correct operation of cover open/switch and lever. – Replace the Power/sensor board.
Controller error	<div style="border: 1px solid black; padding: 5px; display: inline-block;">EEPROM RESETTING</div> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> READY <input checked="" type="checkbox"/> MANFEED <input checked="" type="checkbox"/> ATTENTION <input checked="" type="checkbox"/> DATA 	An error was detected by EEPROM ID No. check.	<ul style="list-style-type: none"> – It displays the message for a few seconds. It resets the EEPROM to the factory default state to continue operation.

Category	LCD status message	Trouble or status		Remedy
Controller error	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> ERROR CONTROLLER nn </div> <ul style="list-style-type: none"> READY MANFEED ATTENTION DATA 	A fault occurred in the printer. Turn the power off, then on to release the error display. If the error display cannot be released by this procedure, call a service person.		* When the program ROM is updated and the EEPROM is replaced with a new one, the menu factory default corresponding to each destination will be loaded
		Code (nn)	Error	Remedy
		10	An error was detected by program hash check.	– Replace the program ROM. (Location: BOARD-COM: Q18, Q19) – Replace the Main board (BOARD-COM). Note: When replacing the Main board, install the EEPROM mounted on the replaced Main board.
		20	An error was detected by font format check.	– Replace the font ROM. (Location: BOARD-COM: Q18, Q19) – Replace the Main board (BOARD-COM). Note: When replacing the Main board, install the EEPROM mounted on the replaced Main board.
		30	An error was detected by resident RAM check.	– Replace the Main board (BOARD-COM). Note: When replacing the Main board, install the EEPROM mounted on the replaced Main board.
		40	An error was detected by EEPROM check.	– Replace the EEPROM. (Location: Q12)* – Replace the Main board (BOARD-COM).
		50	An error was detected by optional software ROM.	– Replace the optional software ROM. (Location: BOARD-COM: 02C, 02D) – Replace the PostScript board (BOARD-PSBA).
		60	An error was detected by optional RAM check.	– Check the optional RAM for proper connection. – Replace the optional RAM.

Category	LCD status message	Trouble or status		Remedy
Controller error		Code (nn)	Error	Remedy
		70	A fault occurred in the fan motor.	<ul style="list-style-type: none"> - Connect the fan motor cable properly. - Replace the fan motor. - Replace the Power/sensor board.
		71	A fault occurred in the fuser.	See chapter 6.5.2.
		72	Thermistor open error	
		73	Thermistor short error	
		74	SSIO error	See chapter 6.5.2.
		80	I/F timeout occurred between the printer main unit and the operator panel.	See chapter 6.5.2.
		81	I/F timeout occurred between the printer main unit and the optional tray (2nd tray, envelope feeder, etc.)	See chapter 6.5.2.
		90	A watchdog timer timeout occurred.	<ul style="list-style-type: none"> - Turn the power off, then on. - Replace the Main board. (BOARD-COM) <p>Note: When replacing the Main board, install the EEPROM mounted on the replaced Main board</p>
		F0	Monitor error (double weight)	
		F1	Monitor error (argument error)	
		F2	Optional timeout error	
		F3	Optional status error	
		F4	BG program error	
		F5	System timer program error	
		F6	IPT2 program error	

Category	LCD status message	Trouble or status	Remedy	
Processor error	<div style="border: 1px solid black; padding: 5px; display: inline-block; margin-bottom: 10px;"> ERROR CONTROLLER On-aaaaaaaa </div> <div style="display: flex; flex-direction: column; gap: 5px;"> <div> READY</div> <div> MANFEED</div> <div> ATTENTION</div> <div> DATA</div> </div>	An error occurred in the controller. n = (*1) Exception Code aaaaaaaaa = Error address *1:	– Turn the power off, then on. – Replace the Main board. (BOARD-COM) Note: When replacing the Main board, install the EEPROM mounted on the replaced Main board.	
		Exception code		Error
		1~3 D~F		Reserved
		4		Address Error Exception (Lead instruction, instruction fetch)
		5		Address Error Exception (Store instruction)
		6		Bus Error Exception (Instruction Fetch)
		7		Bus Error Exception (Load instruction, store instruction)
		8		System Call Exception
		9		Breakpoint Exception
		A		Reserved Instruction Exception
		B		Coprocessor Unusable Exception
		C		Arithmetic Overflow Exception

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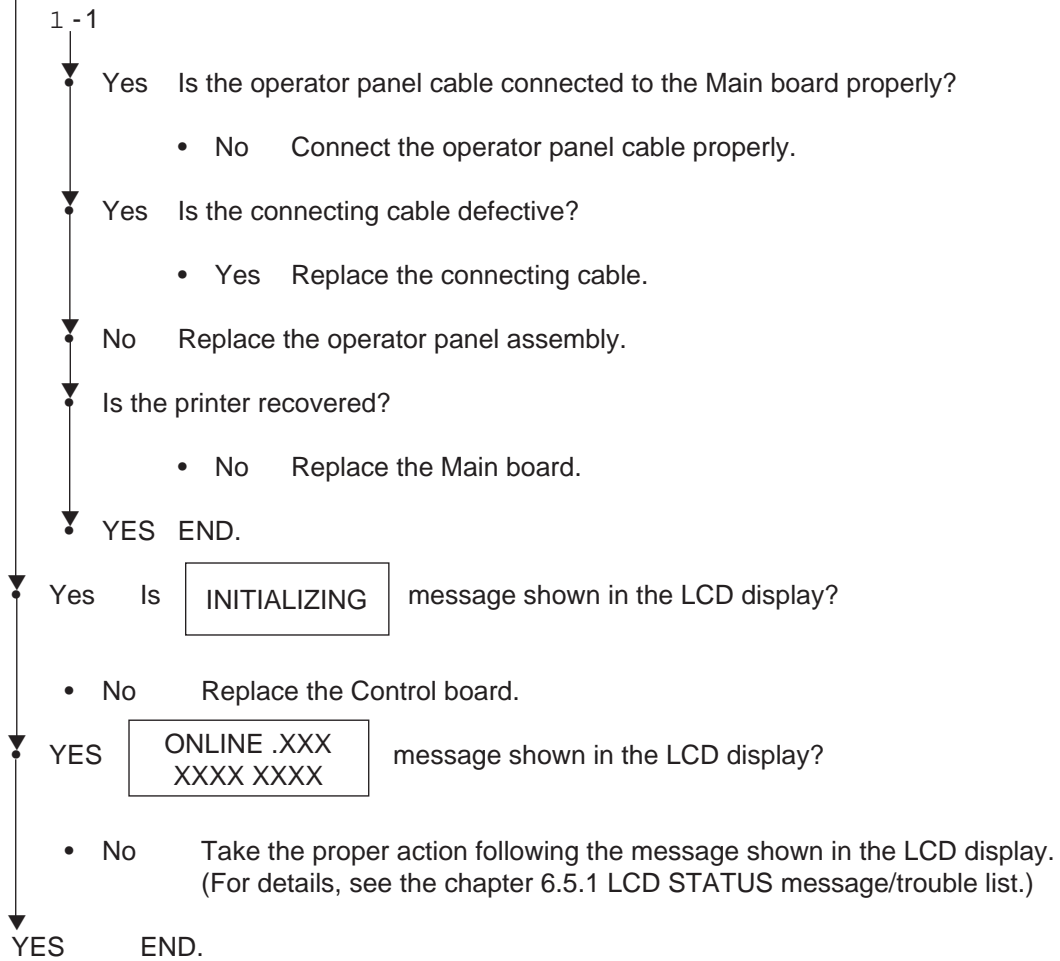
6.5.2 LCD message troubleshooting

If problems are not correctable from the LCD message trouble list, follow the troubleshooting flowcharts listed below.

No.	Trouble	Flowchart number
1.	The printer does not work normally after being turned on.	1
2.	Jam error <ul style="list-style-type: none"> — Paper input jam (1st Tray) — Paper input jam (Front feeder) — Paper feed jam — Paper exit jam 	2 - 1 2 - 2 2 - 3 2 - 4
3.	Paper size error	3
4.	Fusing unit error	4
5.	SSIO (Synchronous Serial I/O) error (between the Main board and the Power/sensor board)	9
6.	I/F time-out between the printer and the operator panel	6
7.	I/F time-out (no response) between the printer and an optional tray (High Capacity Second Paper Feeder, Power envelope feeder)	5
8.	Messages cannot be received through the parallel interface.	7
9.	Data cannot be received through the OKI HSP interface.	8

Note: When replacing the Main board, install the EEPROM from the old Main board, onto the new Main board.

From 1-2 on the preceding page



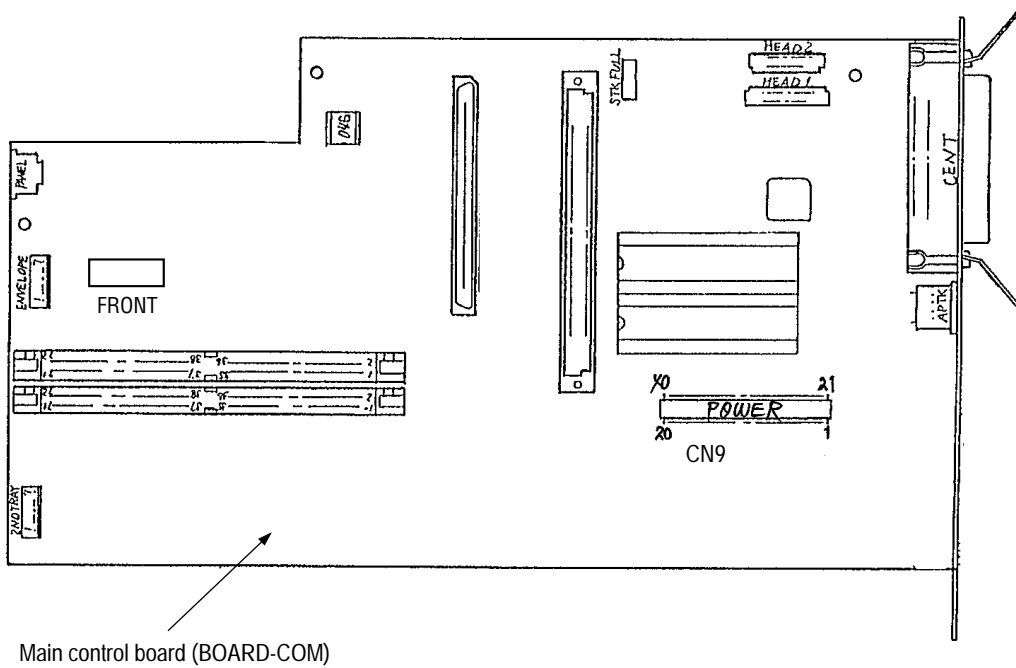


Fig. 6-1 Connector and Pin Location

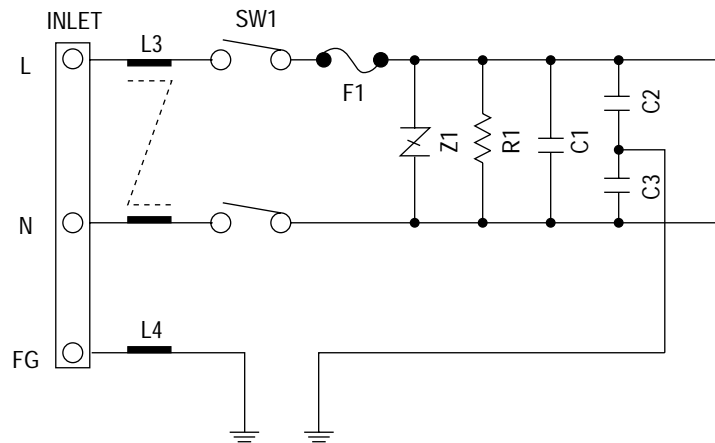


Fig. 6-2 Measurement by a Multimeter

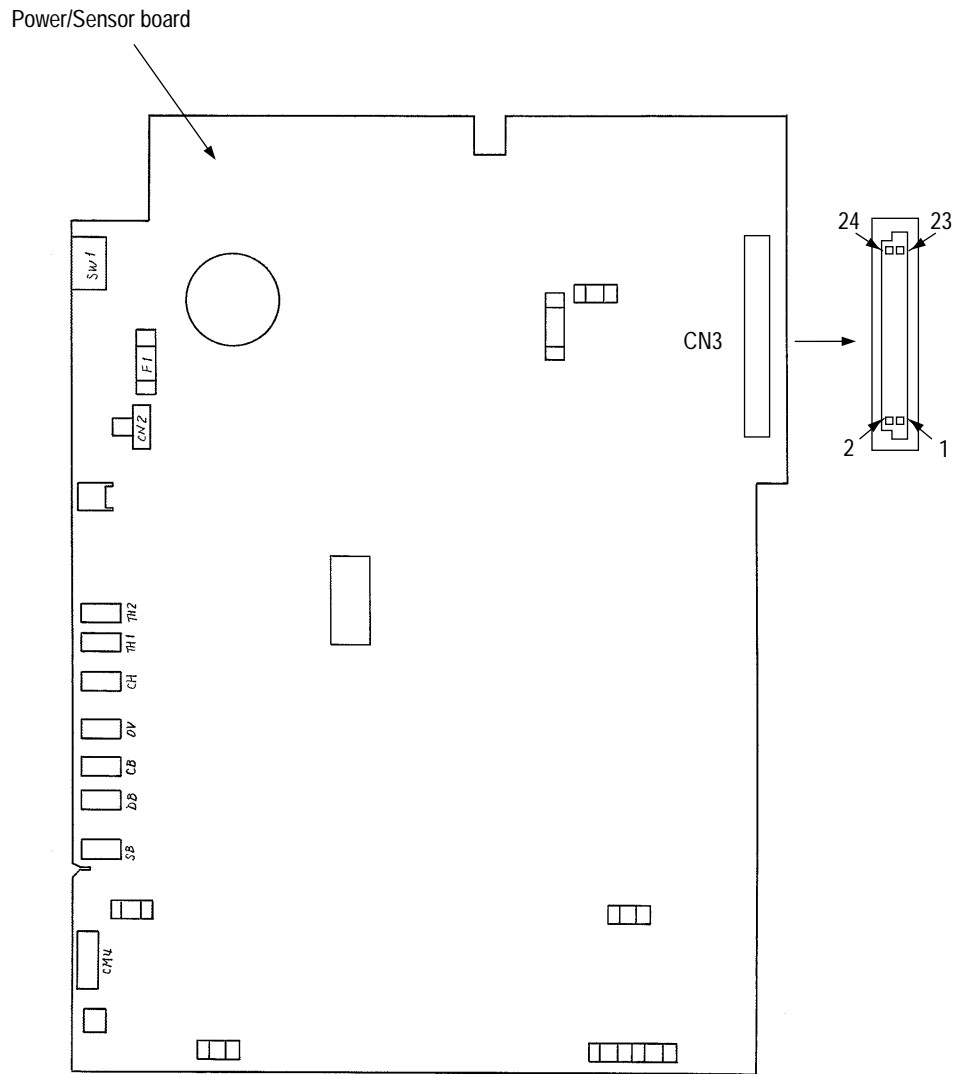
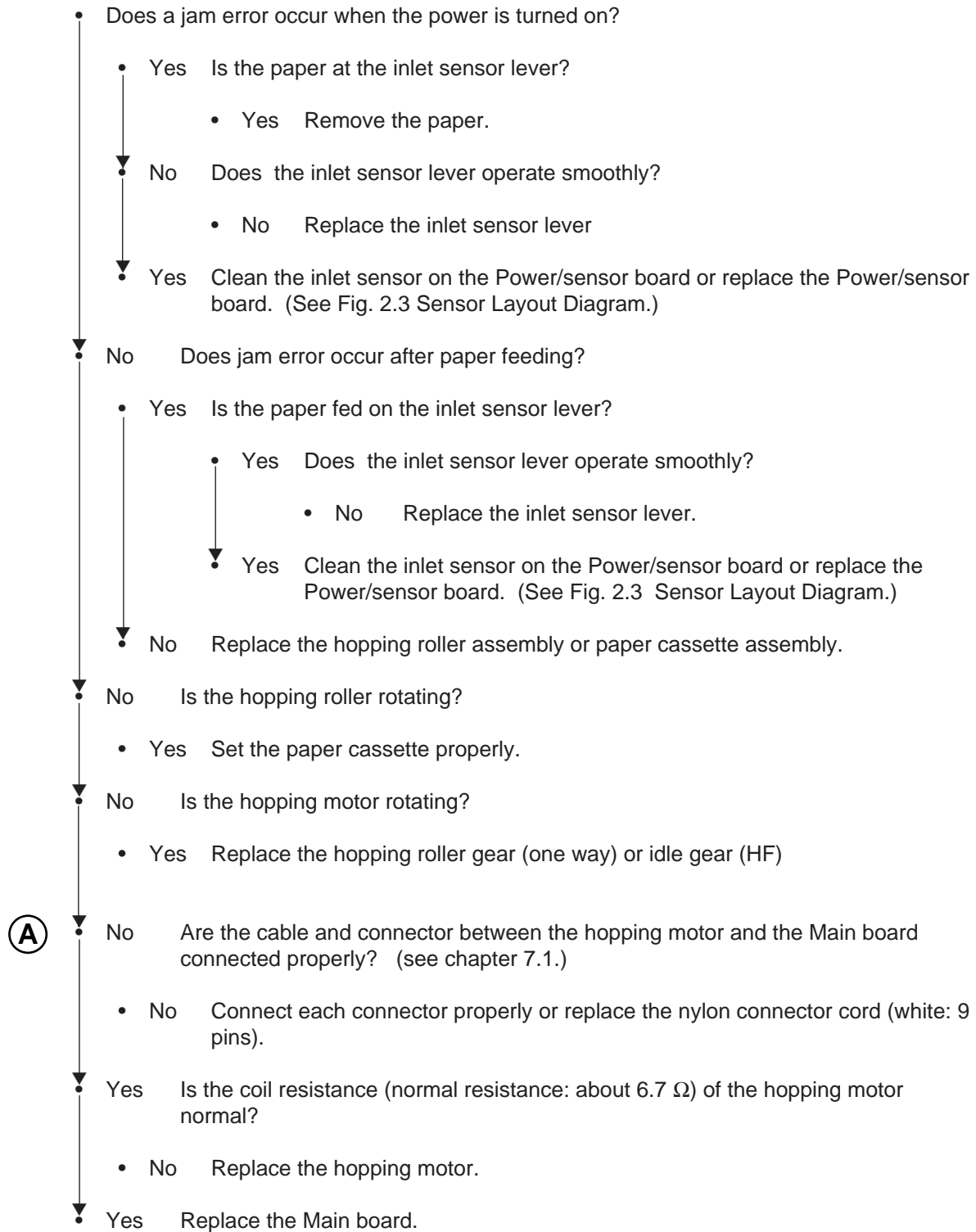


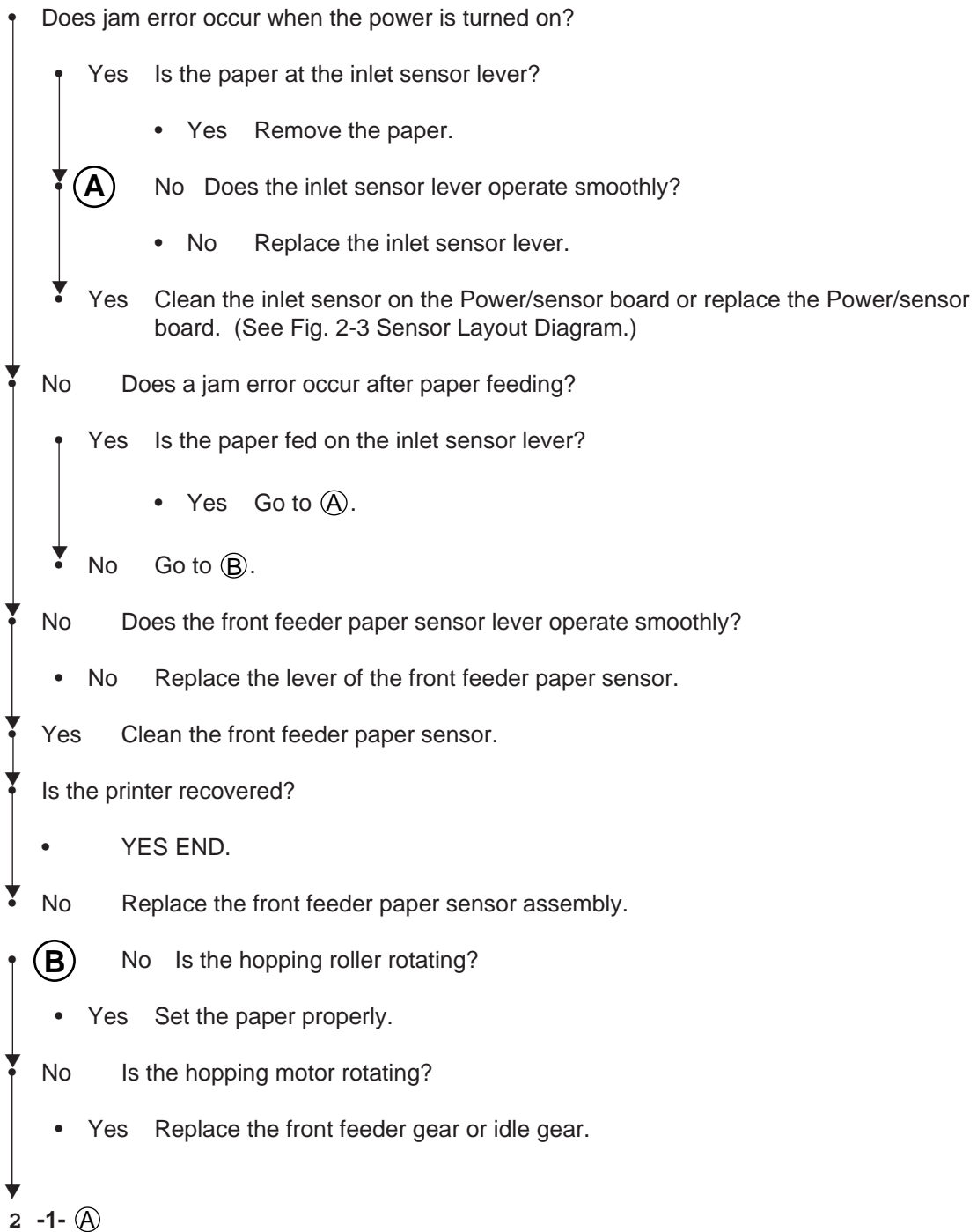
Fig. 6-3 Connector and Pin Location

[JAM error]

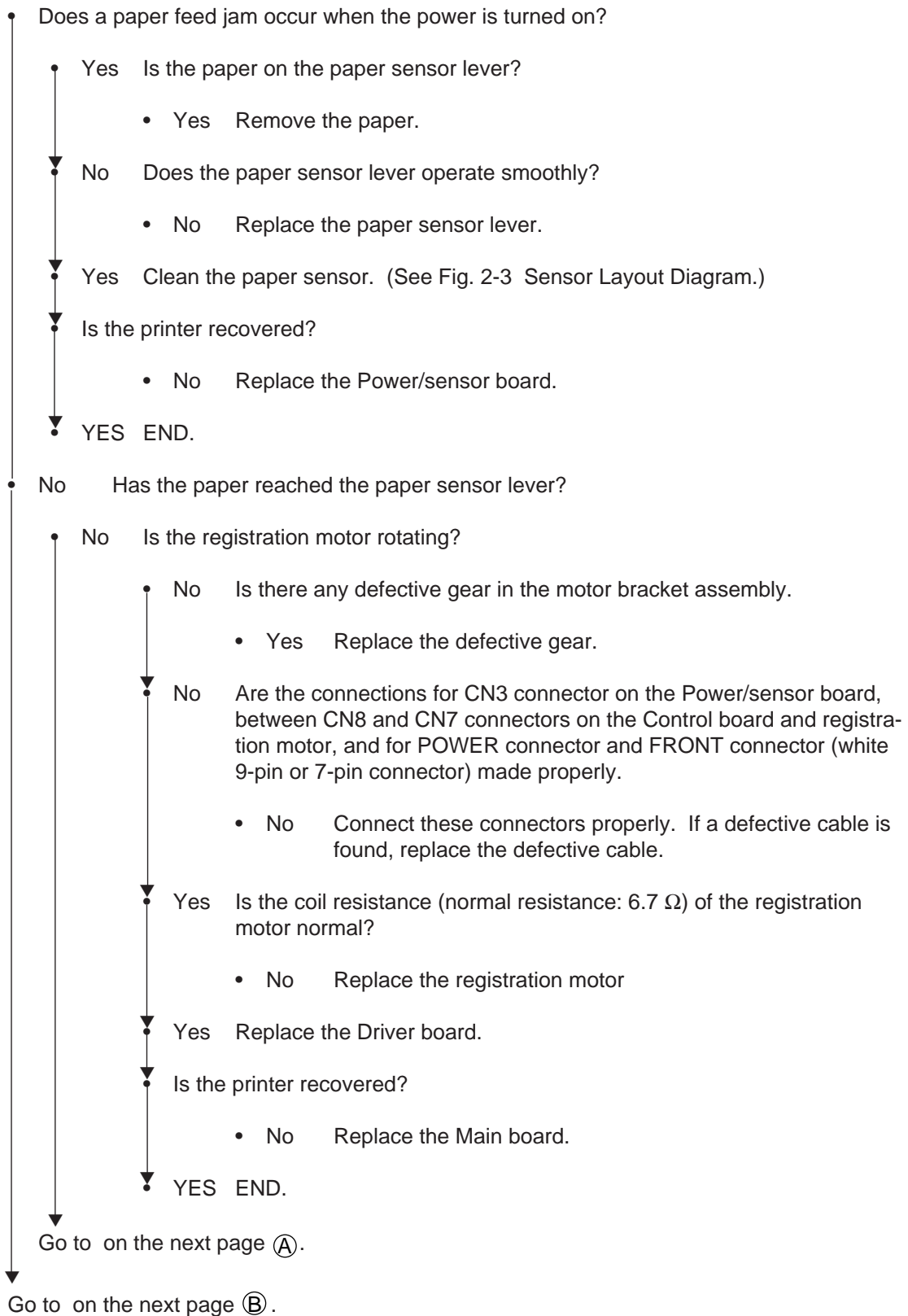
2-1 Paper input jam (1st tray)



2 -2 Paper input jam (front feeder)



2 -3 Paper feed jam



From on the preceding page ②.

From on the preceding page ①.

▼ Yes Is the image drum set properly?

- No Set the image drum properly.

▼ Yes In case of paper feed from the front feeder, check the hopping roller of the front feeder assembly. In case of paper feed from the tray, check the hopping roller assembly and the tray.

▼ Yes Has the paper reached the outlet sensor lever?

• Yes Does the outlet sensor lever operate smoothly?

- No Replace the outlet sensor lever.

▼ Yes Clean the outlet sensor on the Power/sensor board. (See Fig. 2-3 Sensor Layout Diagram.)

▼ Is the printer recovered?

- No Replace the Power/sensor board.

▼ YES END.

▼ No Is the drum motor rotating?

• No Is there any defective gear in the motor bracket assembly?

- Yes Replace the defective gear.

▼ No Are the connections for CN3 connector on the Power/sensor board between CN8 and CN6 connectors and drum motor, and for POWER connector and FRONT connector (white 9-pin or 7-pin connector) on the Control board made properly?

- No Connect these connectors properly.

▼ Yes Is the coil resistance (normal resistance between pins 1 and 2, between pins 3 and 4 : 4.3 Ω) of the drum motor normal?

- No Replace the drum motor.

▼ Yes Replace the driver board.

▼ Is the printer recovered?

- No Replace the Main board.

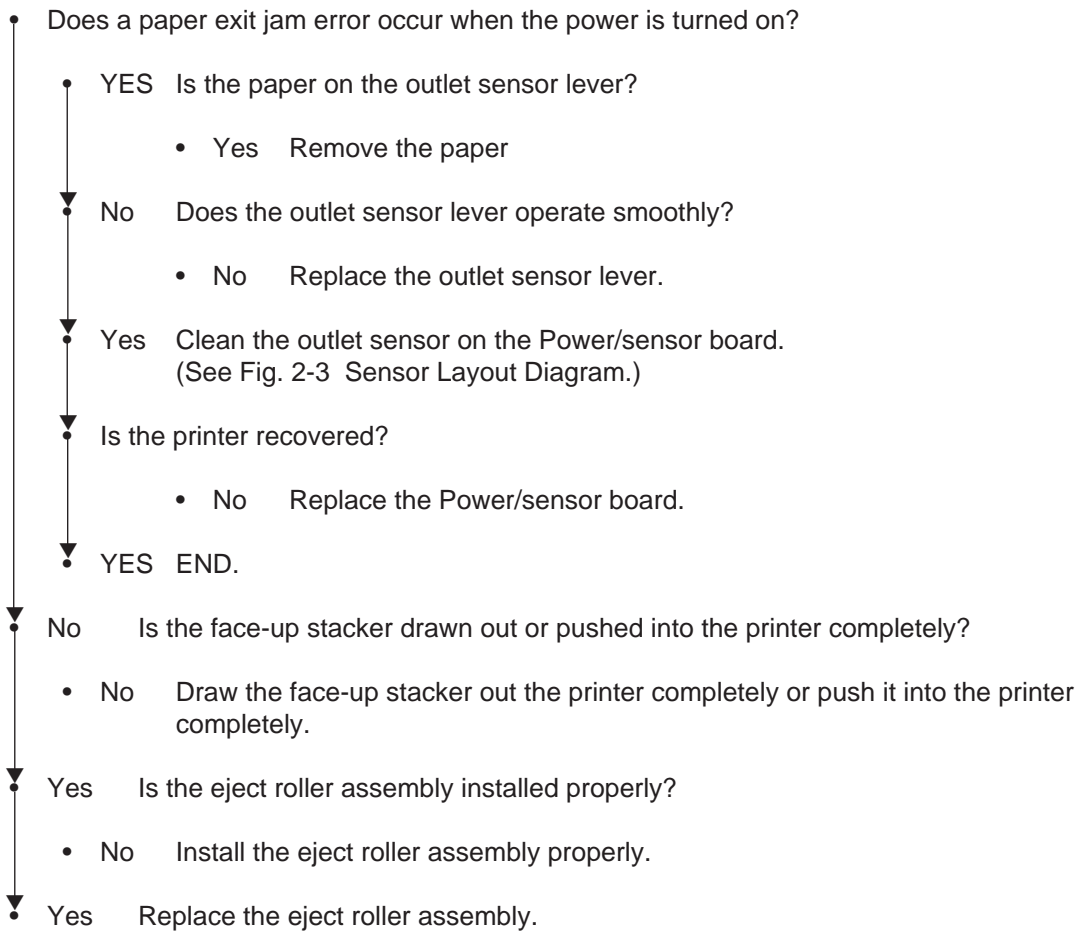
▼ YES END.

▼ Go to on the next page ①.

From on the preceding page ①.

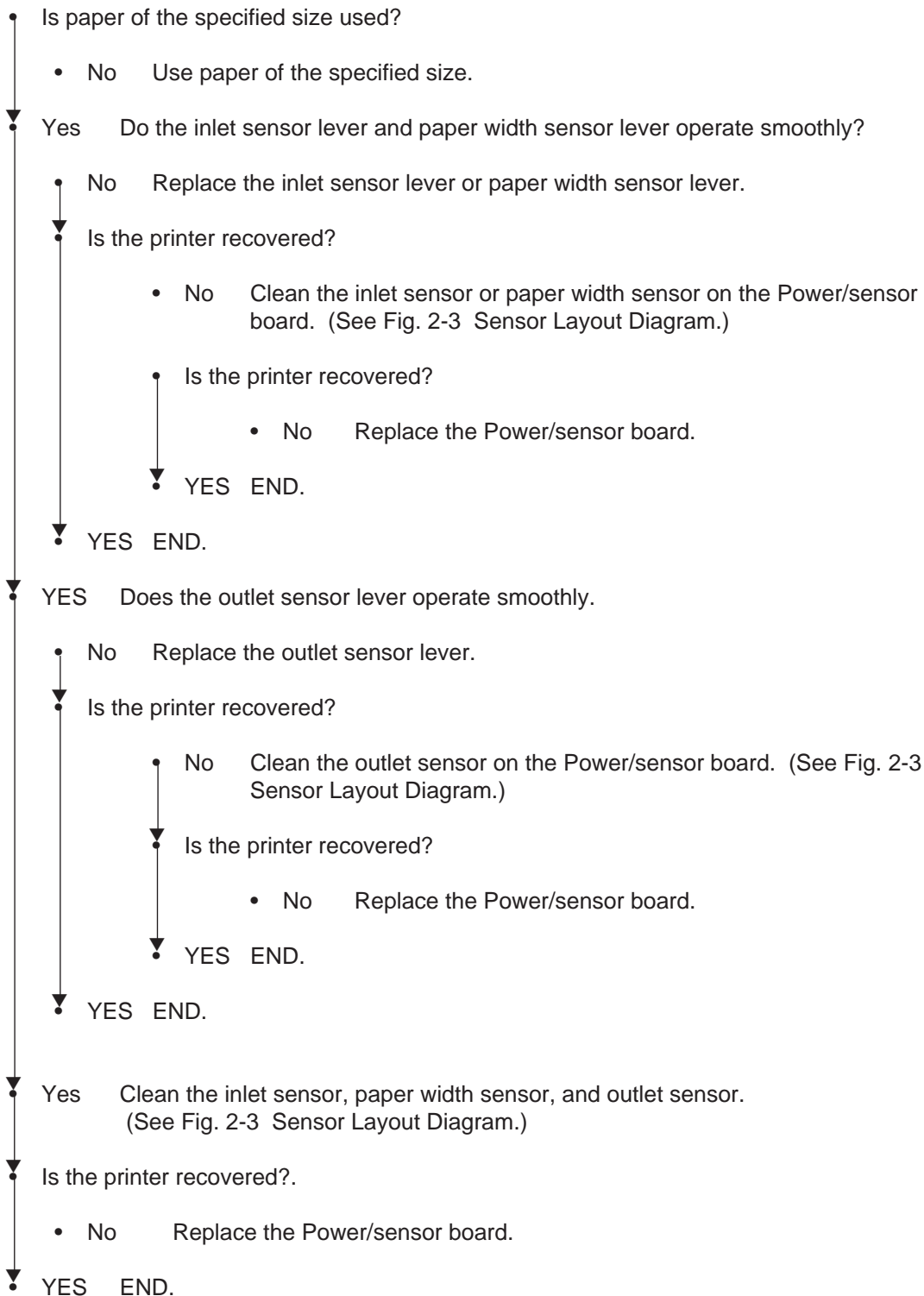
- ▼ Yes Is the transfer roller rotating smoothly?
 - No Is there any defective gear of the transfer roller?
 - Yes Replace the defective gear.
 - ▼ No Replace the transfer roller.
- ▼ Yes Is the fuser unit installed properly?
 - No Install the fuser unit properly.
- ▼ Yes Is the image drum cartridge set properly?
 - No Set the image drum cartridge properly.
- ▼ Yes Does the paper sensor lever operate smoothly?
 - No Replace the paper sensor lever.
- ▼ Yes Clean the paper sensor on the Power/sensor board.
(See Fig. 2-3 Sensor Layout Diagram.)
- ▼ Is the printer recovered?
 - No Replace the Power/sensor board.
- ▼ YES END.

2 -4 Paper exit jam

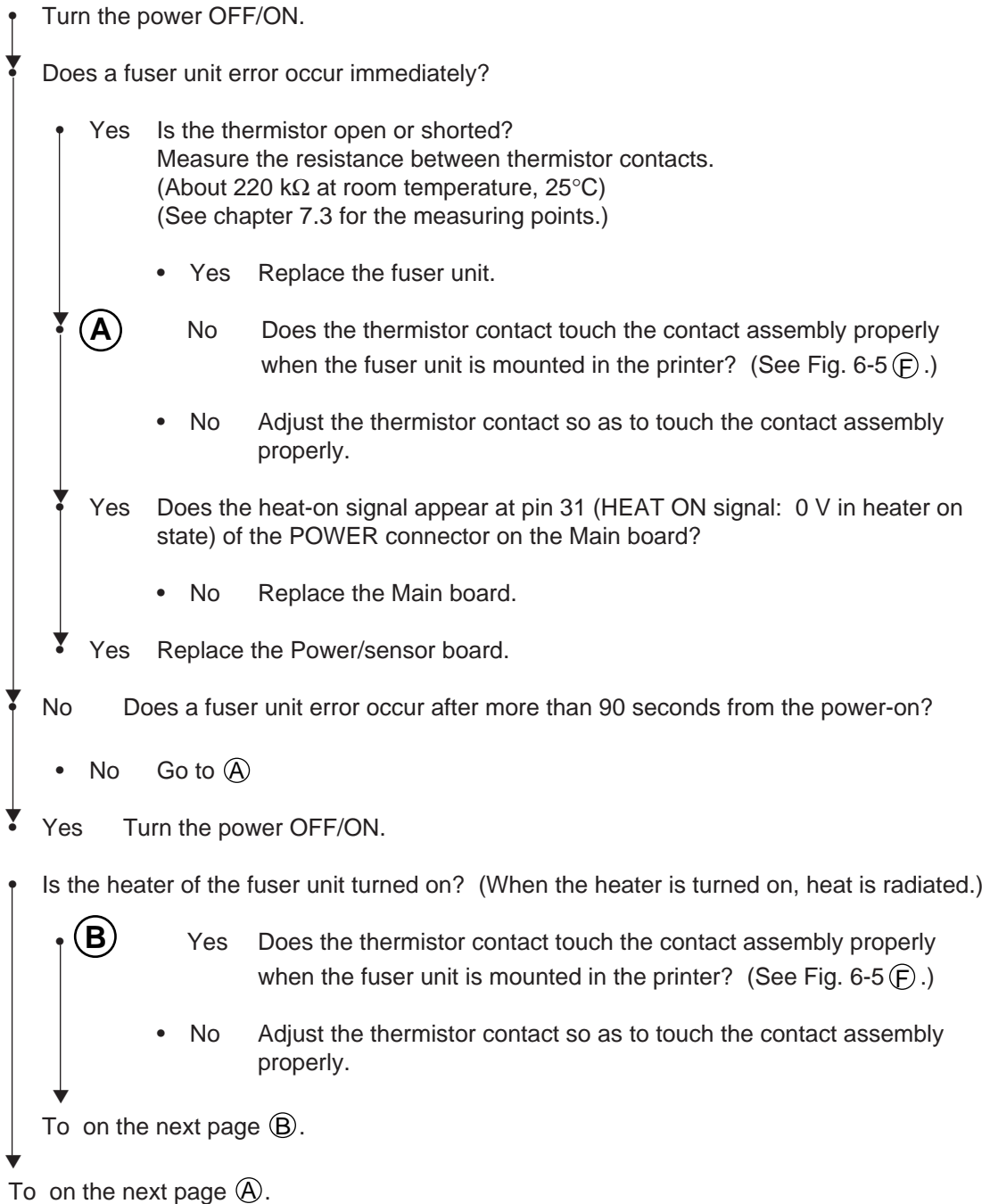


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3 Paper size error



4 Fuser unit error (ERROR 71), (ERROR 72), (ERROR 73)



From on the preceding page (A).

From on the preceding page (B).

• Yes Replace the fuser unit.

▼ Is the printer recovered?

• No Replace the Power/sensor board or Control board.

▼ YES END.

▼ No Is the heater or thermistor open?
Measure the resistance between the heater contacts (normal resistance: 220 kΩ (25°C) between pins 1 and 2, 2.3 Ω (120 V) and 8.5 Ω (240 V) between pins 3 and 4) (See chapter 7.3.)

• Yes Replace the fuser unit.

▼ No Is the AC voltage applied to the CN2 connector on the Power/sensor board? (See Fig. 4.)

• No Is CN2 connector connected to the Power/sensor board?

• No Connect the CN2 connector to the Power/sensor board properly.

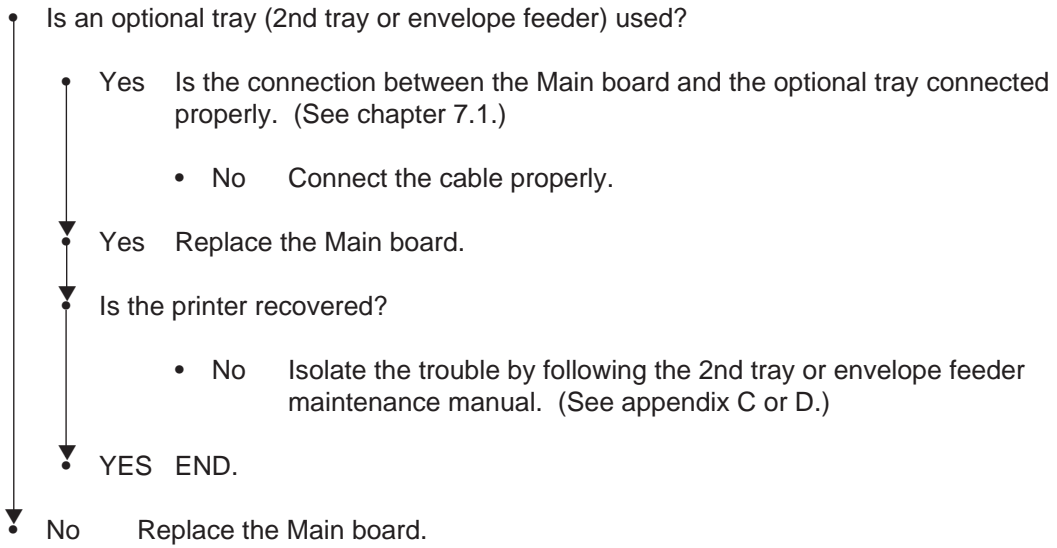
▼ Yes Is Pin 31 (HEAT ON signal) of the POWER connector of the Main board turned on? (In heater on state, this pin is set to 0 V).

• No Replace the Main board.

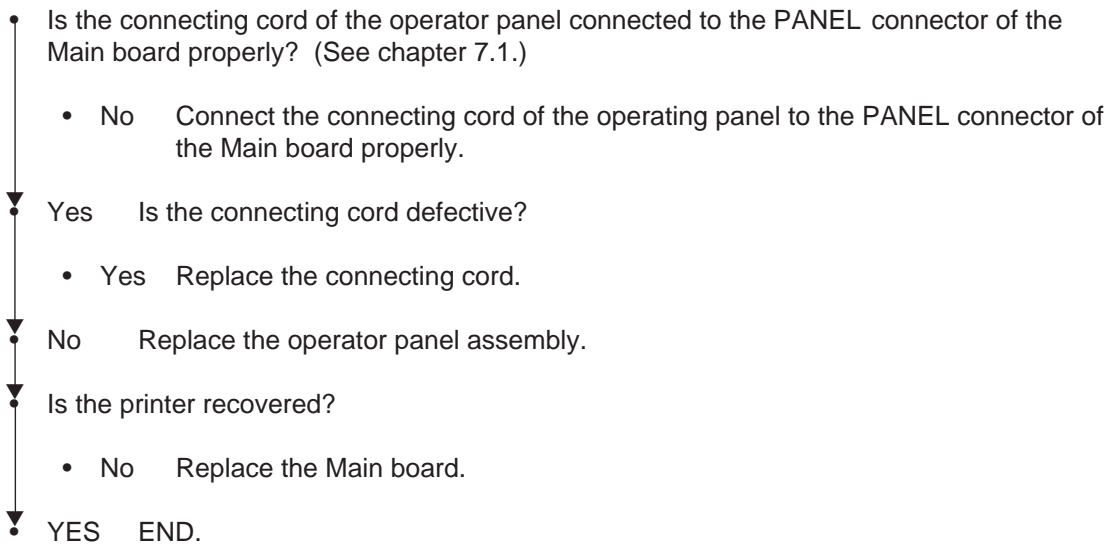
▼ Yes Replace the Power/sensor board.

▼ YES Go to (B).

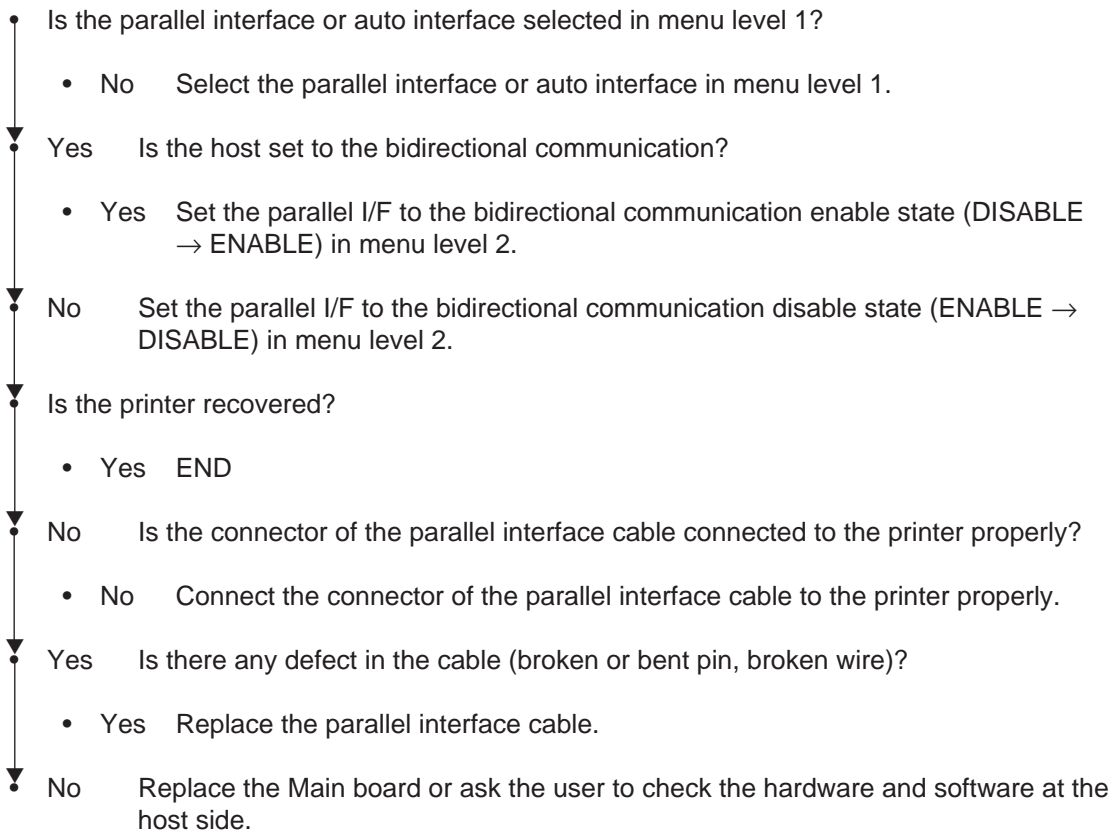
5 I/F time-out between printer and optional tray (ERROR 81)



6 I/F time-out occurs between the printer and the operator panel (ERROR 80) .



7 Communications with the host cannot be performed via the parallel interface.



8 Data cannot be received through the OKI HSP interface

- Is the interface board (option) connected to the OKI HSP interface connector on the Main board properly?
 - No Connect the interface board (option) to the OKI HSP interface connector properly.
- ▼ Yes Is there any broken or bent pin in the interface board (option)?
 - Yes Ask the user to replace the interface board (option).
- ▼ No Replace the Main board.
- ▼ OK?
 - No A trouble may exist in the interface board (option), interface cable or host side. Ask the user to check these items.

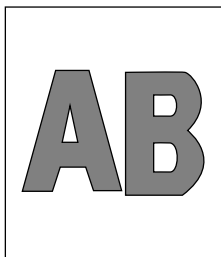
9 Synchronous serial I/O error (ERROR 74)

- Are POWER connector of the Main board and CN9 connector on the Driver board connected properly?
Are CN8 connector on the Driver board and CN3 connector of the Power/sensor board connected properly?
 - No Connect the connectors properly.
- ▼ Yes Is there +30V on pins 19 and 20 of POWER connector on the main board?
 - No Replace the Power/sensor board.
- ▼ Yes Replace the Main board.
- ▼ Is the printer recovered?
 - No Replace the Power/sensor board.
- ▼ Yes END.

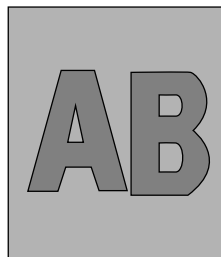
6.5.3 Image troubleshooting

Procedures for troubleshooting if abnormal images have been printed out are explained below. Figure 6-3 below shows typical abnormal images.

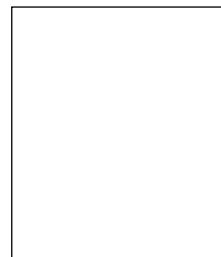
Trouble	Flowchart number
Images are light or blurred as a whole (Figure 6-4, A)	1
Dark background density (Figure 6-4, B)	2
Blank paper is output (Figure 6-4, C)	3
Black stripes in the vertical direction (Figure 6-4, D)	4
Cyclical defect (Figure 6-4, E)	5
Print voids	6
Poor fusing (images are blurred or peeled off when touched by hands)	7
White streaks in the vertical direction (Figure 6-4, F)	8
Snowy print of high density pattern (Figure 6-4, H)	9
Blockly faded print (Figure 6-4, I)	0



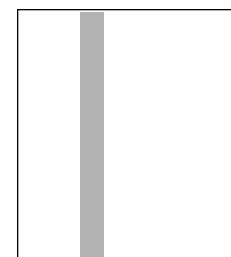
A Light or blurred images as a whole



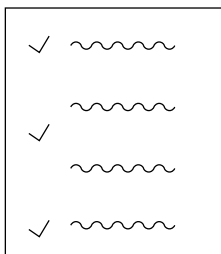
B Dark background density



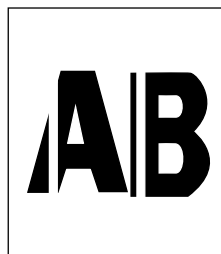
C Blank paper



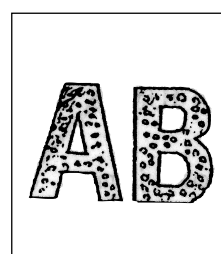
D Black stripes in the vertical direction



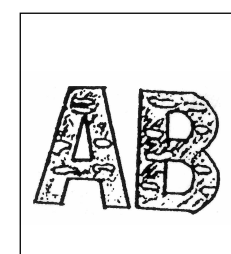
E Cyclical defect



F White belts or streaks in the vertical direction



H Snowy print of high density pattern



I Blockly faded print

Fig. 6-4 Abnormal images

1 Image are light or blurred

- Is toner low? (Is the TONER LOW message displayed?)
 - Yes Supply toner.
- ▼
- No Is paper of the specified grade 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 installed properly? (Check connector HEAD1 (14P), HEAD2 (12P) of the Main 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 contacted with the contact assembly of the power/sensor board properly? (See Figure 6-6.)
 - No Make the contact plate of the transfer roller contact with the power/sensor board and Shaft of the transfer roller properly.
- ▼
- Yes Are the contact of the developing roller and the contact of the toner supply roller of the image drum cartridge contacted with the contact assembly properly? (See Figure 6-5 (A) and (B).)
 - No Adjust the contacts of the developing and toner supply roller to contact the contact assembly properly.
- ▼
- Yes Replace the transfer roller. (See 3.3.36.)
- ▼
- Has the trouble been removed?
 - Yes End
- ▼
- No Replace the image drum cartridge.
- ▼
- Has the trouble been removed?
 - 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. (Refer to User's Manual.)
- ▼
- No Replace the Main board or Power/Sensor board.

2 Dark background density

- Has the image drum been exposed to external light?
 - Yes Mount the image drum in the printer and wait for about 30 minutes.
- ▼
- 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 contacted with e contact assembly properly? (See Figure 6-5 ©.)
 - No Adjust the contact of the cleaning roller to contact the contact assembly properly.
- ▼
- Yes Replace the image drum cartridge.
- Has the trouble been removed?
 - 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. (Refer to User's Manual.)
- ▼
- No Replace the Main board Power/Sensor board.

3 Black paper is output.

- Is the LED head connected properly? (Check connector HEAD1 (14P), HEAD2 (12p) on the Main board and PC connector on the LED head.)
 - No Connect the LED head properly or replace the head cable.
- ▼
- Yes Is the contact of the image drum cartridge contacted with the ground contact properly. (See Figure 6-5 ④.)
 - No Check the ground contact of the image drum cartridge.
- ▼
- Yes Check the connectors HEAD1 (14P) and HEAD2 (12P)
 - No Replace the LED head.
- Yes Replace the connector
- Has the trouble been removed.
 - Yes End
- ▼
- **Note:** After replacing the LED head, set the printer in the engine maintenance mode by turning the power on while pressing the FORM FEED and ENTER keys. Set the LED head drive time. (Refer to Section 4.2.)
- ▼
- No Replace the Main board or Power/Sensor board.

4 Black belts or stripes in the vertical direction

- Replace the image drum cartridge.

• Has the trouble been removed?

- 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, (Refer to User's Manual.)

▼
• No Replace the LED head.

• Has the trouble been removed.

- Yes End

Note: After replacing the LED head, set the printer in the engine maintenance mode by pressing the FORM FEED and ENTER keys while powering on the printer . Set the LED head drive time. (Refer to Section 4.2.)

▼
• No Replace the Main board or power/sensor board.

5 Cyclic error

	Frequency	Remedy
Image drum	3.71" (94.2 mm)	Replace or clean the image drum cartridge.
Developing roller	2.50" (63.5 mm)	Replace the image drum cartridge.
Toner supply roller	2.13" (54.0 mm)	Replace the image drum cartridge.
Charging roller	1.73" (43.9 mm)	Replace the image drum cartridge.
Cleaning roller	1.48" (37.6 mm)	Replace the image drum cartridge.
Transfer roller	2.30" (58.4 mm)	Replace the transfer roller.
Heat roller	3.49" (88.5 mm)	Replace the fusing unit assy.
Back-up roller	3.52" (89.5 mm)	Replace the back-up roller.

Notes:

1. 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. (Refer to User's Manual.)
2. After replacing the fusing unit assy, set the printer in the engine maintenance mode by turning the power on while pressing the FORM FEED and ENTER keys, and reset the fuser counter. (Refer to See 4.1.)

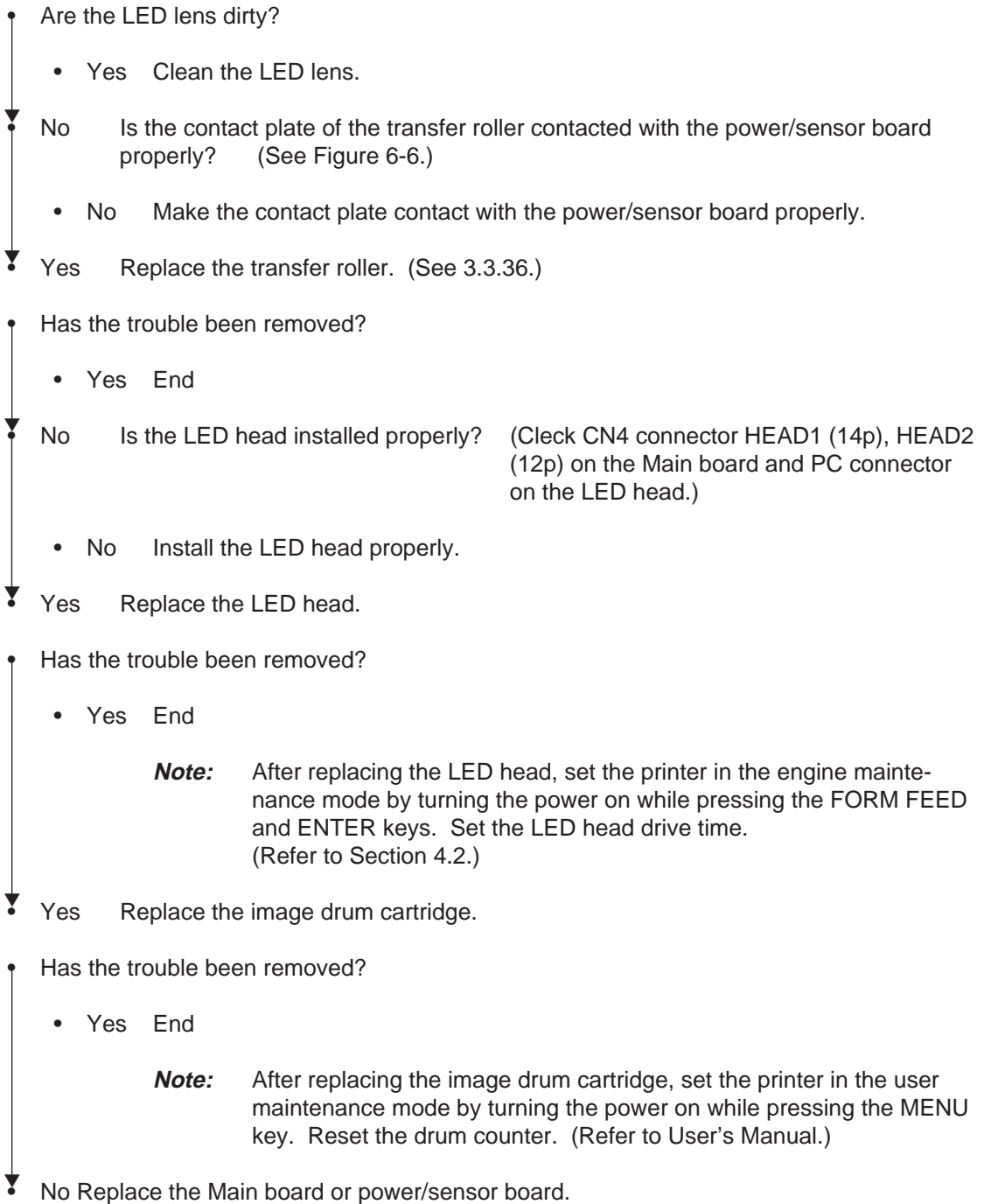
6 Print voids

- Is the contact plate of the transfer roller contacted with the power/sensor board properly? (See Figure 6-5.)
 - No Adjust the contact plate contact to contact the power/sensor board properly and the shaft of the transfer roller.
- Yes Replace the transfer roller. (See 3.3.36.)
- Has the trouble been removed?
 - Yes End
- No Are the contacts of the toner supply roller, developing roller, image drum and charging roller contacted with the contact assy properly? (See Figure 6-5 (A), (B), (C), (D), (E).)
 - No Adjust the contacts to contact the contact assy properly.
- Yes Replace the image drum cartridge.
- Has the trouble been removed?
 - 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. (Refer to User's Manual.)
- No Is the LED head installed properly? (Check connector HEAD1(14p), HEAD2 (12p) on the Main board and PC Connector on the LED head.)
 - No Install the LED head properly.
- Yes Replace the LED head or the head cable.
- Has the trouble been removed?
 - Yes End
 - Note:** After replacing the LED head, set the printer in the engine maintenance mode by turning the power on while pressing the FORM FEED and ENTER keys. Set the LED head drive time. (Refer to Section 4.2.)
- No Replace the Main board or Power/sensor board.

7 Poor fusing

- Is paper of the specified grade used?
 - No Use paper of the specified grade.
- ▼
- Yes Is the spring of the back-up roller normal?
 - No Replace the spring.
- ▼
- Yes Is the contact of the fusing unit assy contacted with the contact assy properly?
(See Figure 6-5 ©.)
 - No Adjust the contact of the fusing unit assy to contact the contact assembly properly.
- ▼
- Yes Replace the fusing unit assy.
- ▼
- Has the trouble been removed?
 - Yes End
- ▼
- No Replace the Main board or power/sensor board.

8 White belts or streaks in the vertical direction



9 Snowy print of high density pattern

- Is toner low?
 - Yes Supply toner.
- ▼
- No Is paper of the specified grade used?
 - No Use paper of the specified grade.
- ▼
- Yes Is the lens of the LED head dirty?
 - Yes Clear the lens.
- ▼
- No Is the LED head installed properly?
 - No Install the head properly.
- ▼
- Yes Increase the printer setting number ($\pm 0 \rightarrow +1$) (Refer to User's manual.)

10 Blockly faded print

- Is toner low?
 - Yes Supply toner.
- ▼
- No Is paper of the specified grade used?
 - No Use paper of the specified grade.
- ▼
- Yes Is the lens of the LED head dirty?
 - Yes Clear the lens.
- ▼
- No Is the LED head installed properly?
 - No Install the head properly.
- ▼
- Yes Decrease the printer setting number ($\pm 0 \rightarrow -1$) (Refer to User's manual.)

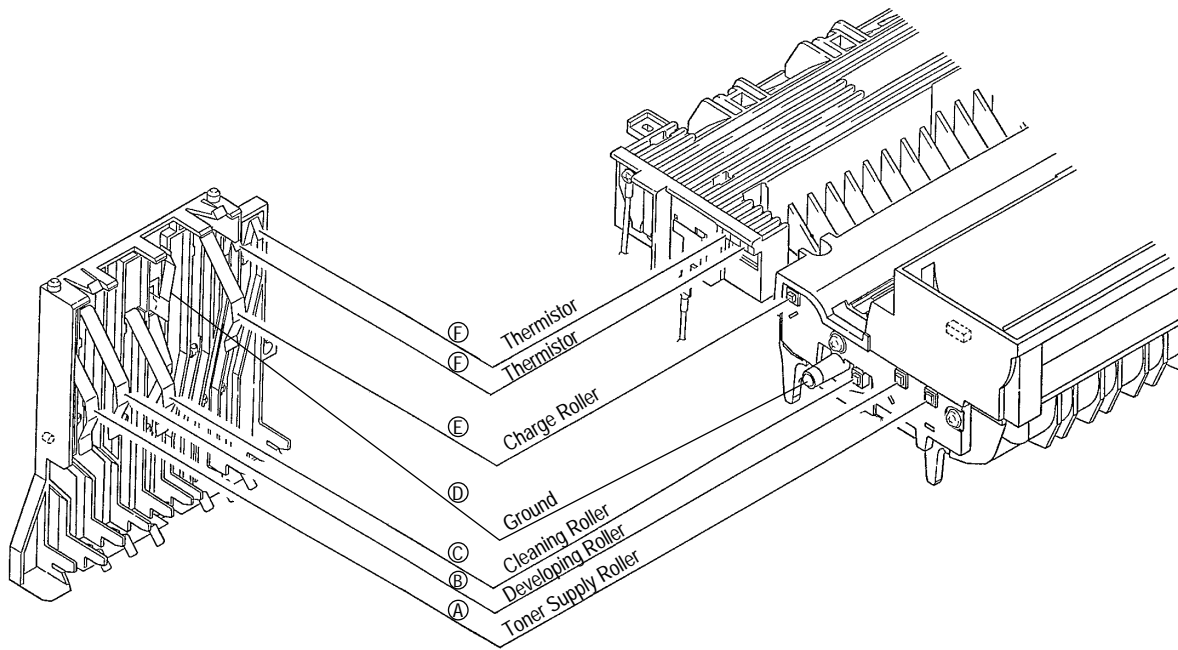


Figure 6-5

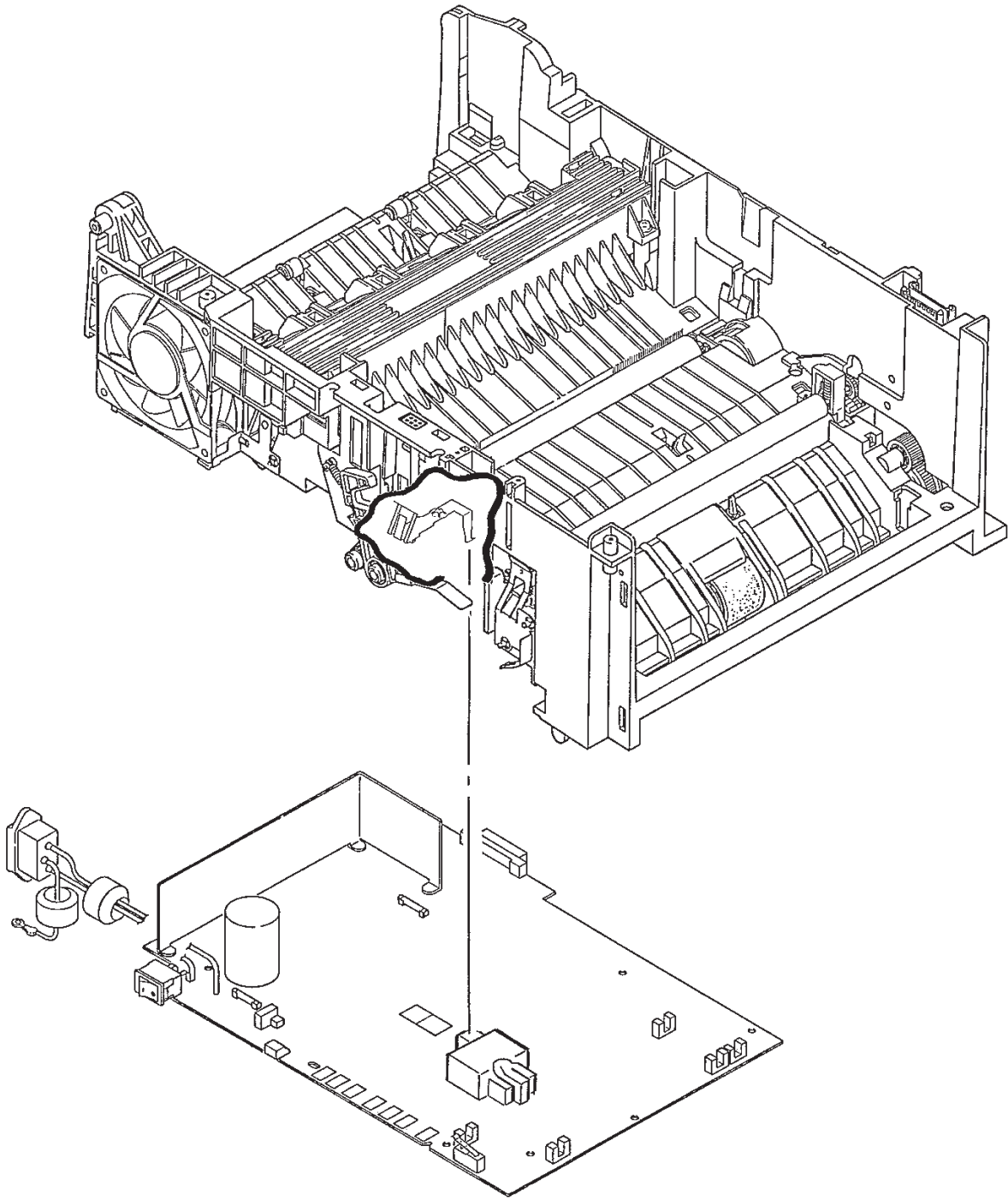
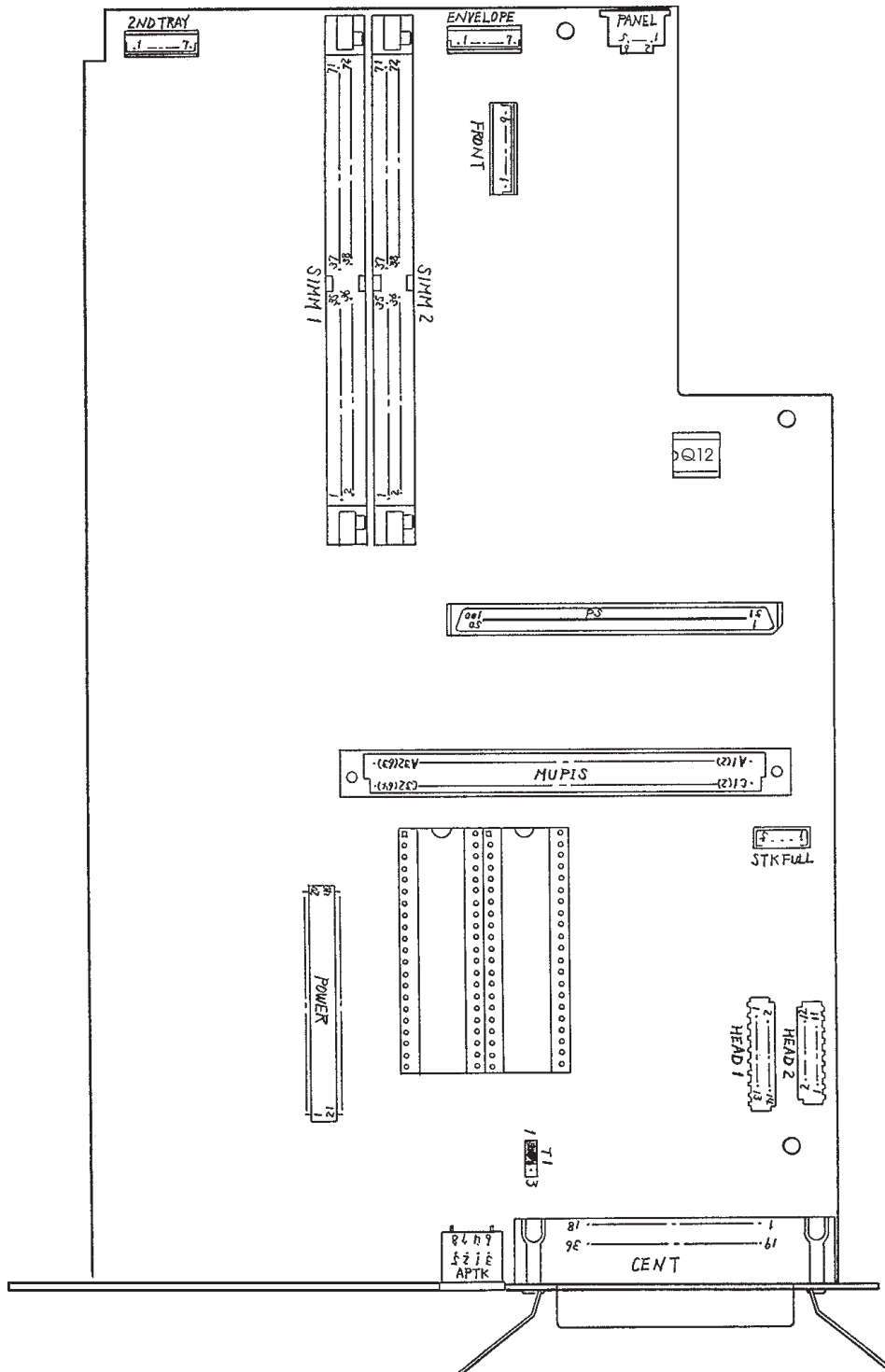


Figure 6-6

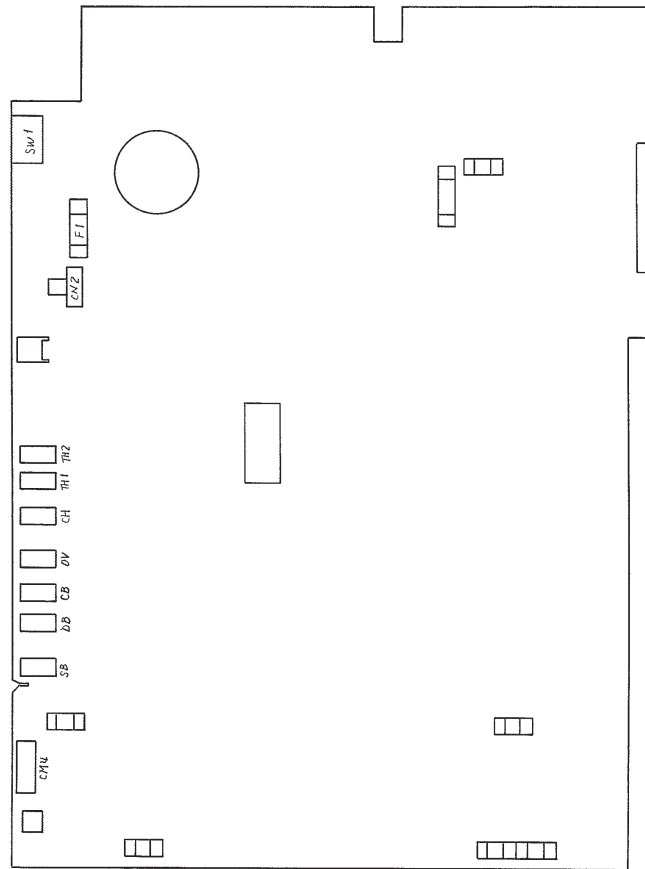
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7.2 PCB Layout

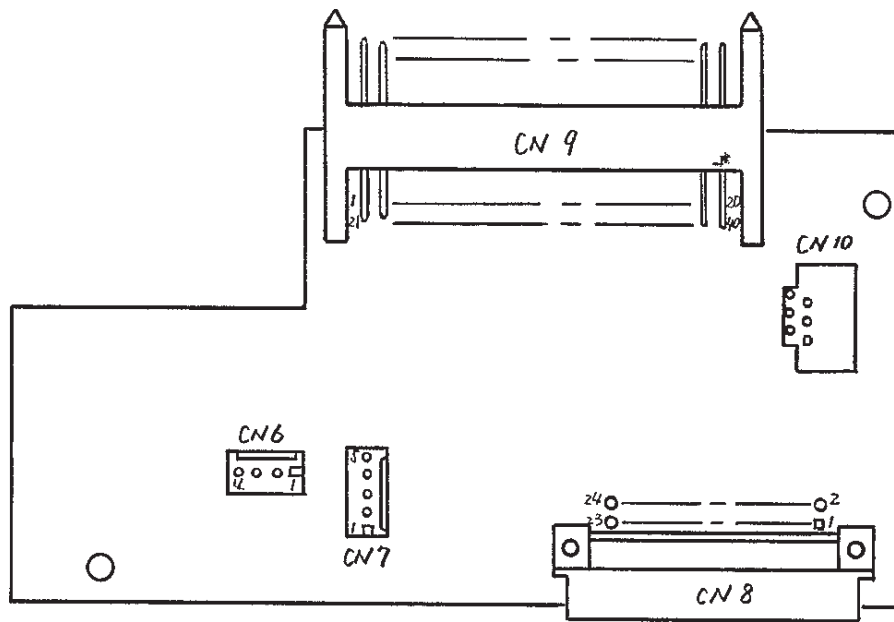
(1) Main board (BOARD-COM)



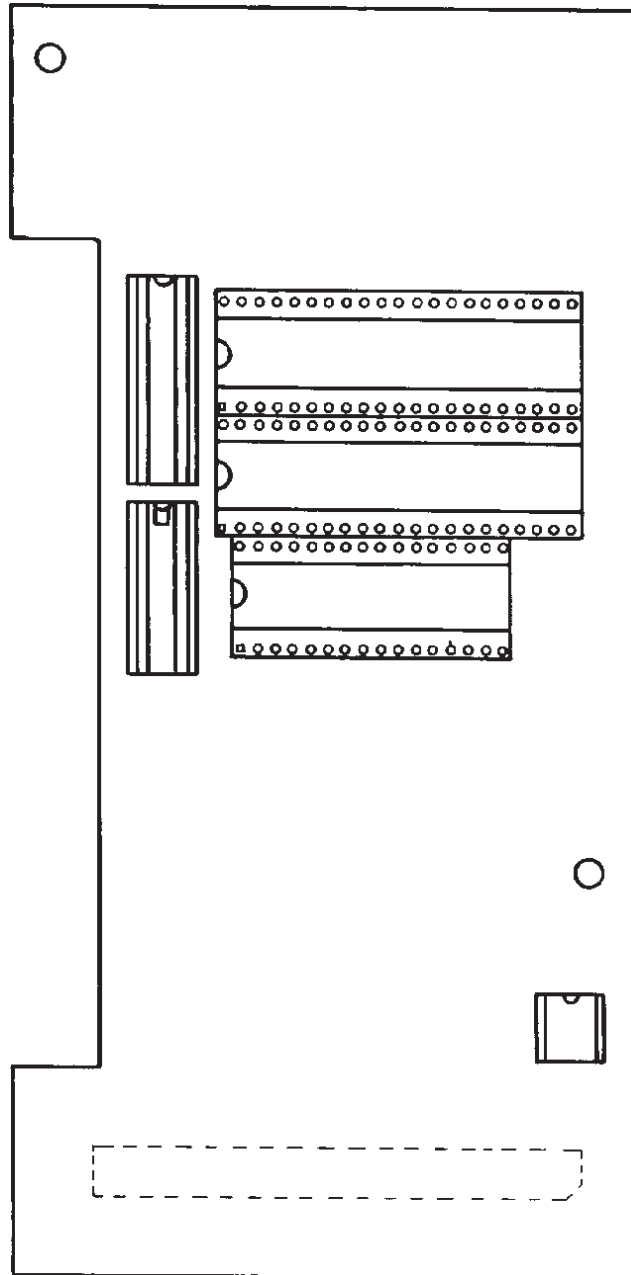
(2) Power Supply board



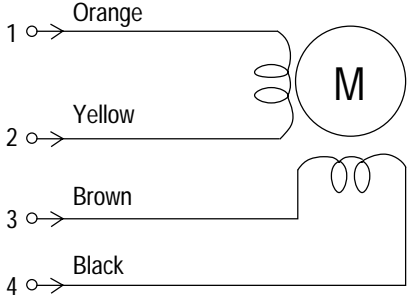
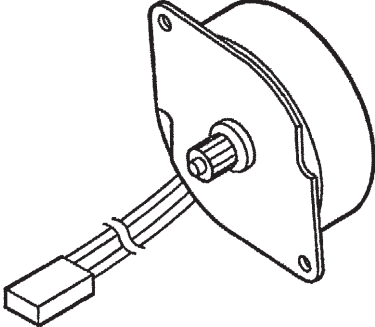
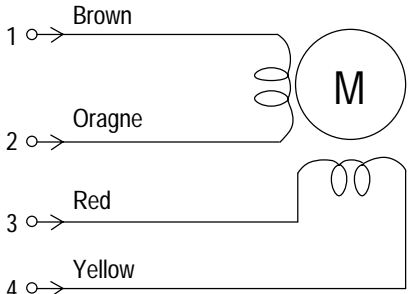
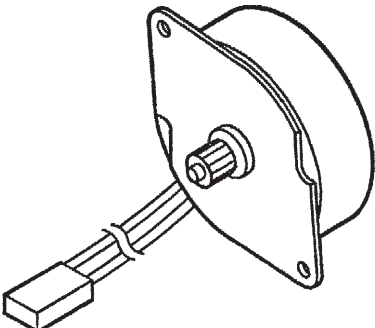
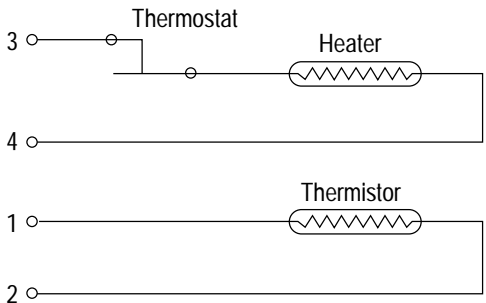
(3) Driver board (AOLC-PCB)

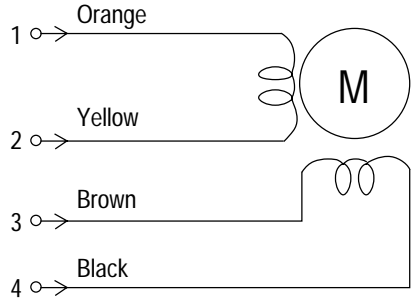
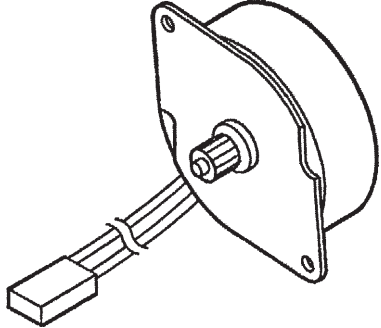
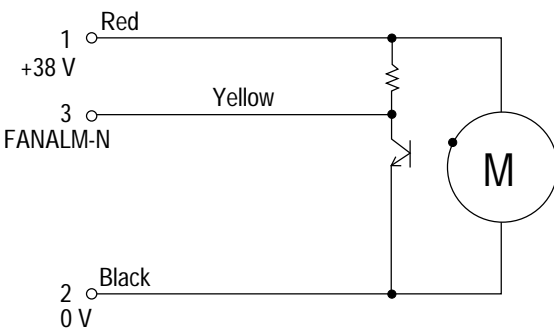
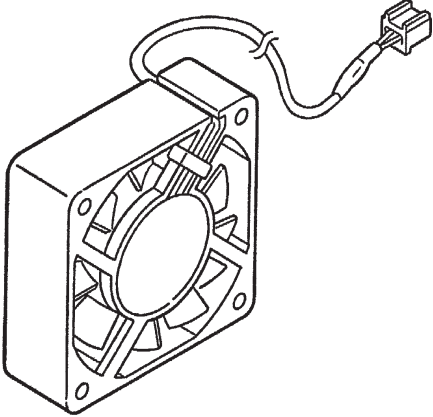


(4) PostScript board (BOARD-PSBA) (OKIPAGE16n/PS only)



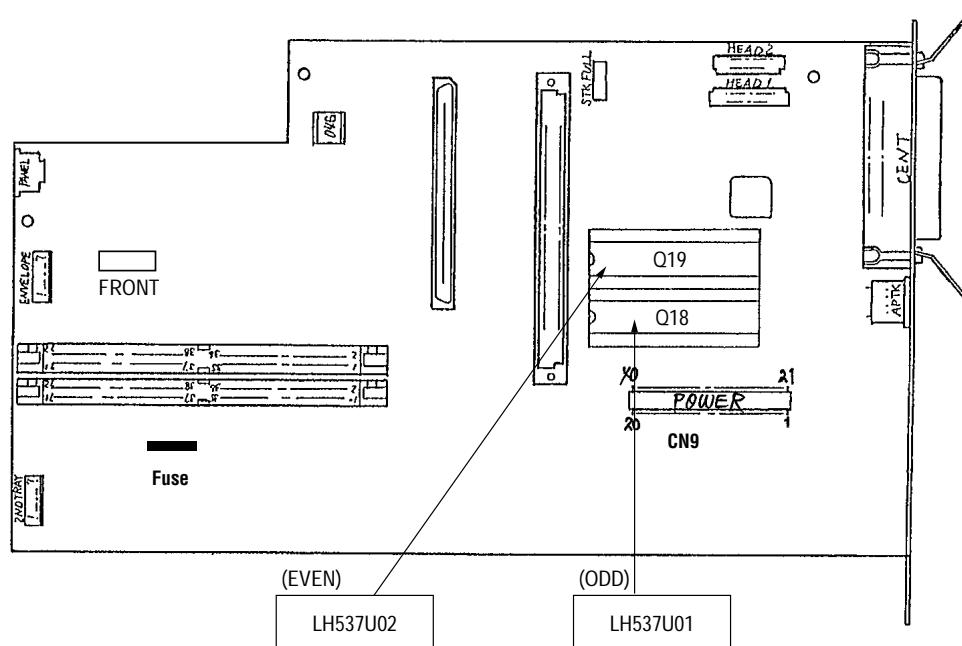
7.3 Resistance Check

Unit	Circuit Diagram	Illustration	Resistance
Registration motor			<p>Between pins 1 and 2: 6.7Ω Between pins 3 and 4: 6.7Ω</p>
Drum motor			<p>Between pins 1 and 2: 4.3Ω Between pins 3 and 4: 4.3Ω</p>
Fusing Unit			<p>Between pins 1 and 2: 220kΩ (at 25°C) Between pins 3 and 4: 2.3Ω (120V) 8.5Ω (240V)</p>

Unit	Circuit Diagram	Illustration	Resistance
Hopping motor			<p>Between pins 1 and 2: 6.7Ω Between pins 3 and 4: 6.7Ω</p>
Fan			<p>Between pins 1 and 2: $4.9K\Omega$</p>

7.4 Program/Font ROM Location

(1) BOARD-COM



NOTE:

If the fuse on this board opens, the operator panel display will display the message INPUT JAM TRAY 1.

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8. PARTS LIST

Overview

This section will assist you in identifying the assemblies and parts of the product. Use Section Six (Troubleshooting) to determine the defective part(s). Locate the part and its part number in this section.

Current Part Numbers

Okidata has made every effort to include current part numbers in this Service Manual at the time of publication.

However, technical information frequently changes. These changes often include new or modified parts, with new or modified part numbers.

Please refer to the following resources for current part numbers and pricing.

Okilink II

Okilink II is an Electronic Bulletin Board Service, which contains current part numbers, prices, and recommended stocking levels for each item listed as a recommended spare part. For instructions on accessing Okilink II, refer to the Service Center Reference Guide, which is sent to your Dealership as part of the Service Authorization process.

Faxable Facts

Faxable Facts is an automated fax document retrieval system. Part numbers and pricing are available through Faxable Facts. For instructions on accessing Faxable Facts, refer to the Service Center Reference Guide, which is sent to your Dealership as part of the Service Authorization process.

www.okidata.com

This is the address for Okidata's home page on the Internet. For more information about Okidata's home page, refer to the Service Center Reference Guide, which is sent to your Dealership as part of the Service Authorization process.

Dealer Technical Support

This is a telephone support line reserved for Authorized Dealers. Part numbers and pricing are available through this group. For instructions on accessing Dealer Technical Support, refer to the Service Center Reference Guide, which is sent to your Dealership as part of the Service Authorization process.

Printer Unit (Figure 8-1)

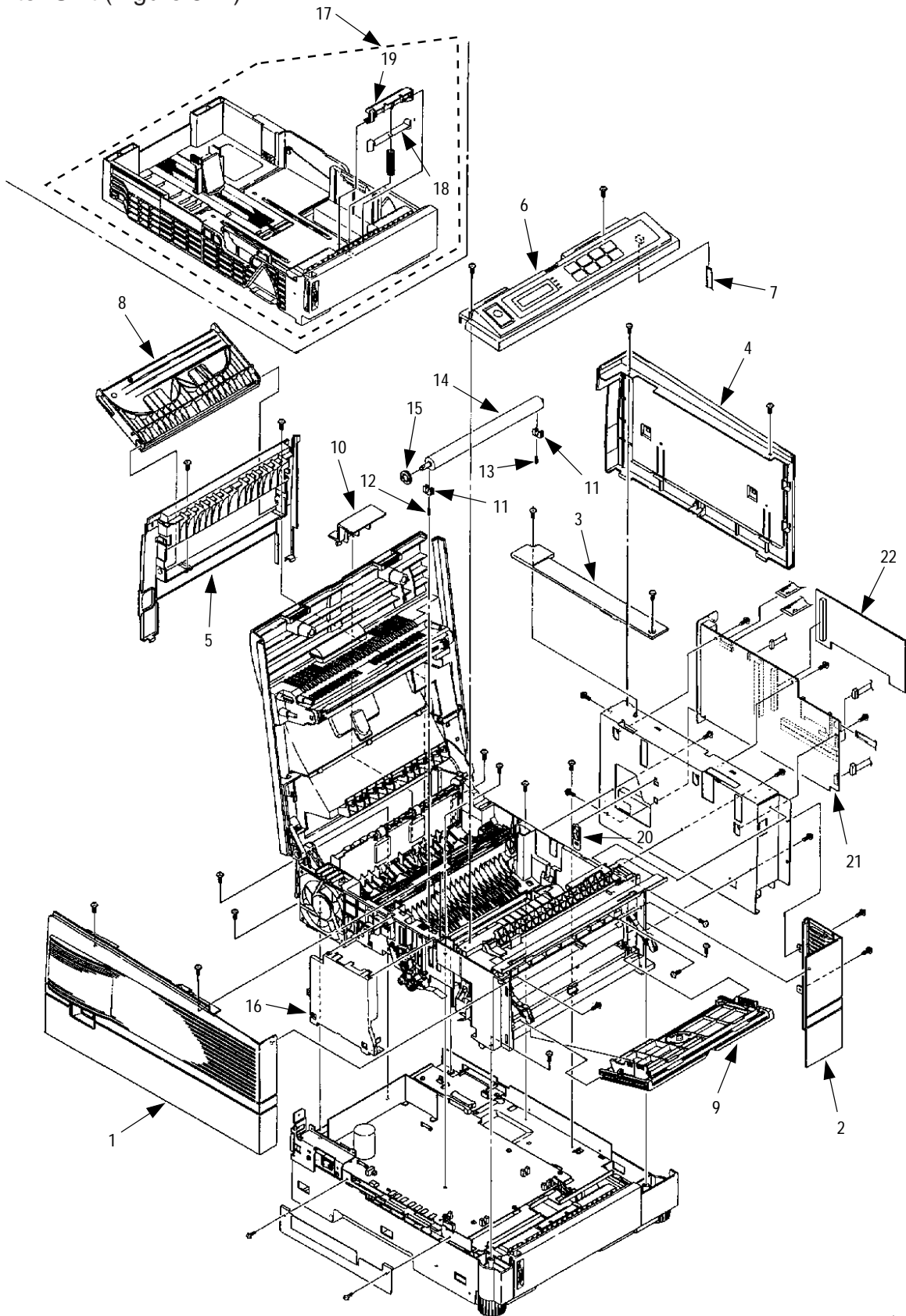


Table 8-1 Printer Unit

	Name / Rating	Parts No.	Q'ty	Q'ty			Remarks
				50	500	1000	
1	Cover: Side L (Assy)	3PP4128-1118G1	1	1	3	6	53073501
2	Cover: Side R (Assy)	1PP4128-1065P1	1	1	3	6	53073601
3	Cover: Frame	40033501	1	1	3	6	40033501
4	Cover: I/F (Assy)	2PA4128-1066G1	1	1	3	6	53073801
5	Cover: Rear	1PP4128-1069P1	1	1	3	6	53073901
6	Panel: Operator Assy	40035401	1	1	3	6	40035401
	Sheet: Op panel (Op16n/PS only)	40035502	1	1	3	6	40035502
	Panel: Operator Assy (OEL/INT)	40035403	1	1	3	6	40035403
7	Cable: Flexible (OP panel)	238A1071P0012	1	2	5	10	56629112
8	Stacker: Face-up (Assy)	2PA4128-1074G1	1	1	3	6	50108201
9	Hopper: Manual Feed (Assy)	2PA4128-1076G1	1	1	3	6	55700401
10	Cover: Connector	3PP4076-5052P1	1	0	3	6	53073301
11	Bearing: Feed Roller	4PP4076-5035P1	2	0	3	6	51608501
12	Spring: Transfer (L)	4PP4076-5036P1	1	0	3	6	50928601
13	Spring: Transfer (R) (with red mark)	4PP4076-5039P1	1	0	3	6	50928602
14	Roller: Transfer	3YB4076-5040P1	1	1	3	6	50408601
15	Gear: (Transfer Roller)	4PP4076-5042P1	1	0	3	6	51234901
16	Contact: (Assy)	3PA4076-5090G1	1	1	3	6	56731101
17	Kit: Legal/Universal 500 Sht		1	1	3	6	70027701
18	Spring: Damper (Assy)	40093801	1	0	3	6	40093801
19	Frame: Separator (Assy)	3PP4083-5663G1	1	1	3	6	53345601
20	FG plate BK (R)	4PP4076-5067P1	1	0	3	6	53346401
21	PCB: COM (Main) w/o ROM	40030302	1	2	5	10	40030302
22	PCB: PSBA (PostScript)	4YA4046-1632G011	1	2	5	10	55079601
	Program/font ROM (ODD)	8174624M0001	1	2	5	10	F/W Rev.
	Program/font ROM (EVEN)	8174624M0002	1	2	5	10	F/W Rev.
	PostScript ROM (ODD)	8174624M0004	1	2	5	10	
	PostScript ROM (EVEN)	8174624M0003	1	2	5	10	

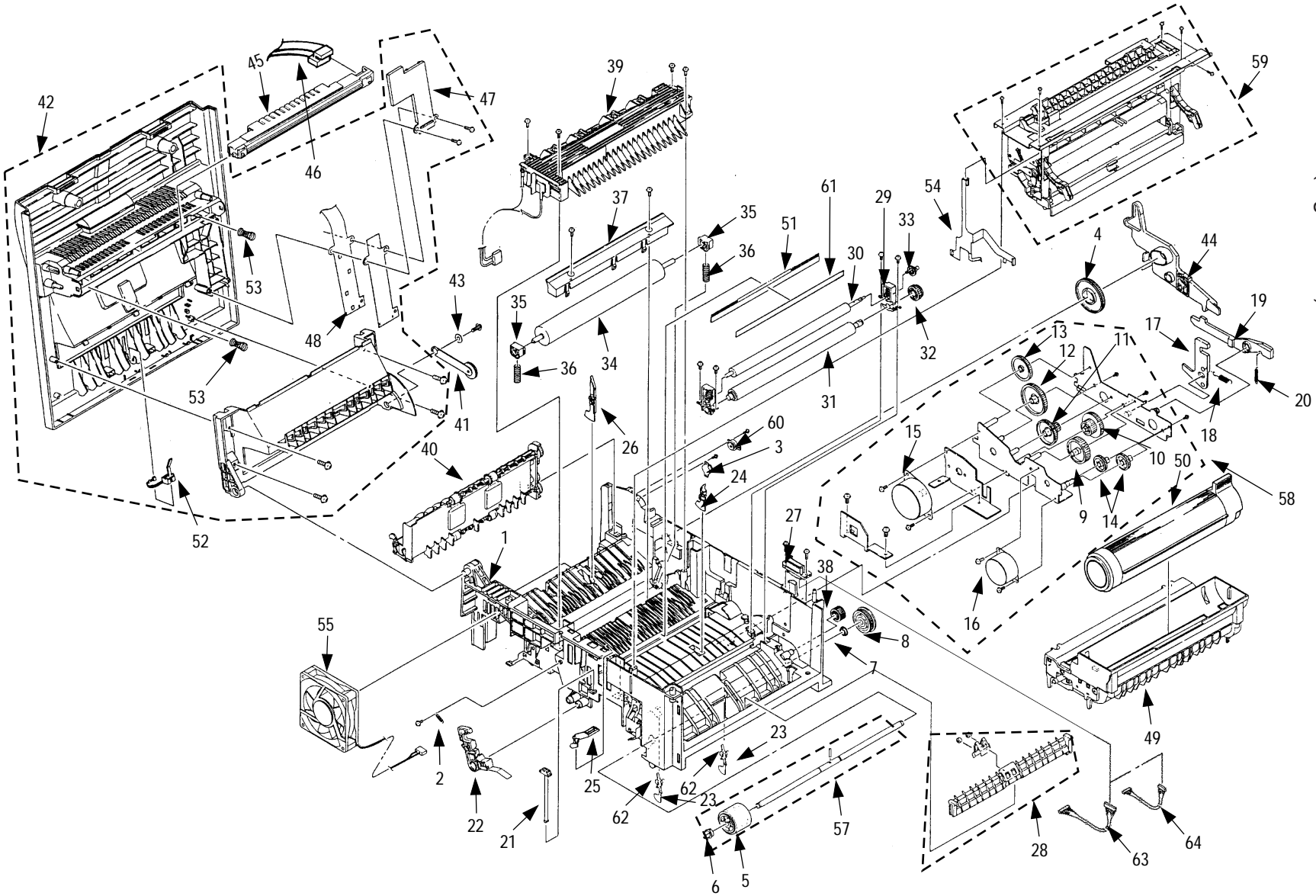


Table 8-2 Main Chassis Unit (1 of 2)

	Name / Rating	Parts No.	Q'ty	Q'ty			Remarks
				50	500	1000	
1	Frame: Main (A ssy) OP16n	40106701	1	1	3	6	40106701
2	Spring [EP lock lever (L) assy]	4LB-192600-6	1	0	3	6	50928306
3	Gear: Stacker Cover Damper	4PB4083-6197P1	1	1	3	6	51229401
4	Gear: Idle (Hopping) Front	4PP4043-4535P1	1	0	3	6	51234301
5	Roller: Hopping without shaft	4PA4076-5755G1	1	1	3	6	50407901
6	Bearing: L Hopping Roller Assy	4PP4076-5345P1	1	0	3	6	51608101
7	Bearing: R Hopping Roller Assy	4PP4076-5308P1	1	0	3	6	51608201
8	Gear: Hopping Roller (One way)	4PB4076-5327P1	1	0	3	6	51235501
9	Gear: Idle A	4PP4076-5061P1	1	0	3	6	51233701
10	Gear: Idle B	4PP4076-5062P1	1	0	3	6	51233801
11	Gear: Idle C	4PP4076-5063P1	1	0	3	6	51233901
12	Gear: Idle D	4PP4076-5064P1	1	0	3	6	51234001
13	Gear: Idle	40045101	1	0	3	6	40045101
14	Gear: Idle Registration	4PP4076-5068P1	2	0	6	12	51234201
15	Motor: Drum	4PB4076-5075P2	1	1	3	6	56511802
16	Roller: Registration	4PB4076-5076P1	1	1	3	6	50408001
17	Lever: EP Lock (R)	4PP4076-5044P1	1	0	3	6	50807301
18	Spring: EP Lock	4PP4076-5045P1	1	0	3	6	50928401
19	Lever: Pressure Release	3PP4076-5046P1	1	0	3	6	50807401
20	Spring: Pressure Release Lever	4LB-192500-7	1	0	3	6	50922107
21	Shaft: EP Lock	4PP4076-5047P1	1	0	3	6	51113301
22	Lever: EP Lock L (Assy)	4PA4076-5048G1	1	0	3	6	50807501
23	Lever: Inlet Sensor	40032901	2	0	6	12	40032901
24	Lever: Paper Sensor	3PP4076-5082P1	1	0	3	6	50807901
25	Lever: Toner Sensor	4PP4076-5086G1	1	0	3	6	50807801
26	Lever: Exit Sensor	3PP4076-5085P1	1	0	3	6	50807701
27	Connector: Square	220A1866P0220	1	2	5	10	22P fixed side 56730620
28	Guide: Paper Supply D (A4)	3PA4076-5759G1	1	0	3	6	51015902
29	Bearing: Registration Assy	4PA4076-5756G1	2	2	6	12	51608401
30	Roller: Pressure	3PP4076-5032P1	1	1	3	6	50408101
31	Roller: Registration	3PB4076-5030P2	1	1	3	6	50408202
32	Gear: Registration	4PP4043-4529P1	1	1	3	6	51234401
33	Gear: Pressure Roller	4PP4043-4530P1	1	1	3	6	51234501
34	Roller: Fuser Pressure (A4)	40032401	1	1	3	6	40032401
35	Bearing: Fuser Pressure Roller	4PP4076-5051P1	2	0	6	12	51608601
36	Spring: Bias (Backup A4)	4PP4043-4388P1	2	0	6	12	50928502
37	Guide: Fusing (A4)	2PP4076-5021P1	1	1	3	6	51016001
38	Gear: Idle Exit	4PP4043-4532P1	1	0	3	6	51234601
39	Fusing Assy (120 V)	1YX4076-5100G1	1	2	10	20	50219901
	Fusing Assy (230 V)	1YX4076-5100G2	1	2	10	20	50219902

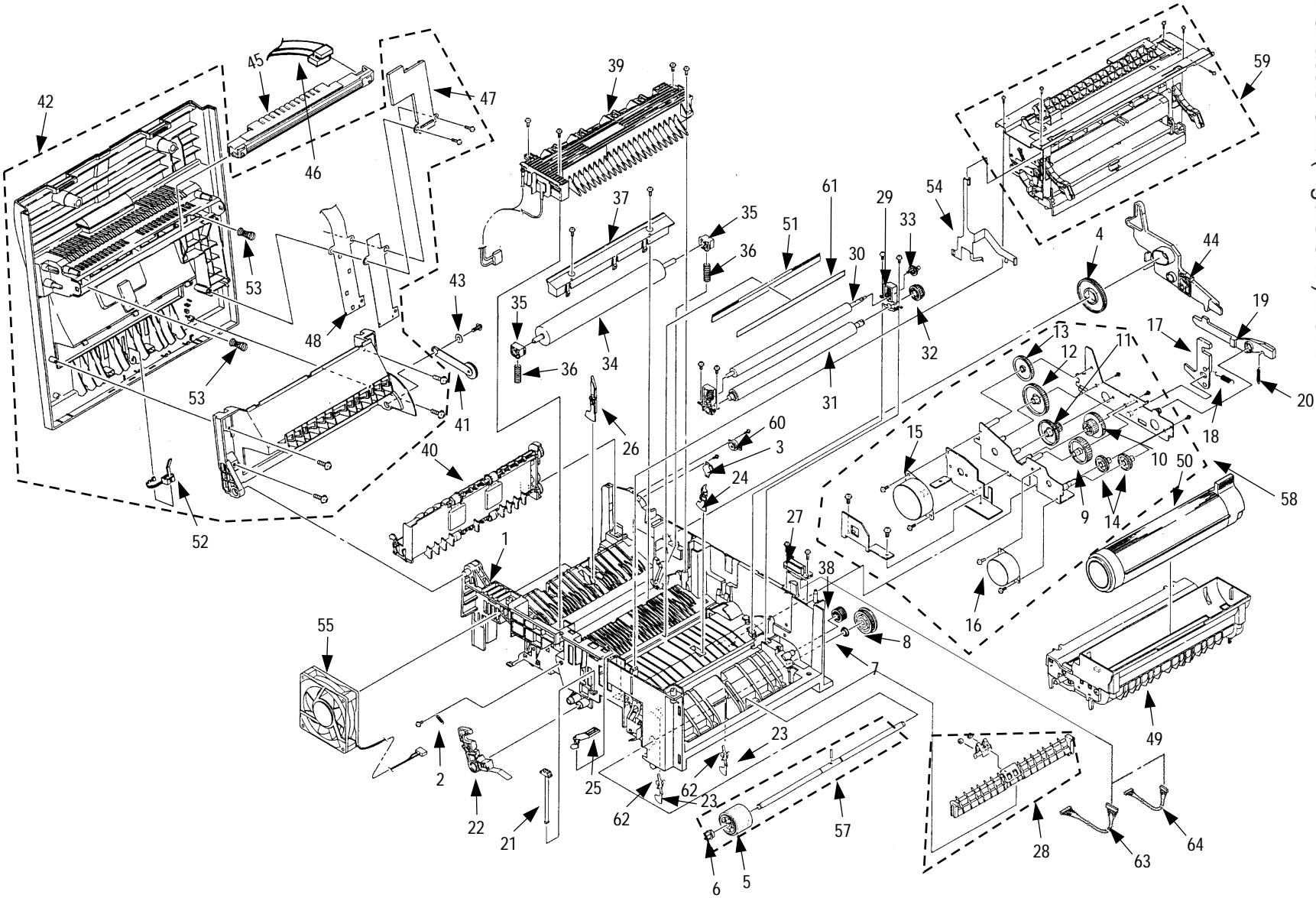


Table 8-2 Main Chassis Unit (2 of 2)

	Name / Rating	Parts No.	Q'ty	Q'ty			Remarks
				50	500	1000	
40	Roller: Eject (Assy)	2PA4076-5120G1	1	1	3	6	50408401
41	Arm: Damper	4PP4076-5191G1	1	1	3	6	53073101
42	Cover: Stacker (Assy)	2YX4128-1080G1	1	0	3	6	53073201
43	Washer	4PP4076-5009P1	1	0	3	6	50516701
44	Lever: Backup Release	3PP4076-5347P1	1	0	3	6	50808101
45	Head: LED	4YA4116-1200G2	1	2	10	20	56111401
46	Cable: LED Head (Assy) for Normal HEAD	4YX4076-5760G1	1	2	5	10	56634201
47	Cover: Cable	2PP4128-1096P1	1	0	3	6	53073401
48	Guide: Cable (B)	3PB4128-1110P1	1	1	3	6	51016501
49	Drum: Image		1				56118801
50	Cartridge: Toner		1				52109201
51	Strip: Anti-static	40106501	1	1	3	6	40106501
52	Sensor: Stacker Full (Assy)	4YB4128-1101P2	1	2	5	10	50409002
53	Spring: Head	4PP4128-1164P1	2	0	6	12	50932001
54	Plate: Frame Ground	4PP4043-4688P1	1	0	3	6	53346501
55	Fan: DC Motor	3PB4076-5290P1	1	1	3	6	56511201
56	Film: FG	3PB4128-1181P1	1	1	3	6	52203901
57	Roller: Hopping Assy	4PA4076-5333G3	1	2	5	10	50407903
58	Motor: Main (Assy)	3YX4076-5070G1	1	0	3	6	56513801
59	Feeder: Front Unit	1YX4076-5300G1	1	0	3	6	50115901
60	Damper: Stacker Cover	4PB4076-5015P1	1	1	3	6	53350401
61	Film: Anti-static	3PB4083-6089P4	1	1	3	6	52203804
62	Spring: Inlet Sensor	40033001	2	0	6	12	40033001
63	Cord: Connector 11 Pin	4YS4011-4463P1	1	2	5	10	56731001
64	Cord: Connector (FF)	4YS4011-4448P3	1	2	5	10	56730803

Front Feeder Unit (Figure 8-3)

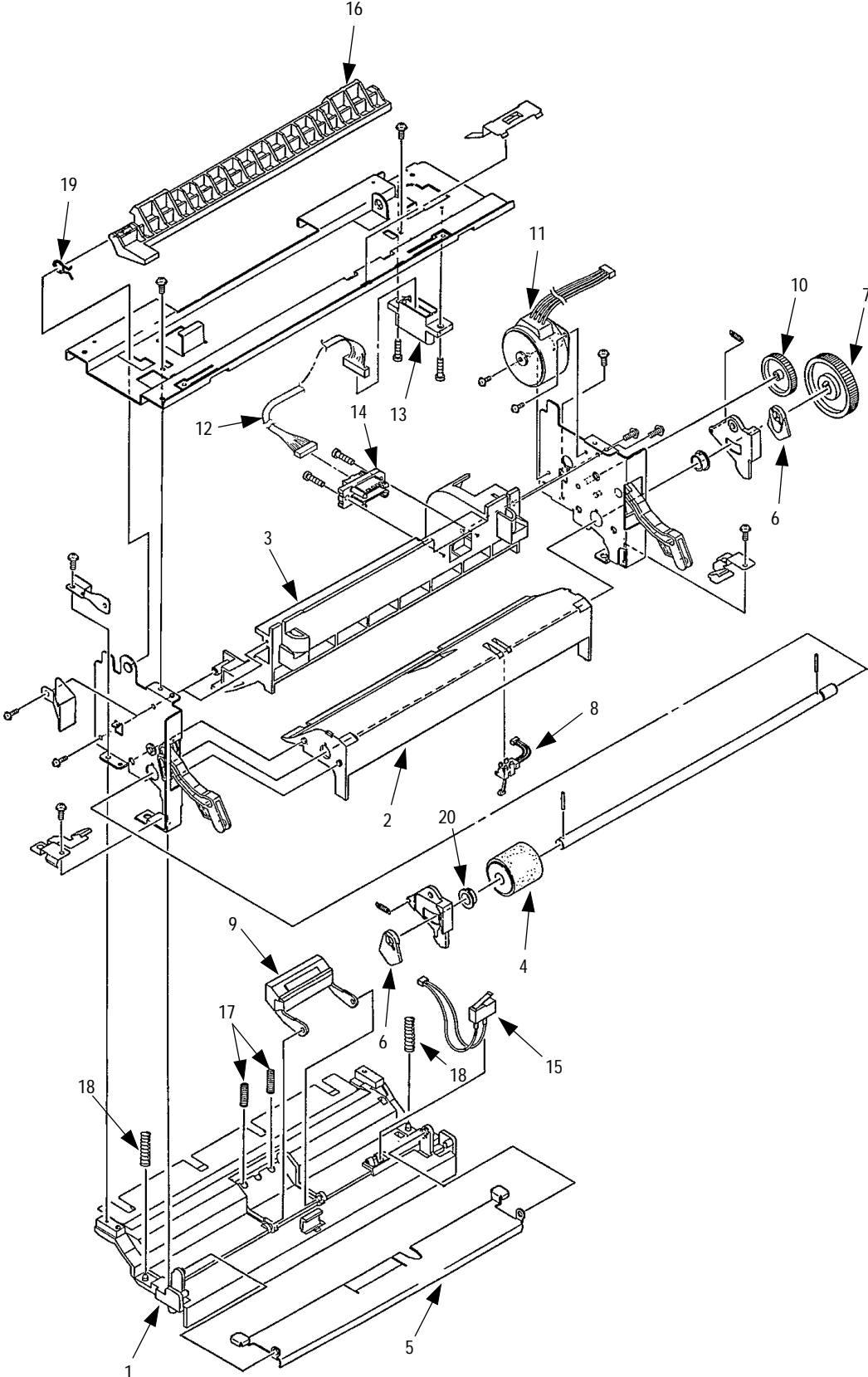


Table 8-3 Front Feeder Unit

	Name / Rating	Parts No.	Q'ty	Q'ty			Remarks
				50	500	1000	
1	Guide: Paper Supply A	3PP4076-5348G1	1	0	3	6	51016101
2	Guide: Paper Supply B	1PP4076-5303P1	1	0	3	6	51016201
3	Guide: Paper Supply C	1PP4076-5304P1	1	0	3	6	51016301
4	Roller: Front Feed (Assy)	4PA4076-5757G1	1	1	3	6	50408501
5	Plate: Front Feeder	4PP4076-5310G1	1	1	3	6	51016601
6	Cam: Front Feeder	4PP4076-5313P1	2	0	6	12	51235601
7	Gear: Front Feeder (One-Way)	4PB4076-5314P1	1	0	3	6	51234701
8	Sensor: Front Feeder Paper End	4YB4076-5316P1	1	2	5	10	50408901
9	Separator Assy	4PP4076-5317G1	1	1	3	6	53346301
10	Gear: Idle	4PP4076-5326P1	1	0	3	6	51234801
11	Motor: Hopping	4PB4076-5330P1	1	1	3	6	56511701
12	Cord: Connector	4YS4011-4448P2	1	2	5	10	56730802
13	Connector: Square 22P (FF)	220A1866P0221	1	2	5	10	56730621
14	Connector: Square 14P (FF)	220A1866P0140	1	2	5	10	56730640
15	Switch: Assy	4PB4078-1412P1	1	2	5	10	56212901
16	Lever: Cover Lock	3PP4076-5389P1	1	0	3	6	50809801
17	Spring: Separator (FF)	4LB-190500-5	2	1	3	6	50925905
18	Spring: Paper Supply (FF)	4PP4043-4742P1	2	1	3	6	50932101
19	Spring: (Lock lever)	4PP4076-5391P1	1	0	3	6	50932201
20	Bearing: Hopping Roller Assy	4PP4076-5308P1	2	1	3	6	51608201

Base Unit (Figure 8-4)

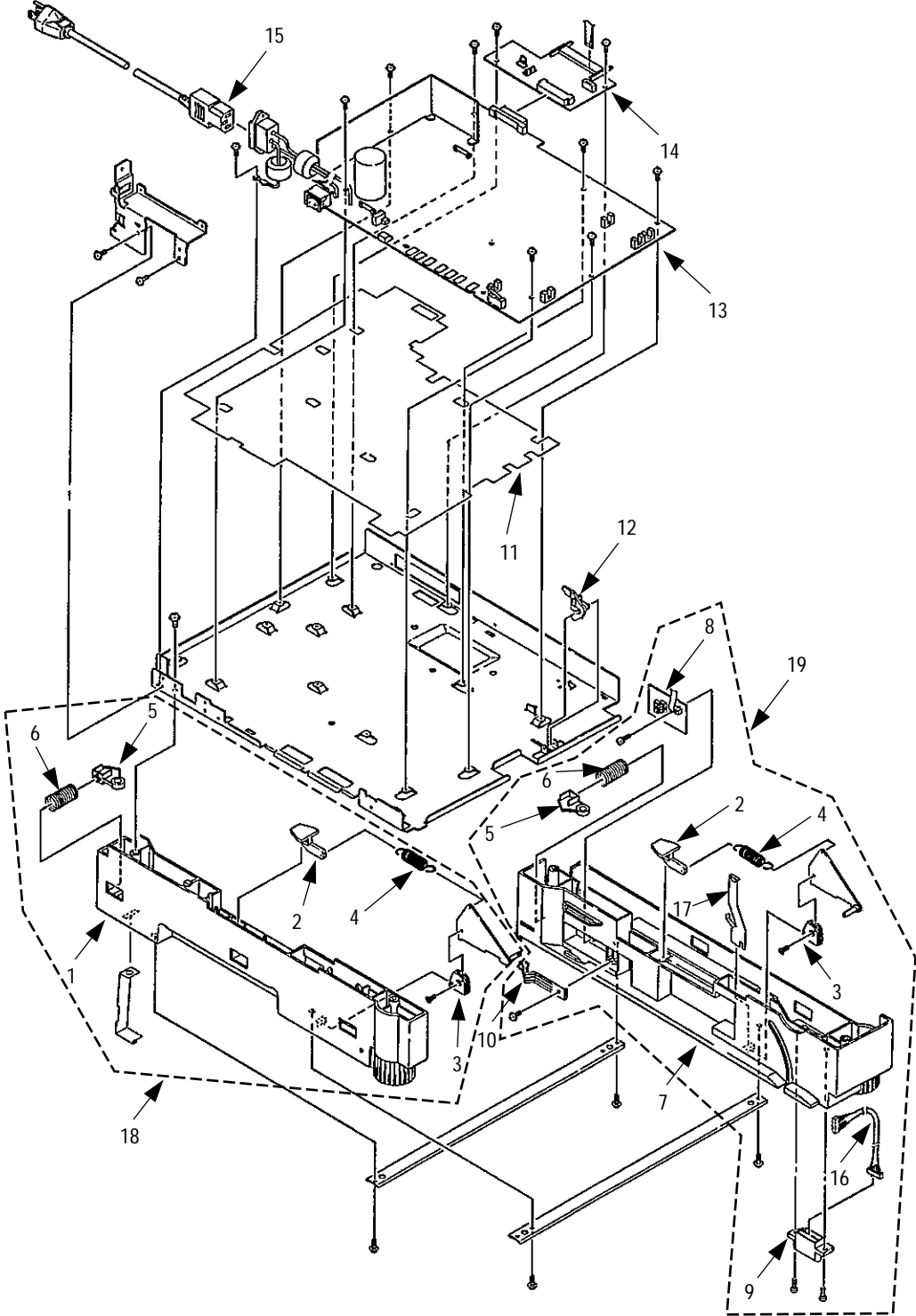


Table 8-4 Base Unit

	Name / Rating	Parts No.	Q'ty	Q'ty			Remarks
				50	500	1000	
1	Rail: Guide L (Assy)	1PA4076-5410G1	1	1	3	6	51016701
2	Block: Pull	4PP4122-1217P1	2	2	6	12	51500301
3	Support: Link	4PP4076-5358P1	2	2	6	12	50516801
4	Spring: Cassette Lock	4PP4076-5417P1	2	0	6	12	50927302
5	Stopper: Cassette	4PP4076-5359P1	2	2	6	12	50607201
6	Spring: Pressure Coil	4PP4043-4526P1	2	0	6	12	50928801
7	Rail: Guide R (Assy)	1PA4076-5420G1	1	1	3	6	51016801
8	PCB: AOLS	4YA4046-1621G11	1	2	5	10	55077101
9	Connector: Square 14 Pin (FF)	220A1866P0140	1	2	5	10	56730640
10	Spring: Detector	4PP4076-5360P1	1	1	3	6	50928901
11	Insulator	3PB4076-5144P1	1	1	3	6	51711001
12	Lever: Paper End	4PP4076-5154P1	1	1	3	6	50808201
13	Power Supply (120V)	4YB4049-1879P1	1	2	5	10	56415801
	Power Supply (230V)	4YB4049-1880P1	1	2	5	10	56415901
14	PCB: AOLC (Driver Board)	4YA4046-1620G11	1	2	5	10	55077211
15	Cord: AC (ODA 120V)	3YS4011-1026P1	1	1	3	6	56631801
	Cord: AC (ODA 220V)	3YS4011-1266P001	1	1	3	6	56631901
	Cord: AC (IPL 240V)		1	1	3	6	56625802
16	Cord: Connector (7 pin)	4YS4011-4448P3	1	2	5	10	56730803
17	Plate: Frame Ground Link	4PP4076-5742P1		0	3	6	53346601
18	Rail: Guide L (Assy)	1PA4076-5410G1	1	0	3	6	51016701
19	Rail: Guide R (Assy)	1PA4076-5420G1	1	0	3	6	51016801

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APPENDIX A: CENTRONICS PARALLEL INTERFACE

1) Connector

- Printer side : 36-pin receptacle (Female)
Type 57RE-40360-830B-D29 (made by Daiichi Denshi) or equivalent
- Cable side : 36-pin plug (Male)
Type 57-30360 (made by Daiichi Denshi) or equivalent
Plug-552274-1 (AMP), 552073-1 (AMP) or equivalent

2) Cable

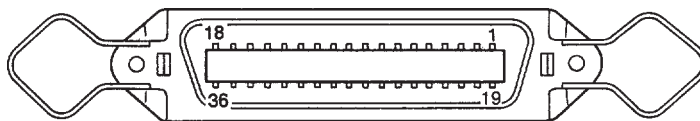
- Cable length : 6 ft (1.8 m) max.
(A Shielded cable composed of twisted pair wires is recommended for noise prevention.)
- IEEE-1284 compatible cable is strongly recommended and is required for use with Windows 3.1x and Windows 95 Enhancement Software.

Note: Cable is not supplied.

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	Parallel input 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 functioning
11	BUSY	← PR	During print processing or during alarm
12	PAPER END	← PR	End of paper
13	SELECT	← PR	Select state (ON-LINE)
14	Auto Feed	→ PR	Request to change Mode
15	-		(Not used)
16	0V		Signal ground
17	CHASSIS GROUND		Chassis ground
18	+5V	← PR	50 mA max.
19	⋮		
⋮	0V Signal ground		Signal ground
30			
31	INPUT PRIME	→ PR	Initializing signal
32	FAULT	← PR	End of paper or during alarm
33	0V		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

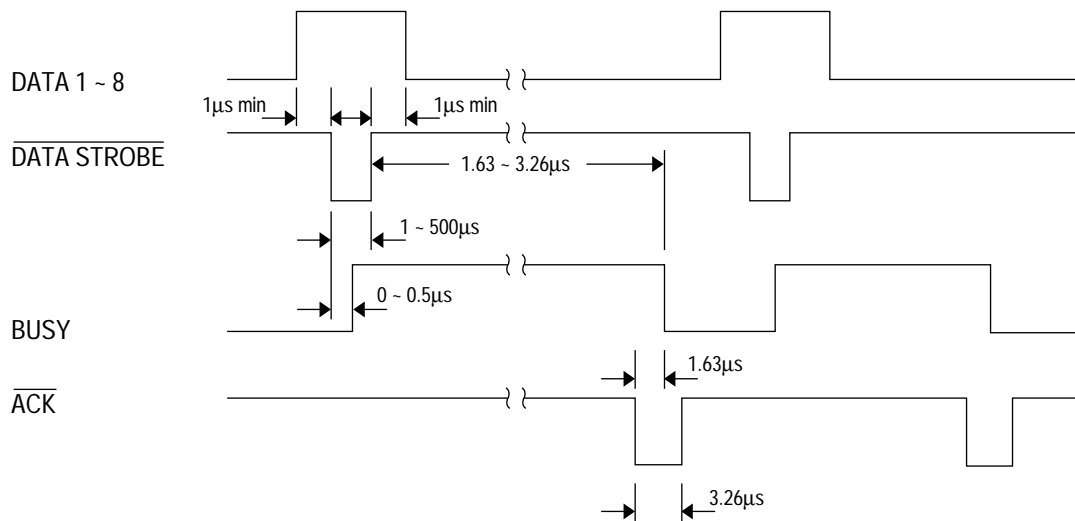
- LOW : 0 V to +0.8 V
- HIGH : +2.4 V to +5.0 V

5) Specifications

Item	Description
Mode	Compatibility mode, Nibble mode, ECP mode
Data bit length	8 bits: Compatibility mode, 4 bits: Nibble mode, 9 bits: ECP 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



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APPENDIX B: HIGH CAPACITY SECOND PAPER FEEDER MAINTENANCE

Preface

This appendix describes the field maintenance methods for High Capacity Second Paper Feeder option of OKIPAGE16n / OKIPAGE16n/PS Page Printer.

Refer to the USER'S MANUAL for the equipment handling and operation methods.

1. Outline

1.1 Functions

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

The main functions are the followings:

- Paper that can be used:

[Paper Type]

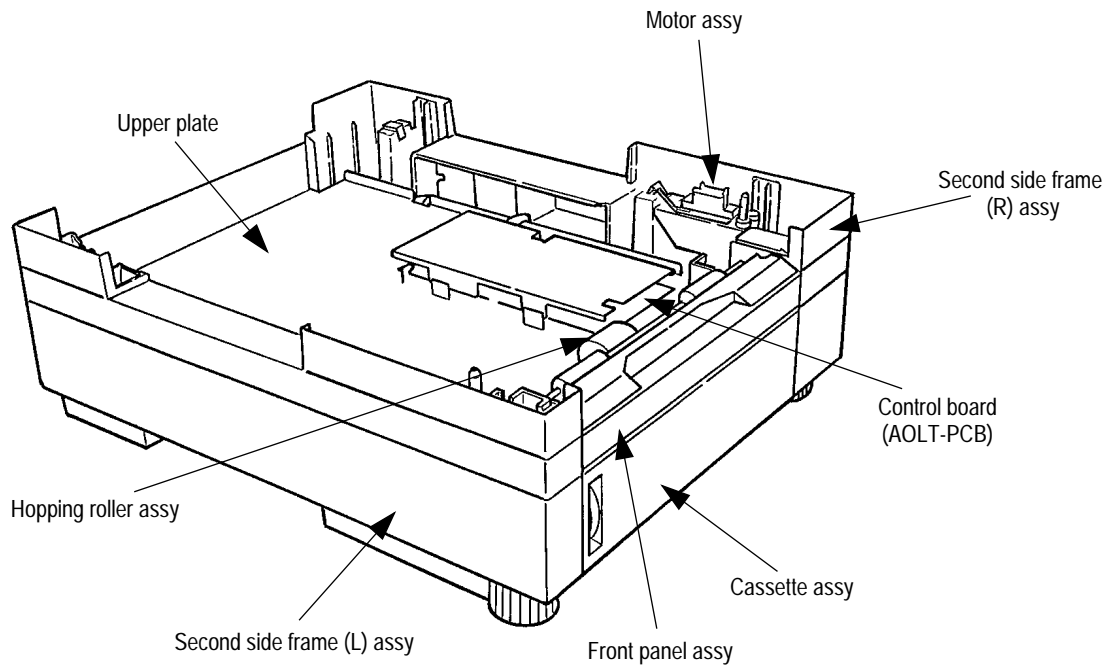
- Cut Sheet Size: A4, A5, B5, Letter, Executive, Legal13, Legal14
- Special Size: Paper Width: 148 to 216mm
Paper length: 210 to 356mm

[Weight]

- 64 ~ 81 g/m²

- Paper setting quantity: 500 sheets of paper weighing 64 g/m²

1.2 External View and Component Names

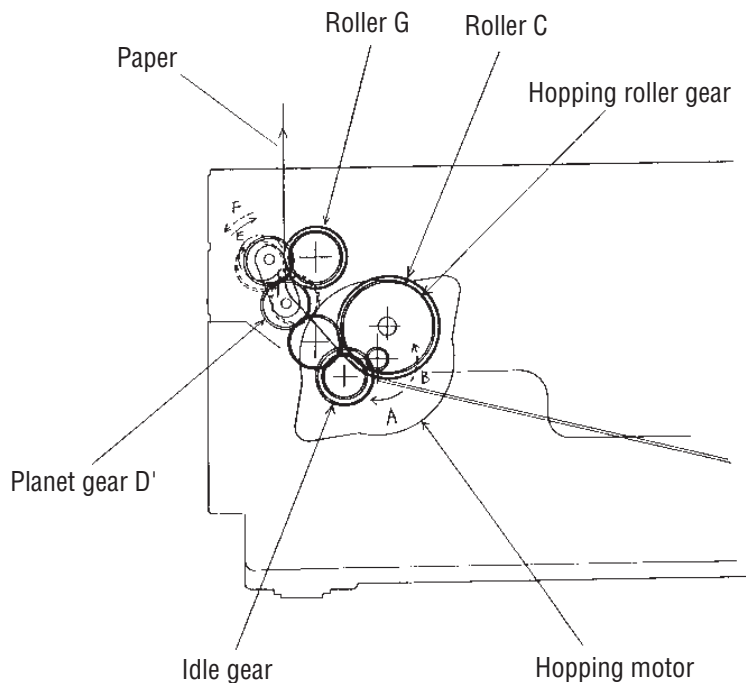


2. Mechanism Description

2.1 General Mechanisms

The sheet at the very top of the stack in the paper cassette is fed into the printer, one at a time, when the High Capacity Second Paper Feeder receives the signal from the printer.

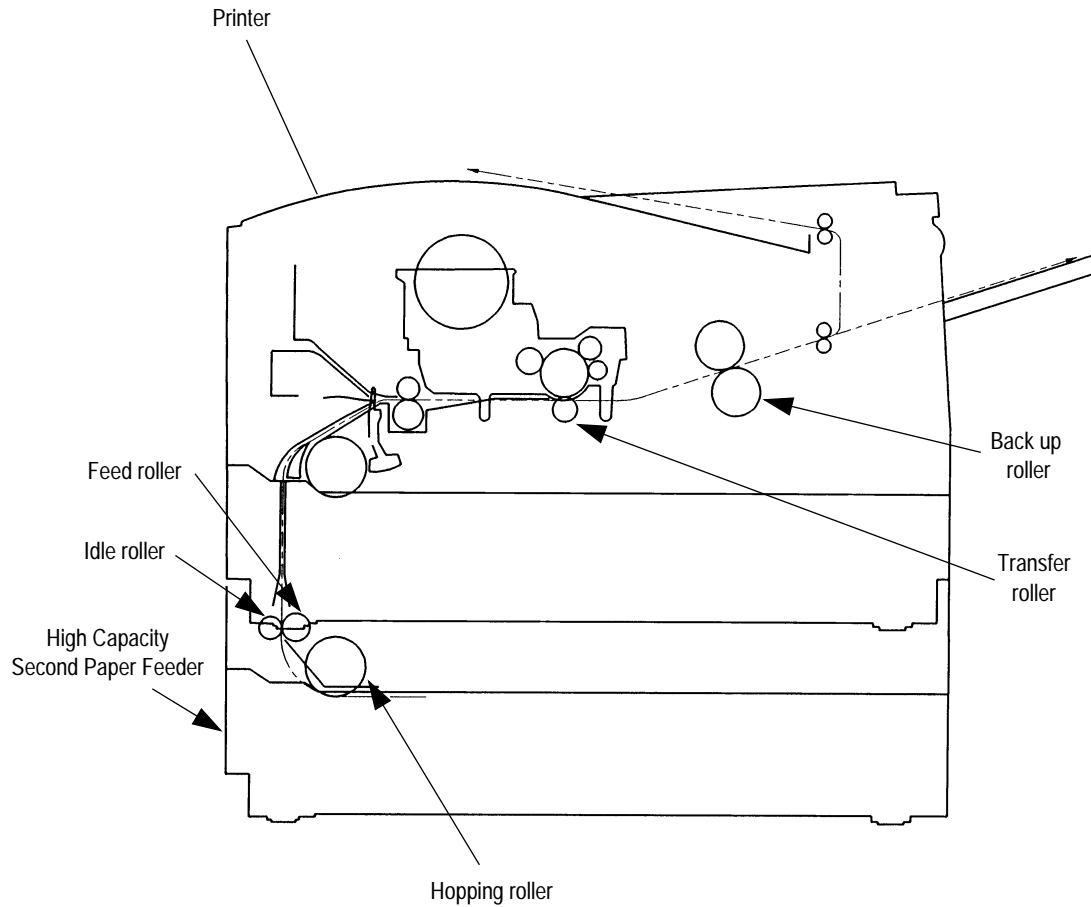
- (1) First, the hopping motor rotates in the direction of arrow A. The hopping gear is turned, via idle gear, and the roller C on the same shaft is turned. At the same time, the planet gear D' moves to the direction of the arrow E, roller G turns; the paper is fed for a predesignated distance until its leading edge reaches roller G.
- (2) Next, the hopping motor rotates in the direction of arrow B. While the hopping gear also turns at the same time, due to the one-way bearing being engaged at the hopping gear, the roller C does not turn. The planet gear D' moves to the direction of the arrow F, drives the Roller G and feeds the paper into the printer, until it reaches the registration roller of the printer.



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

2.2 Hopper Mechanism

The hopper automatically feeds the printer with the paper being set, single sheet at a time. When the paper is loaded in the paper cassette, it is then transported by the hopping motor, carrying forward only a single sheet caught by the brake shoe at a time.



3. Parts Replacement

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.




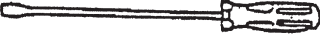




3.1 Precautions Concerning Parts Replacement

- (1) Parts replacements must be carried out, by first turning the printer power switch off "O" and removing the High Capacity Second Paper Feeder from the printer.
- (2) Do not disassemble the Second 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]

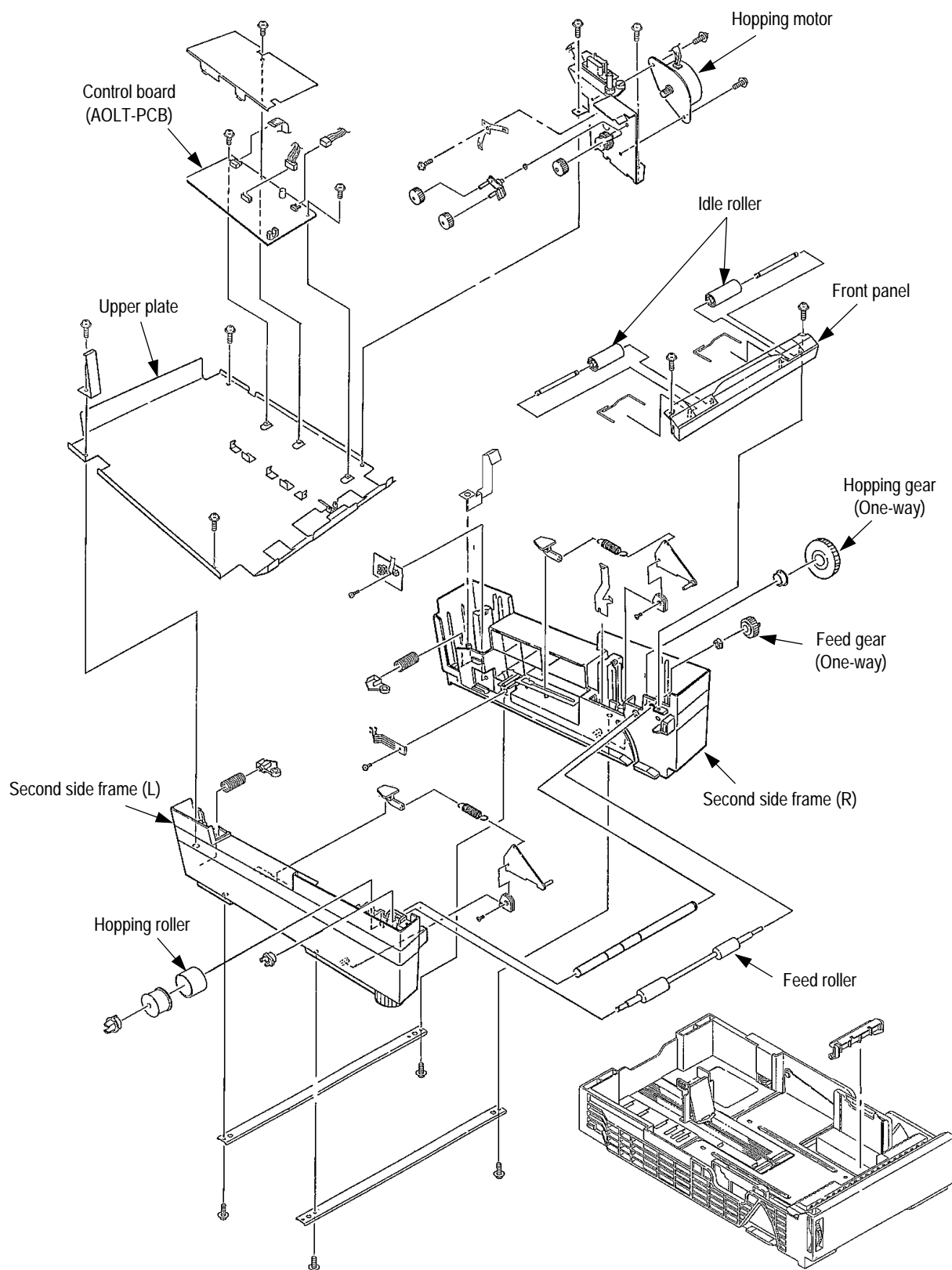
Table 3-1 shows the tools required for the replacement of printed circuit boards and units in the field.

Table 3-1 Service Tools

No.	Service Tools	Q'ty	Place of use	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	 Connector remover	1	OKI P/N: 4PP4076-5395P1	

3.2 Parts Layout

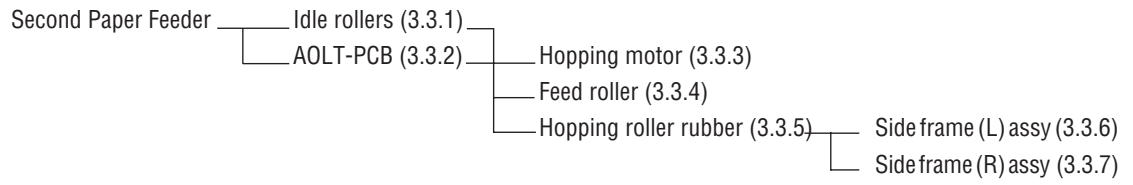
This section describes the layout of the main components.



3.3 Parts Replacement Methods

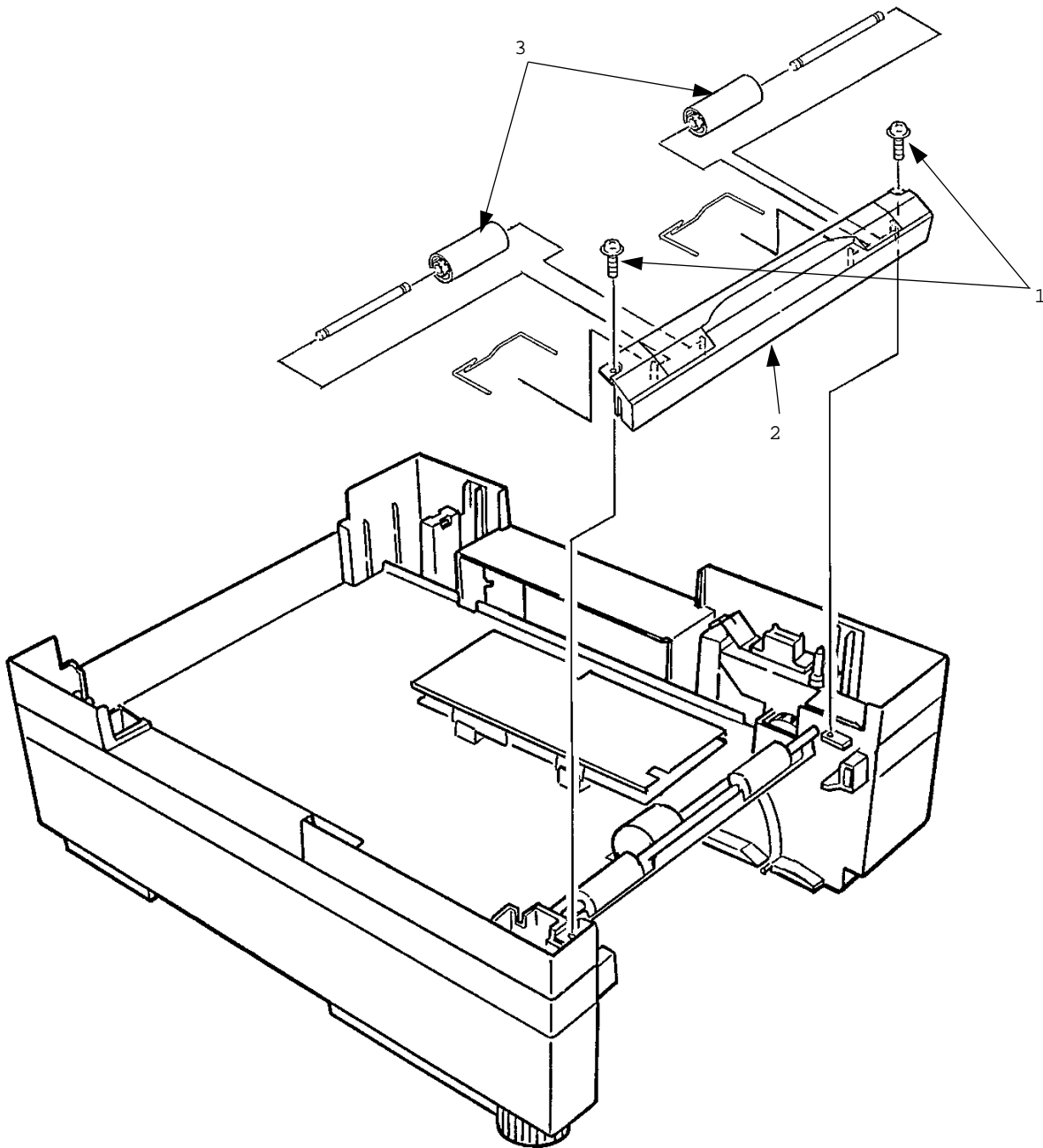
This section describes the parts replacement methods for the components listed in the disassembly order diagram below.

High Capacity



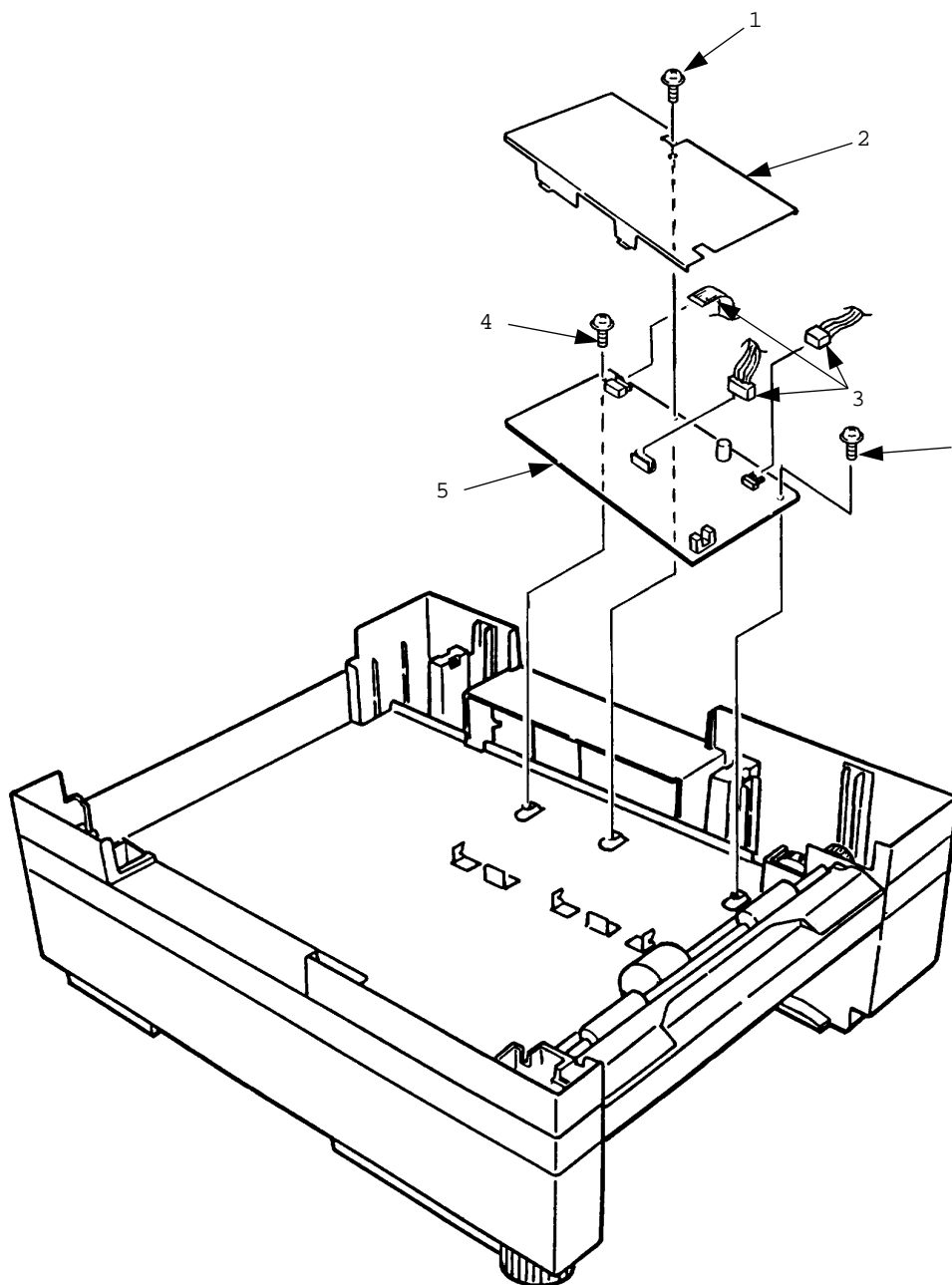
3.3.1 Idle rollers

- (1) Remove two screws 1 and remove the front panel assy 2.
- (2) Remove two idle rollers 3.



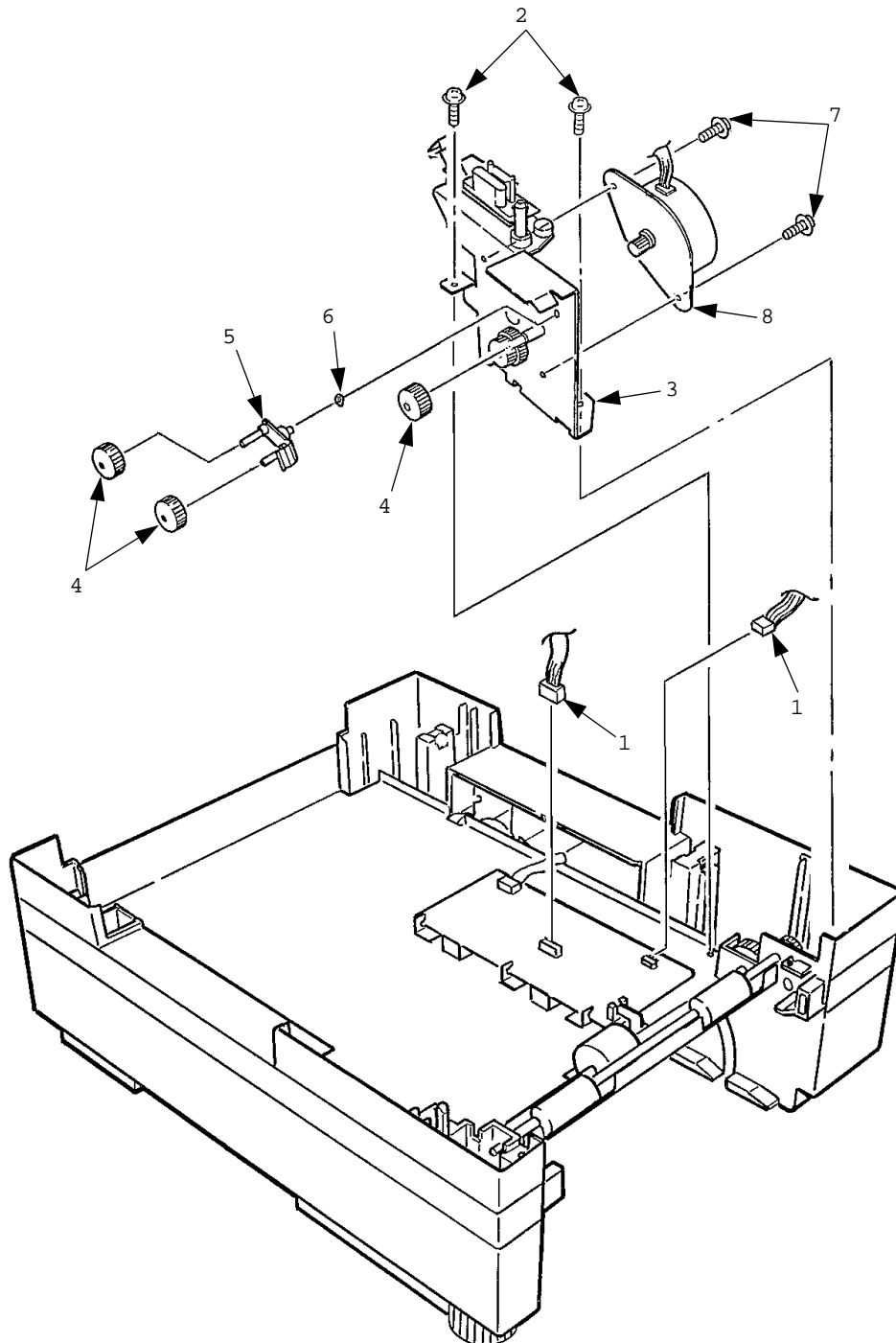
3.3.2 AOLT-PCB

- (1) Remove the screw 1 and remove the PCB cover 2.
- (2) Remove three connectors 3 and two screws 4, then remove the AOLT-PCB 5.



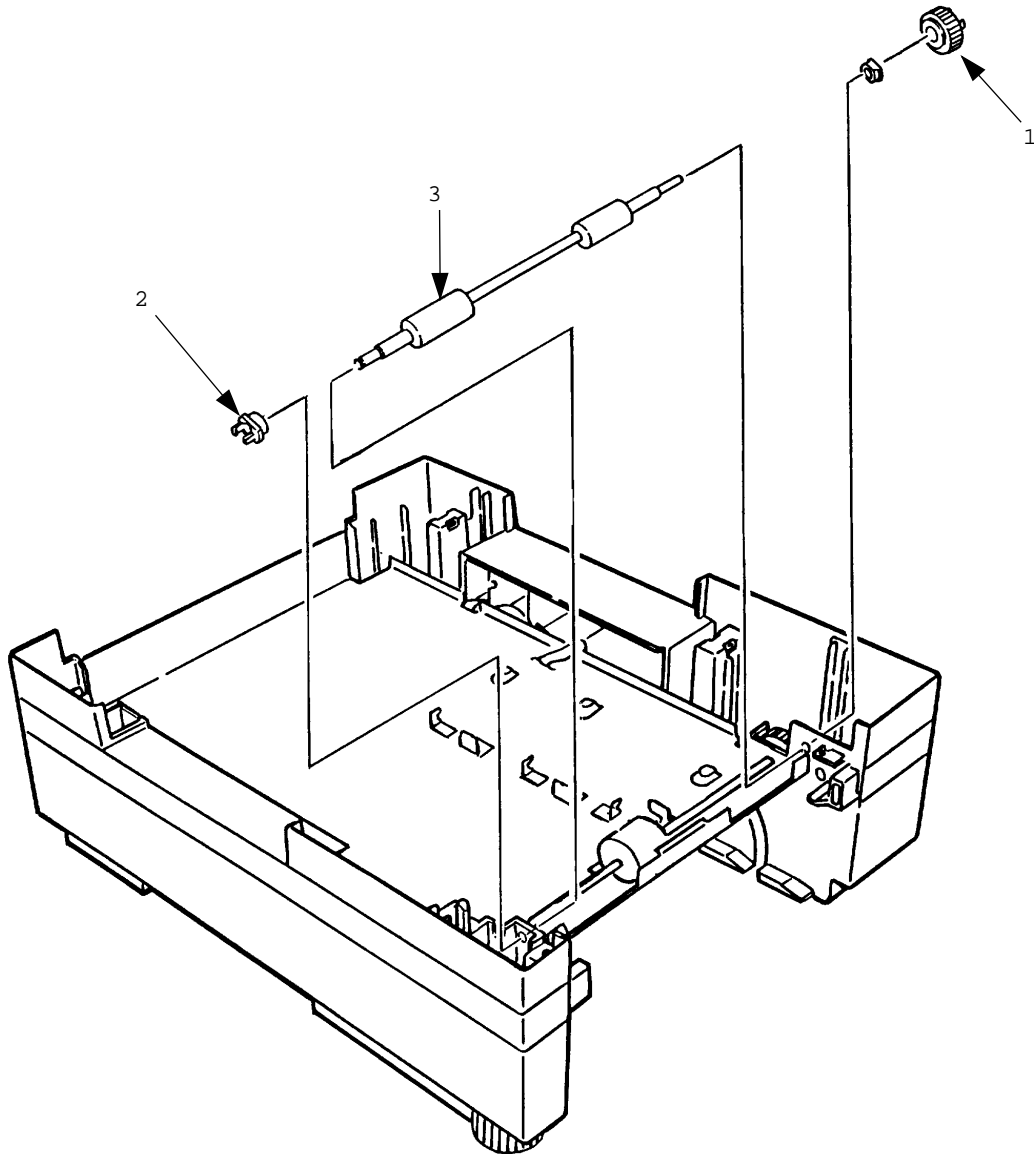
3.3.3 Hopping motor

- (1) Remove the front panel assy (see 3.3.1 step1).
- (2) Remove the PCB cover (see 3.2.2 step1).
- (3) Remove two connectors 1 and two screws 2, then remove the hopping motor assy 3. Three gears 4 and the connecting lever 5, as well as the wave washer 6 all come off at the same time, so be careful not to lose them.
- (4) Remove two screws 7 and remove the hopping motor 8.



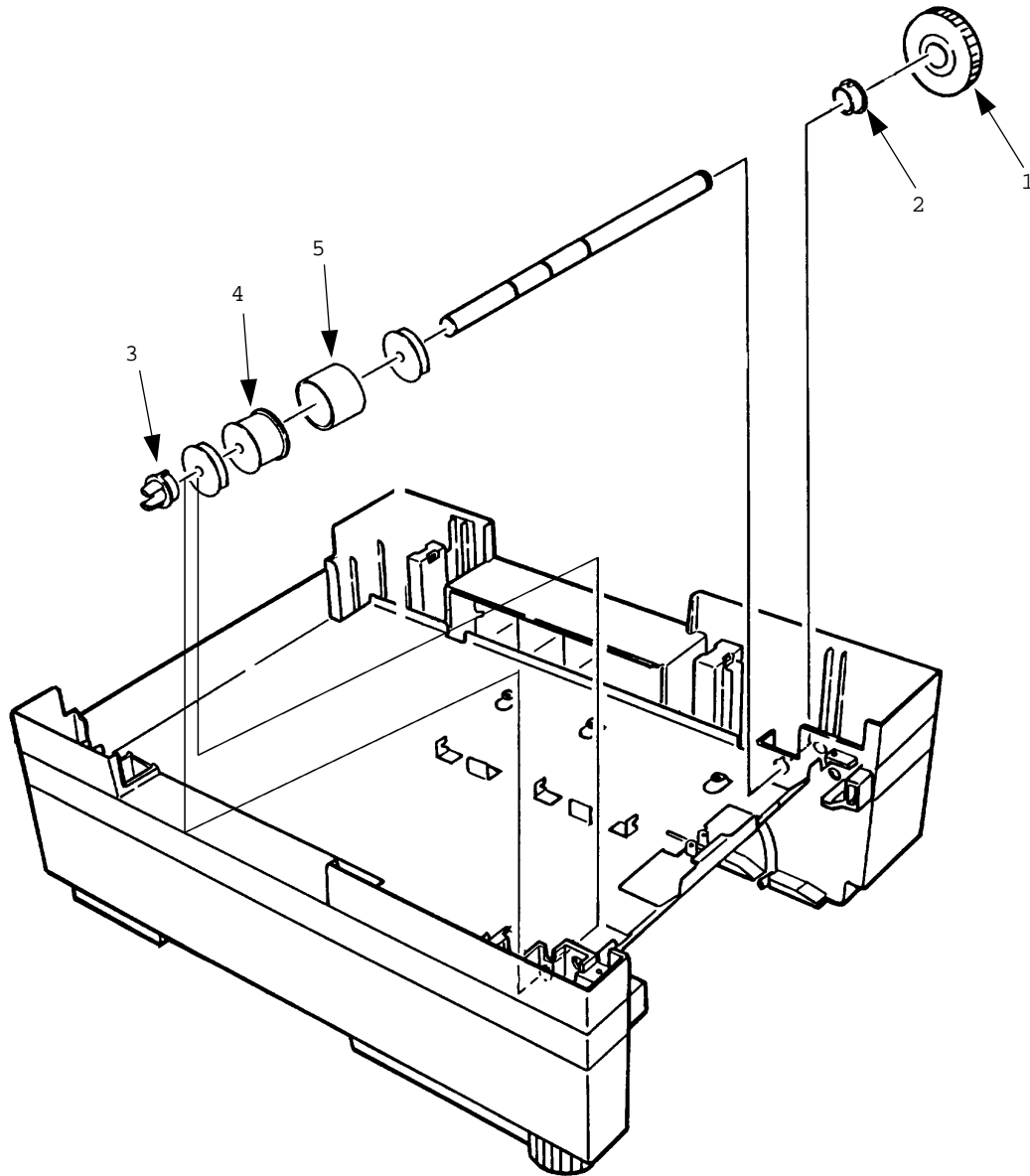
3.3.4 Feed roller

- (1) Remove the front panel assy (see 3.3.1 step1).
- (2) Remove the AOLT-PCB (see 3.3.2).
- (3) Remove the hopping motor assy (see 3.3.3).
- (4) Remove the latch on the feed roller gear 1 and remove the feed roller gear 1.
- (5) Remove the latch on the feed roller bearing 2 and remove the feed roller bearing 2.
- (6) Shift the feed roller 3 to the right side and lift it out, holding it on the left side.



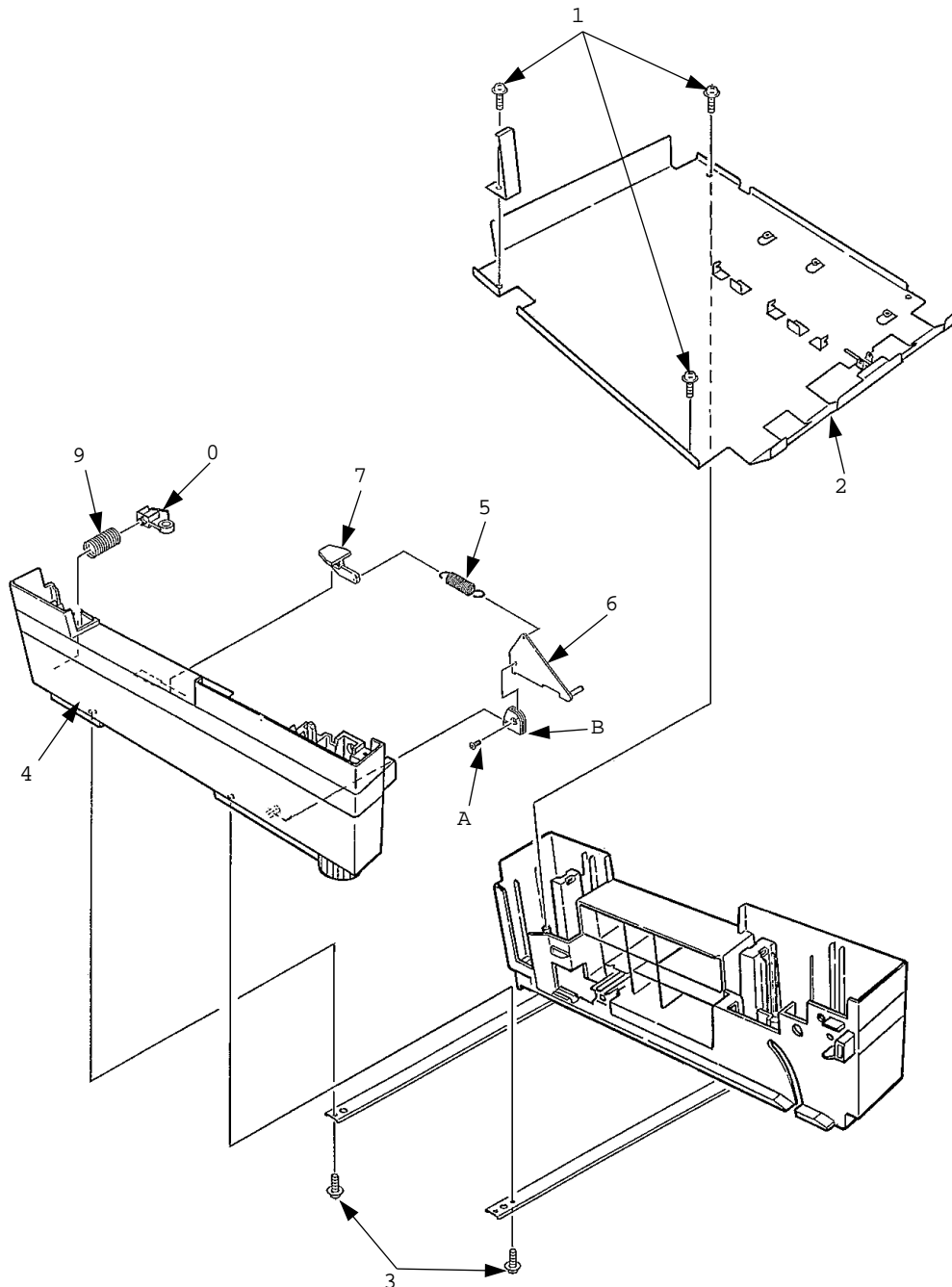
3.3.5 Hopping roller rubber

- (1) Remove the feed roller (see 3.3.4).
- (2) Remove the latch on the hopping roller gear 1 and remove the hopping roller gear 1. The bearing F 2 comes off at the same time, so be careful not to lose it.
- (3) Remove the latch on bearing L 3 and remove the bearing L 3.
- (4) Remove the hopping roller 4 and remove the hopping roller rubber 5 from it.



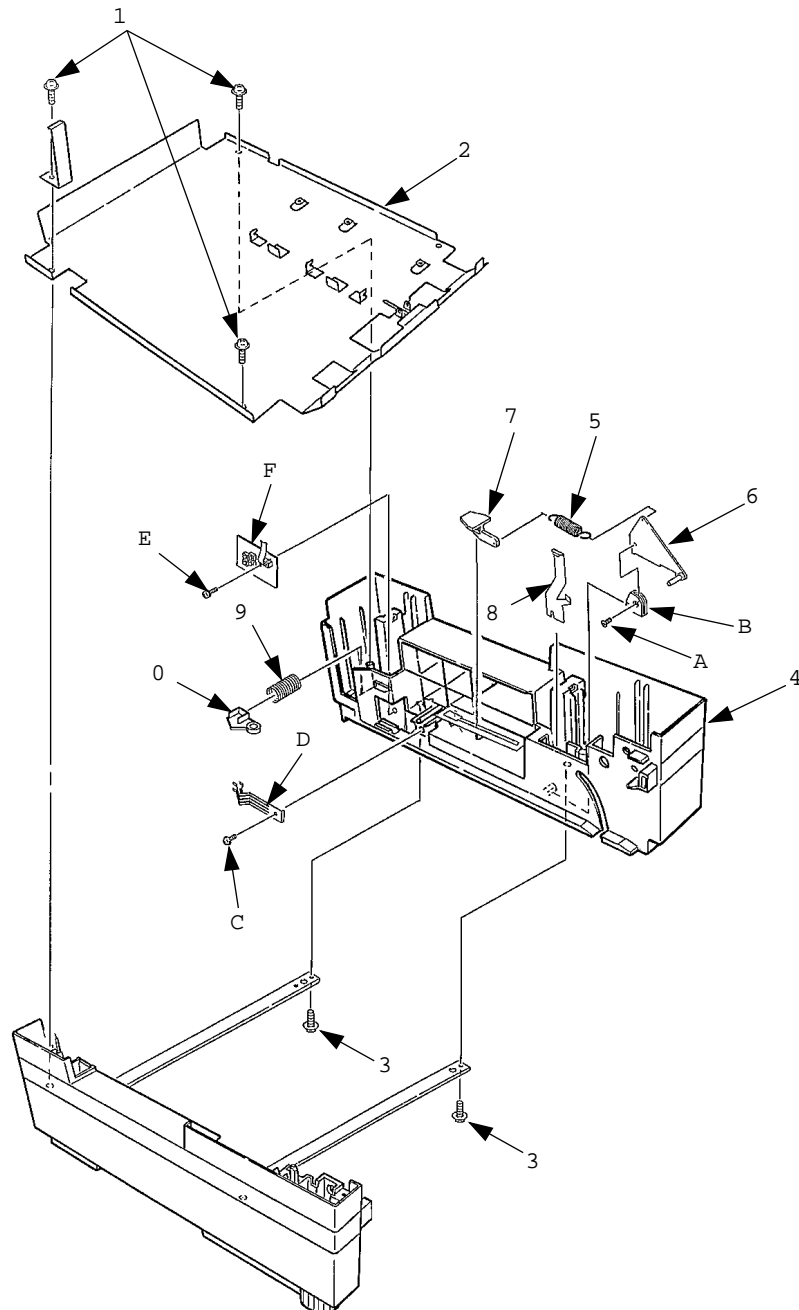
3.3.6 Side frame (L) assy

- (1) Remove the hopping roller (see 3.3.5).
- (2) Remove three screws 1 and remove the upper plate 2.
- (3) Remove two screws 3 and remove the side frame (L) assy 4.
- (4) Remove the cassette lock spring 5, link 6, pull block 7 (note the directions of the hooks of the cassette lock spring 5).
- (5) Remove the spring 9 and cassette stopper 0.
- (6) Remove the screw A and remove the link support B.



3.3.7 Side frame (R) assy

- (1) Remove the hopping roller (see 3.3.5).
- (2) Remove three screws 1 and remove the upper plate 2.
- (3) Remove two screws 3 and remove the side frame (R) assy 4.
- (4) Remove the cassette lock spring 5, link 6, pull block 7 and earth plate 8 (note the directions of the hooks of the cassette lock spring 5).
- (5) Remove the spring 9 and remove the cassette stopper 0.
- (6) Remove the screw A and remove the link support B.
- (7) Remove the screw C and remove the detector spring D.
- (8) Remove the screw E and remove the AOLD-PCB F.



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4. TROUBLESHOOTING

4.1 Precautions Prior to the Troubleshooting

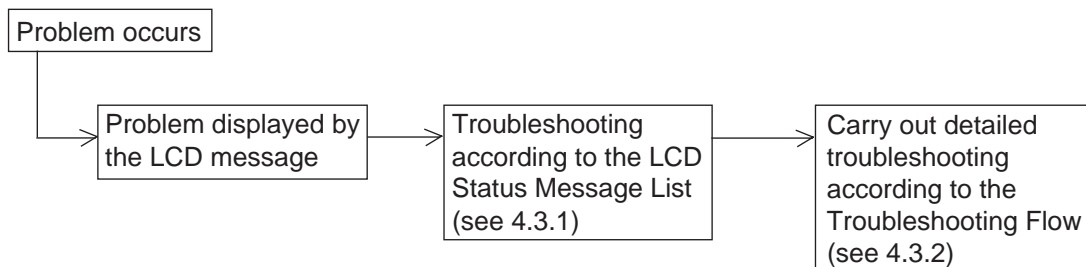
- (1) Go through the basic checking items provided in the Operator Guide.
- (2) Obtain detailed information concerning the problem from the user.
- (3) Go through the checking in the conditions similar to that in which the problem occurred.

4.2 Preparations for the Troubleshooting

- (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.

4.3 Troubleshooting Method

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



4.3.1 LCD Status Message List

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

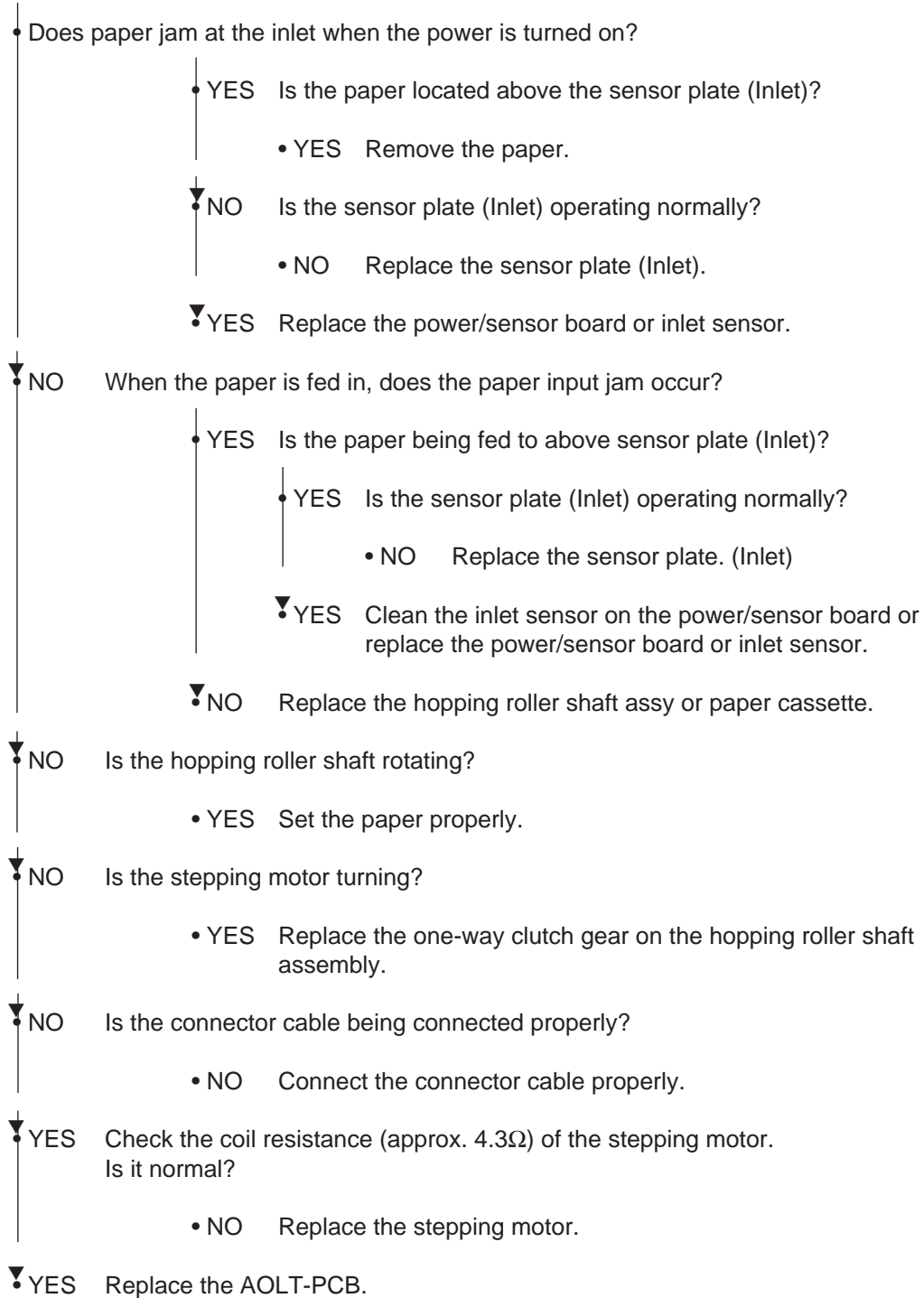
Table 4-1

Classification	LCD Status Message	Description	Recovery method
Jam error	<div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">PAPER INPUT JAM CHECK TRAY 2</div> <div style="border: 1px solid black; padding: 2px;">PAPER FEED JAM CHECK TRAY 2</div>	Notifies of occurrence of jam while the paper is being fed from the High Capacity Second Paper Feeder	<ul style="list-style-type: none"> • Check the paper in the High Capacity Second Paper Feeder. Carry out the recovery printing by opening the cover, removing jammed paper and closing the cover, and then turning the error display off. • When the problem occurs frequently, to through the Troubleshooting.
Paper size error	<div style="border: 1px solid black; padding: 2px;">ERROR PAPER SIZE CHECK TRAY 2</div>	Notifies of incorrect size paper feeding from the High Capacity Second Paper Feeder.	<ul style="list-style-type: none"> • 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 the cover, removing paper and closing the cover, and then turning the error display off.
Tray paper out	<div style="border: 1px solid black; padding: 2px;">PAPER OUT mmmmmmmm TRAY 2</div> <p>mmmmmmmm: Paper size in the tray being selected</p>	Notifies of no paper or paper cassette state of the High Capacity Second Paper Feeder.	<ul style="list-style-type: none"> • Load the paper or paper cassette in the High Capacity Second Paper Feeder.
Interface Timeout	<div style="border: 1px solid black; padding: 2px;">ERROR CONTROLLER 81</div>	Notifies of occurrence of interface timeout between the printer and the High Capacity Second Paper Feeder.	<ul style="list-style-type: none"> • Verify connection of AOLT-PCB and square-shaped connector. Replace the square-shaped connector if necessary. • Replace AOLT-PCB.

4.3.2 Troubleshooting Flow

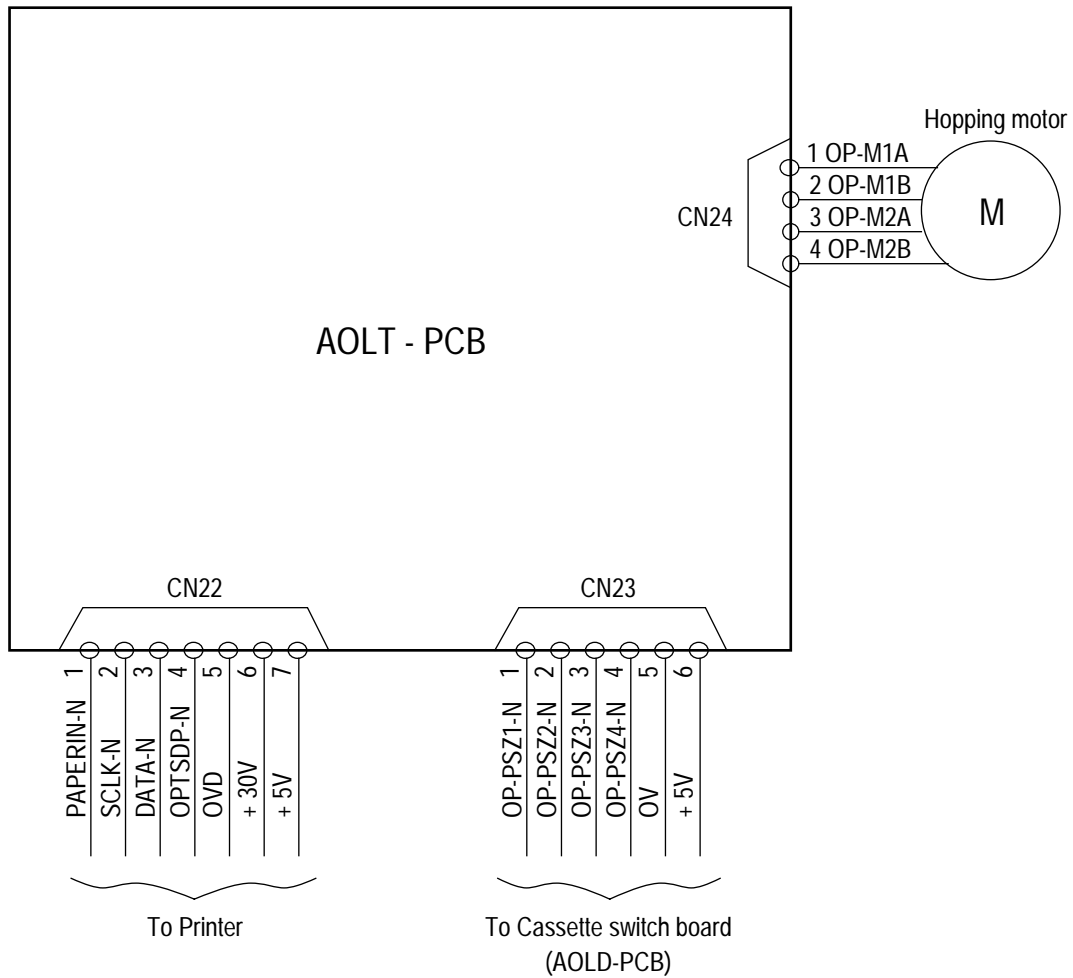
- (JAM error)

Paper Input Jam

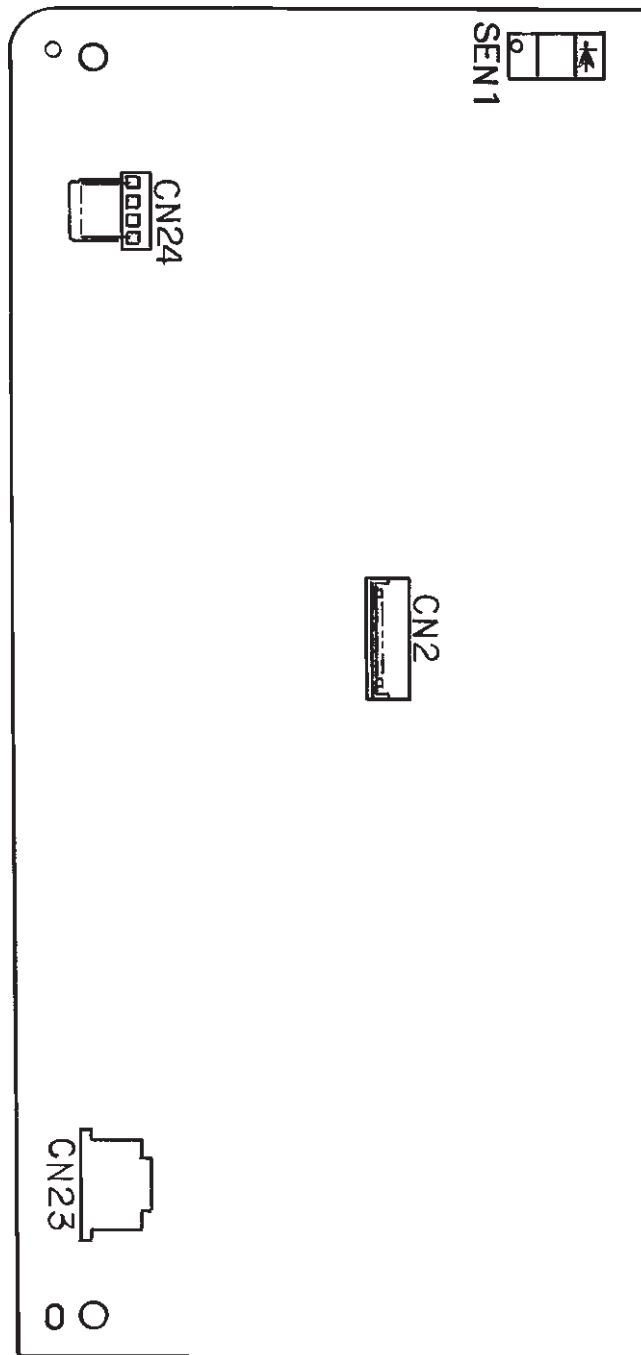


5. Connection Diagram

5.1 Interconnection Diagram



5.2 PCB Layout
AOLT-PCB



6. Parts List

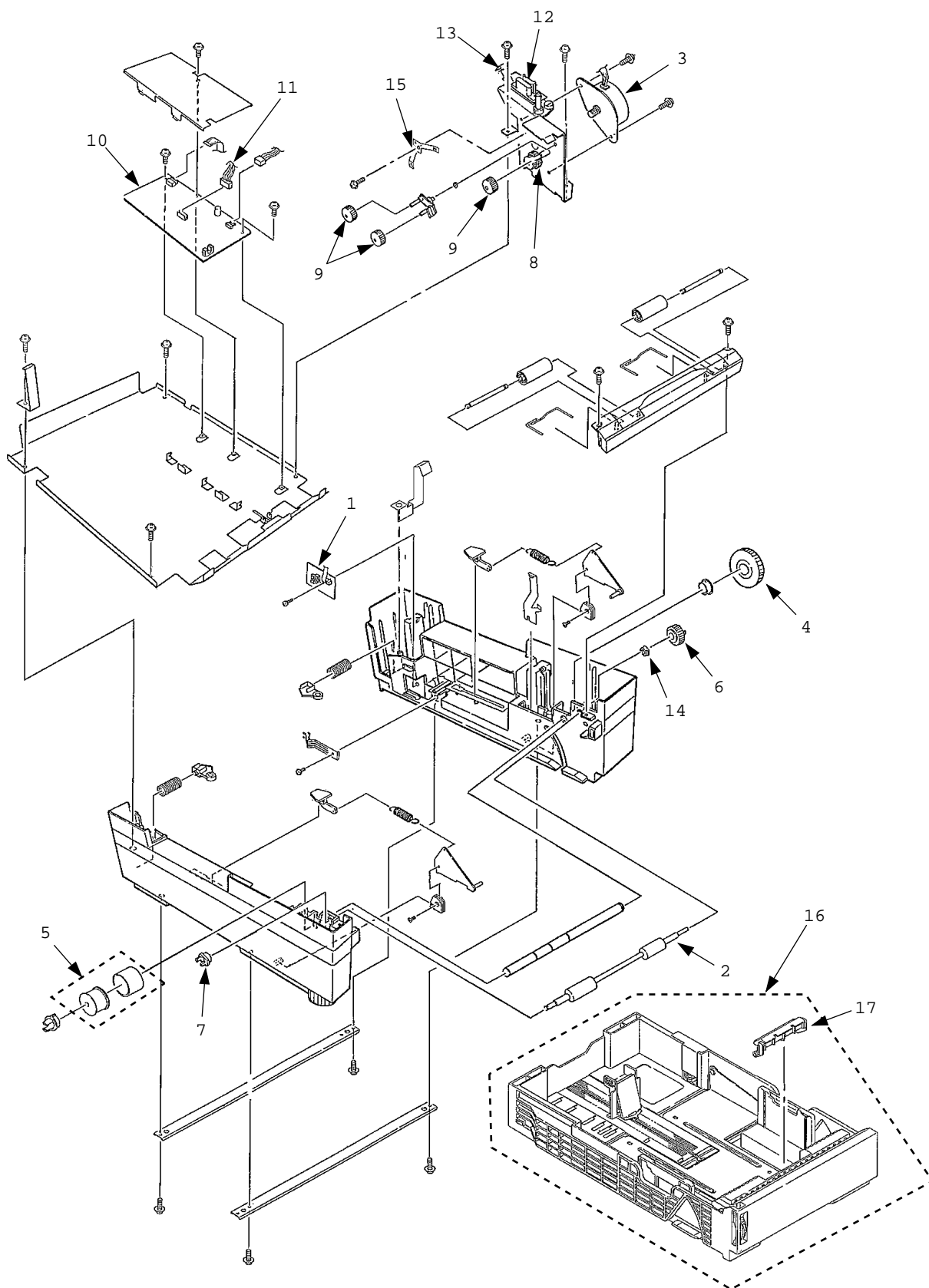


Table 6-1 High Capacity Second Paper Feeder

No.	Description	Part No.	Q'ty	Remarks
1	PCB: AOLD (2nd Tray)	4YA4046-1646G11	1	55077401
2	Roller: Feed (2nd Tray)	3PB4076-5707P1	1	50408701
3	Motor: Hopping (2nd Tray)	4PB4076-5718P1	1	56511901
4	Gear: Hopping (2nd Tray)	4PB4043-4486P1	1	51235001
5	Roller: Hopping	4PA4076-5755G1	1	50407901
6	Gear: Feed Roller (2nd Tray)	4PB4043-4488P1	1	51235401
7	Bearing: Feed Roller	4PP4076-5035P1	1	51608501
8	Gear: Idle (2nd Tray)	4PP4076-5712P1	1	51235201
9	Gear: Planet (2nd Tray)	4PP4043-4491P1	3	51235301
10	PCB: AOLT (2nd Tray)	4YA4046-1645G11	1	55077511
11	Cord: Connector 7p 2nd T	4YS4011-4448P3	1	56730803
12	Connector: Square-shaped	220A1866P0141	1	56730641
13	Plate: FG Shaft (2nd Tray)	4PP4076-5717P1	1	53346701
14	Bushing: ADF (2nd Tray)	4PP4076-3949P1	1	51607301
15	Plate: FG Shaft (2nd Tray)	4PP4076-5719P1	1	53346801
16	Cassette: Paper Assy		1	70027701
17	Frame: Sep Assy 2nd Tray	3PP4083-5663G1	1	53345601

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APPENDIX C: MULTI FEEDER MAINTENANCE

Preface

This section is intended for the service personnel and describes the field maintenance methods for Multi Feeder option of OKIPAGE16n / OKIPAGE16n/PS LED Page Printer.

Refer to the USER'S MANUAL for equipment handling and operation methods.

1. Outline

1.1 Functions

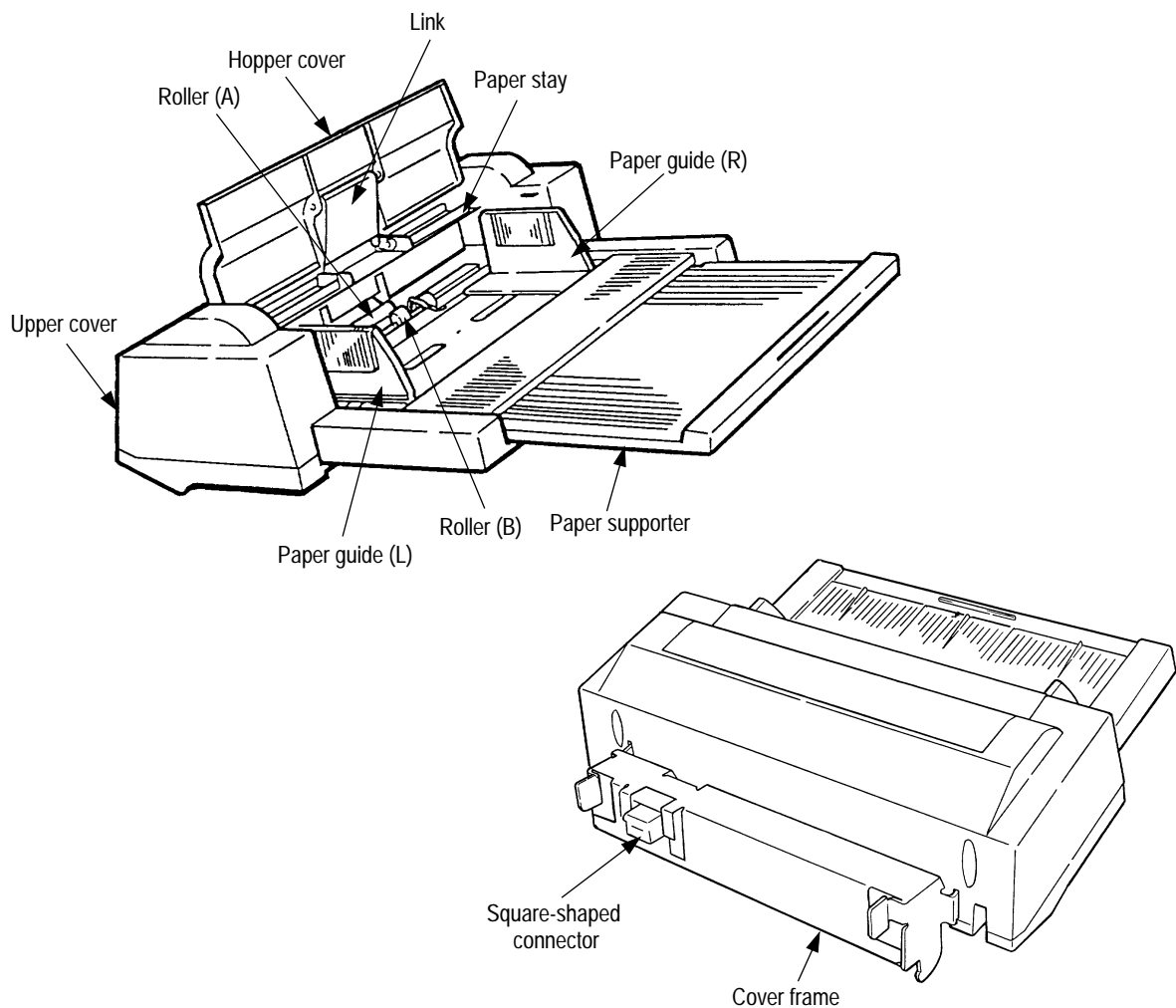
This Multi Feeder is installed on the front section of the printer, and it supplies paper automatically through the operation of hopping motor, which is driven by signals sent from the printer. The main functions are the followings:

- Paper that can be used:

Paper type	Paper size	Quantity of paper
Plain paper	A6 (106 x 148 mm) ~ A4	64 ~ 90 g/m ²
Thick paper, OHP film		64 ~ 90 g/m ²
Post card, label sheet	Post card ~ A4-size equivalent	64 ~ 128 g/m ²
Envelope	C5, DL, COM-10, COM-9, Monarch	64 ~ 90 g/m ²

* approximately 50 sheets of envelopes can be set at a time.

1.2 External View and Component Names

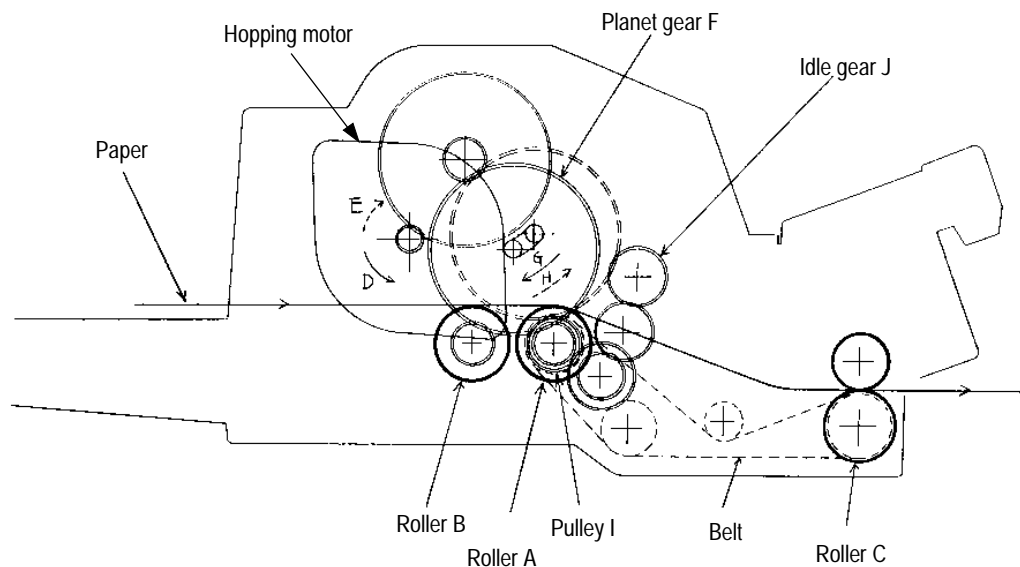


2. Mechanism Description

2.1 General Mechanism

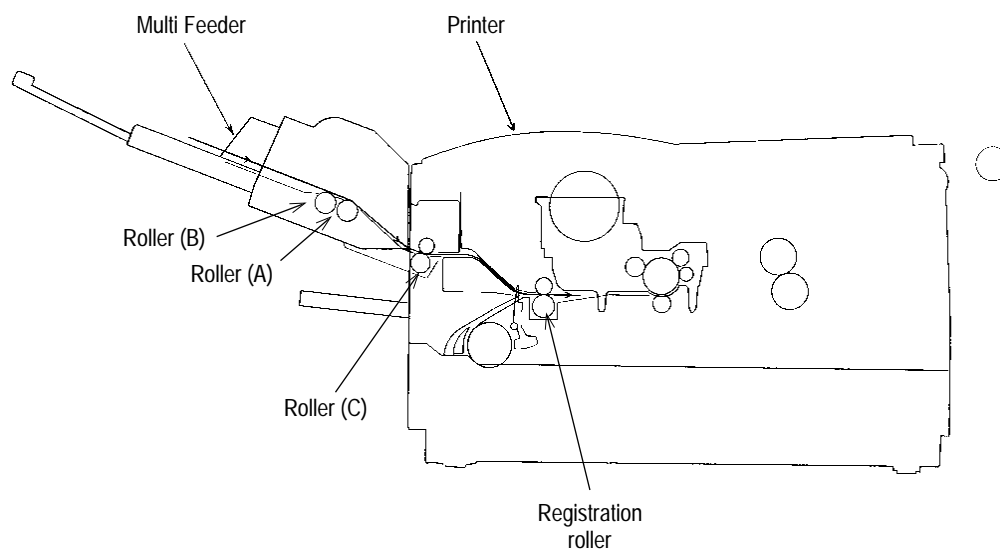
The sheet (or envelope) at the very bottom of the stack is fed into the printer, one at a time, when the Multi Feeder receives the signal from the printer.

- (1) First, the hopping motor rotates in the direction of arrow D. The planet gear F moves to the direction of arrow G, and drives rollers A and B. The roller C is linked to pulley I which is on the same shaft as roller A, and it also turns at the same time as roller A. The paper is fed for a predesignated distance until the leading edge reaches roller C.
- (2) Next, the hopping motor rotates in the direction of arrow E. The planet gear F moves to the direction of arrow H, and drives idle gear J. The rotation of idle gear J is transmitted to the gears linked to it, and drives pulley I on the same shaft as roller A, turning roller C to feed the paper into the printer, until it reaches the registration roller of the printer. During this process, a one-way bearing is engaged at pulley I so that the rotation of pulley I is not transmitted to roller A, preventing any feeding of papers by roller A.



2.2 Hopper Mechanism

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



3. Parts Replacement

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

- (1) Parts replacements must be carried out, by first turning the printer power switch off "O" and removing the Multi Feeder from the printer.
- (2) Do not disassemble the Multi 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]

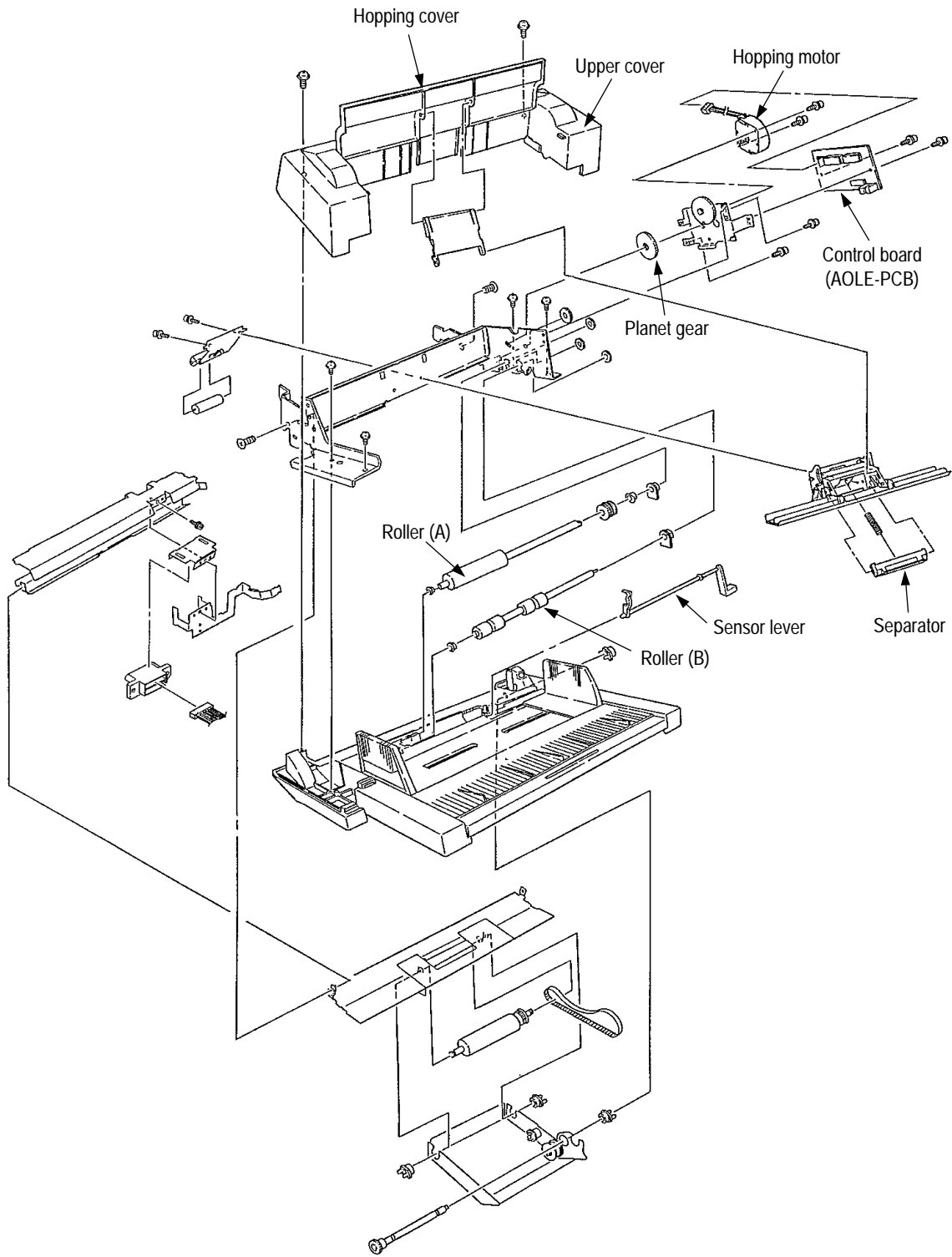
Table 3-1 shows the tools required for the replacement of printed circuit boards and units in the field.

Table 3-1 Service Tools

No.	Service Tools	Q'ty	Place of use	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	 Connector remover	1	OKI P/N: 4PP4076-5395P1	

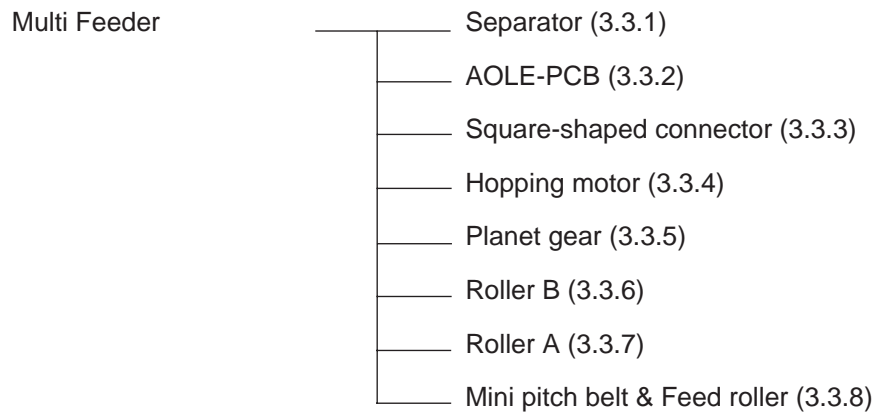
3.2 Parts Layout

This section describes the layout of the main components.



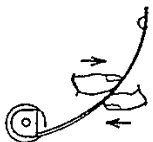
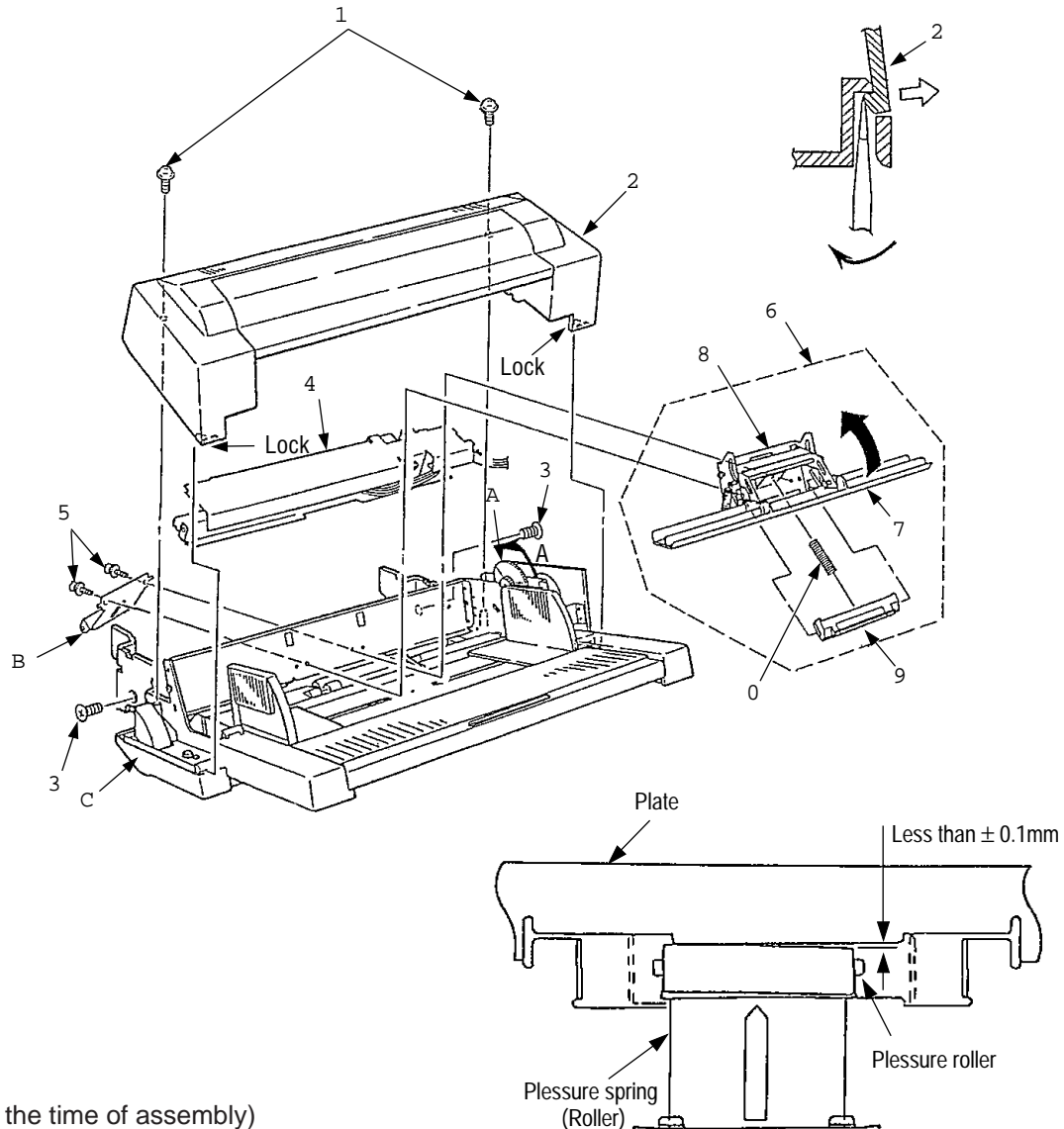
3.3 Parts Replacement Methods

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



3.3.1 Separator

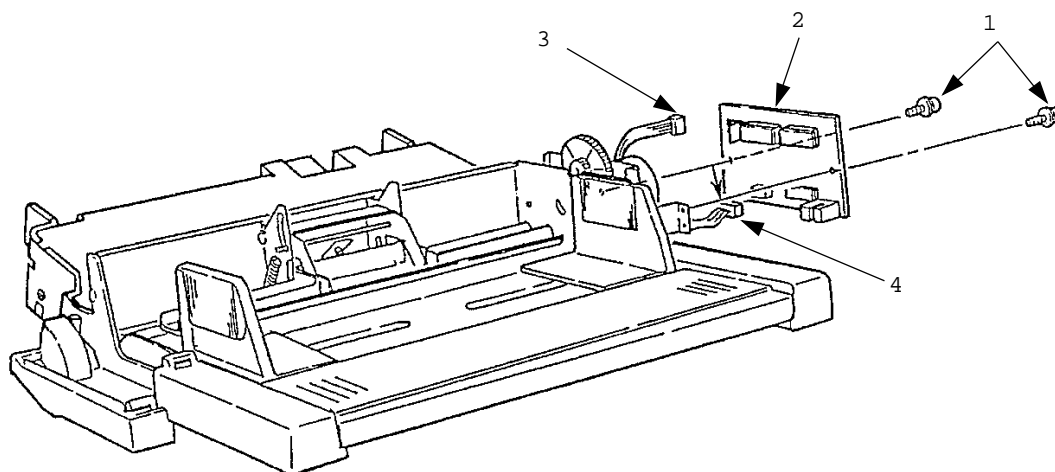
- (1) Turn the printer power off and remove the Multi Feeder.
- (2) Disengage the link and hopper cover.
- (3) Remove two screws 1, disengage two locks of the upper cover 2 using a flat-head screwdriver, and remove the upper cover 2.
- (4) Remove two pan-head screws 3 and remove the cover frame 4.
- (5) Disengage the plate and the frame. (Refer to 3.3.6.)
- (6) Remove two screws 5 and remove the separator assy 6.
- (7) Lift the paper stay 7 and disengage it from the separator bracket 8, then remove the separator 9. The spring 0 comes off at the same time, so be careful not to lose it.



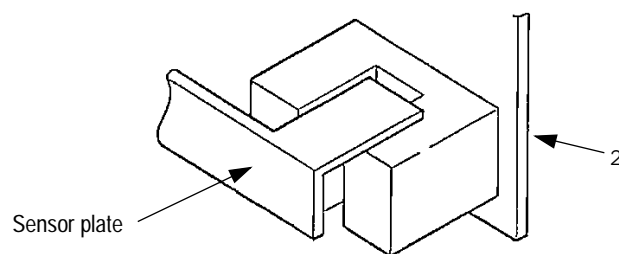
When the secondary stage of idle gear A is turned in the A direction after engaging the plate and the frame, the inclination of the pressure roller B is less than ± 0.1 mm against the plate C, as shown in the right figure. When the inclination of the pressure roller exceeds ± 0.1 mm, fine-adjust it by pressing with fingers, as shown in the left figure, with the pressure spring (roller) installed.

3.3.2 AOLE-PCB

- (1) Remove the upper cover (see 3.1.1 (1) to (3)).
- (2) Remove two screws 1 and remove the AOLE-PCB 2.
- (3) Remove the connector 3.
- (4) Remove the connector 4.

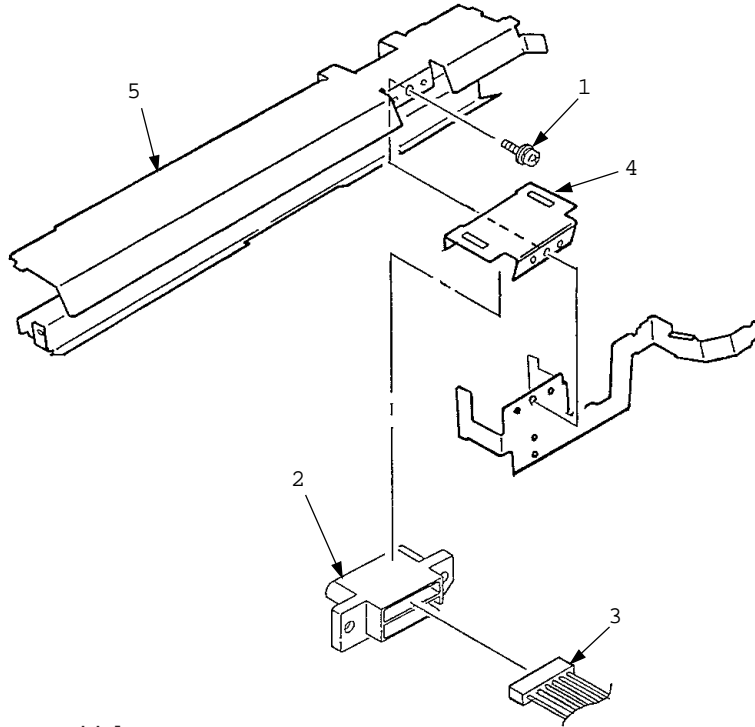


Caution: Be careful to set the sensor plate properly when mounting AOLE-PCB.



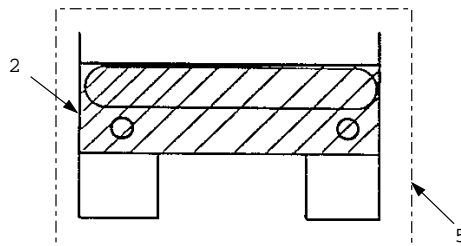
3.3.3 Square-shaped connector

- (1) Remove the upper cover and remove the cover frame 5 (see 3.3.1 (1) to (4)).
- (2) Remove the AOLE-PCB (see 3.3.2).
- (3) Remove the screw 1 and remove the square-shaped connector 2.
- (4) Using the connector remover, remove the nylon cord 3 from the square-shaped connector 2 .

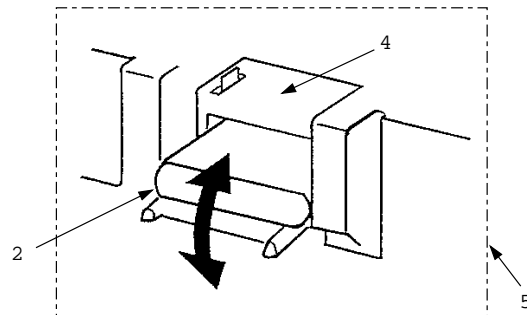


[Confirmation after assembly]

1. The square connector 2 should be horizontal to the cover frame 5.

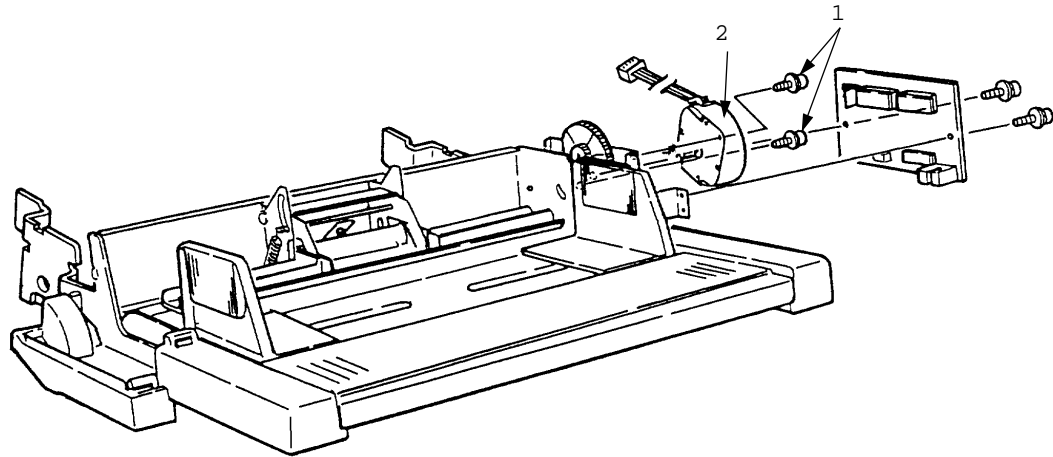


2. The square connector 2 should be hooked on the connector spring 4 and move smoothly.



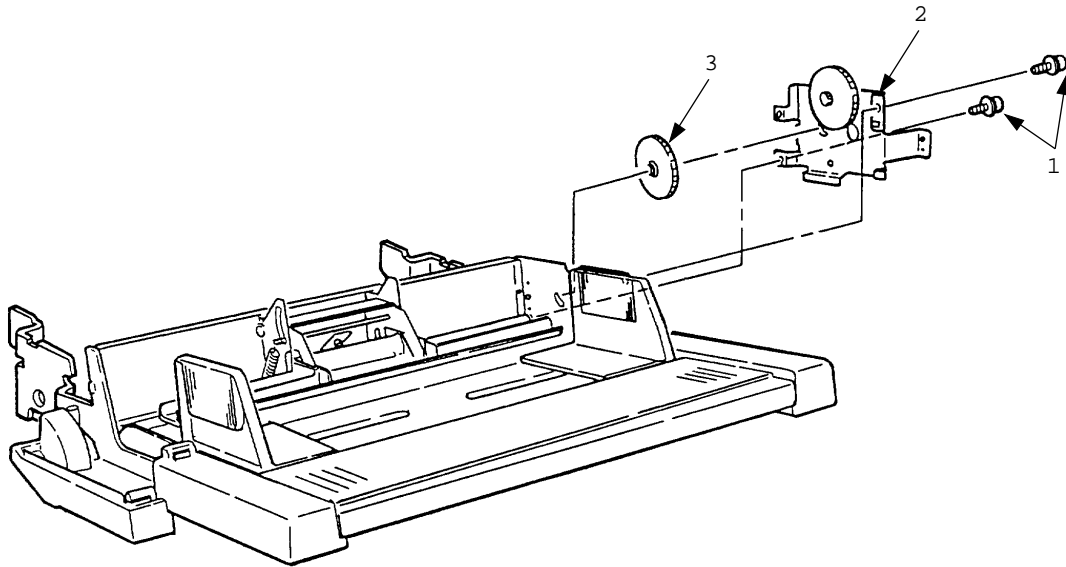
3.3.4 Hopping Motor

- (1) Remove the upper cover (see 3.3.1 (1) to (3)).
- (2) Remove the AOLE-PCB. (see 3.3.2)
- (3) Remove two screws 1, then remove the hopping motor 2.



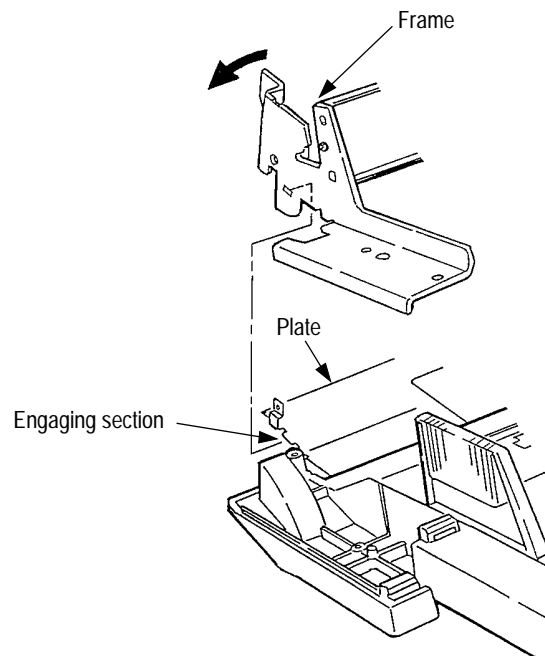
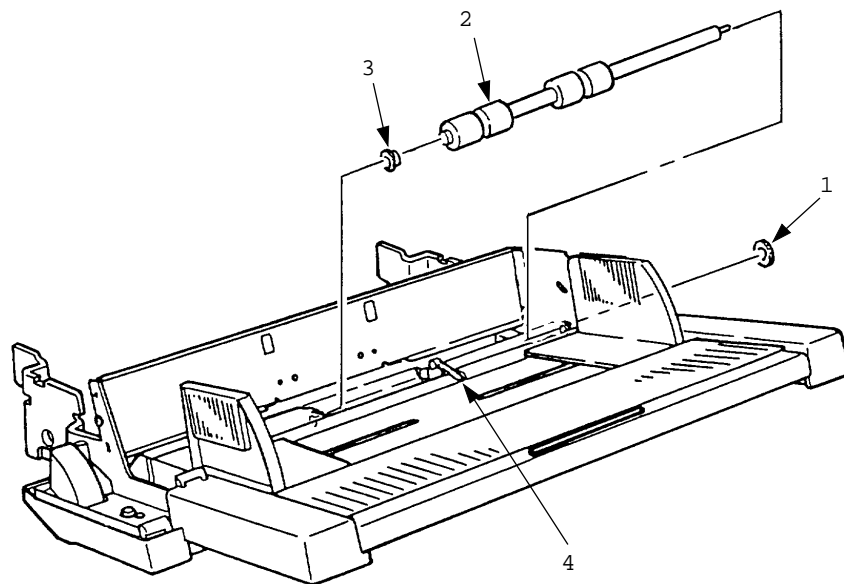
3.3.5 Planet gear

- (1) Remove the upper cover (see 3.3.1 (1) to (3)).
- (2) Remove the AOLE-PCB (see 3.3.2).
- (3) Remove two screws 1, then remove the motor bracket assy 2 and the planet gear 3.



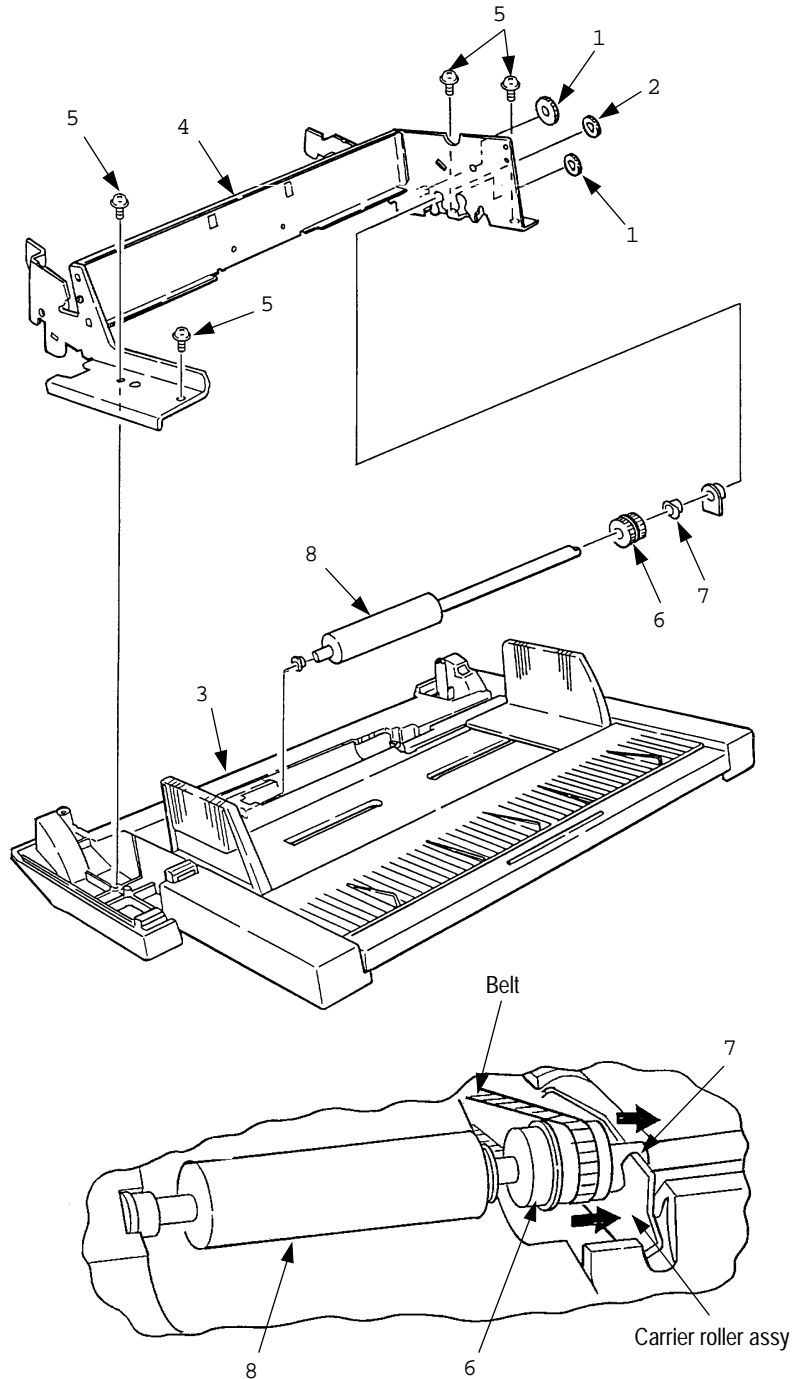
3.3.6 Roller B

- (1) Remove the upper cover (see 3.3.1 (1) to (3)).
- (2) Disengage the plate and frame (on both sides).
- (3) Remove the separator assy (see 3.3.1 (4) to (5)).
- (4) Remove the AOLE-PCB (see 3.3.2).
- (5) Remove the motor bracket assy (see 3.3.5).
- (6) Remove the gear 1.
- (7) Shift the roller B 2 to the right, lift it by holding on its left side, and pull it out to the left side. The bearing 3 also comes off at the same time, so be careful not to lose it. Further, pay special attention to make sure that you do not damage the sensor lever 4 while going through this procedure.



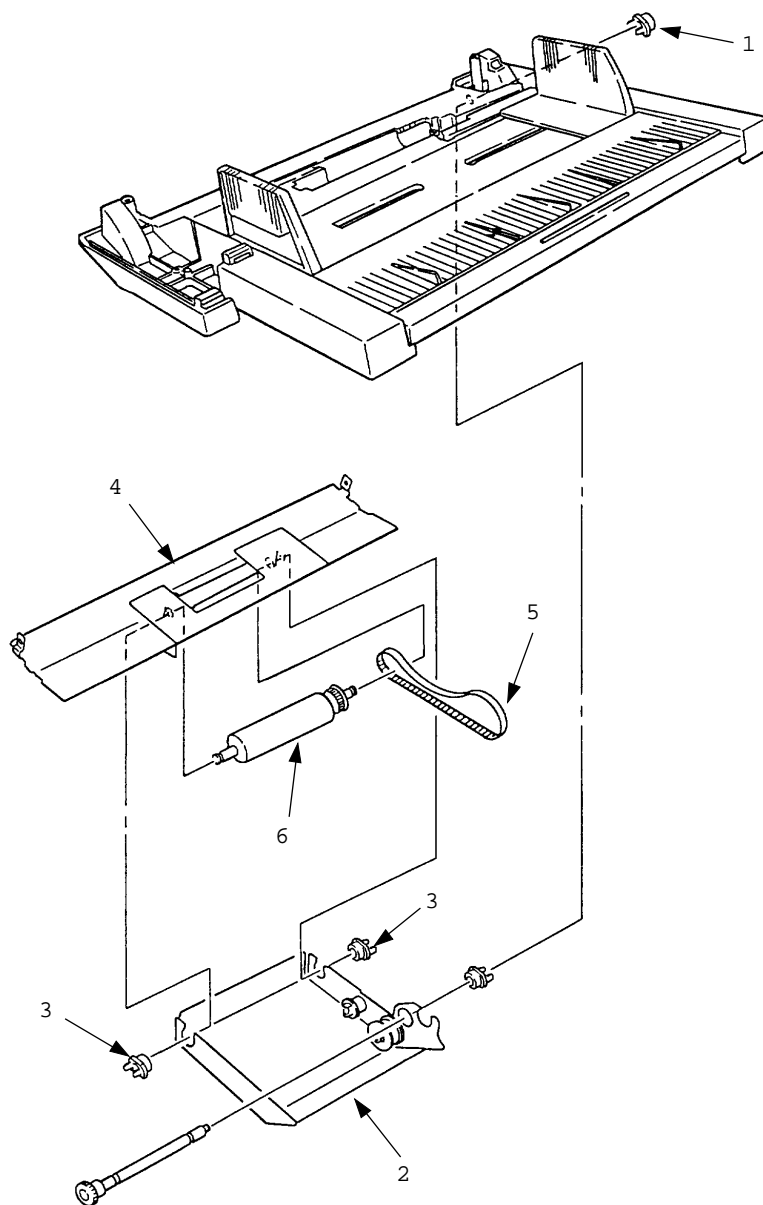
3.3.7 Roller A

- (1) Remove the motor bracket assy (see 3.3.5).
- (2) Remove two gears 1 and then another gear 2.
- (3) Disengage the plate 3 and the frame 4.
- (4) Remove four screws 5 and remove the frame 4 (see 3.3.6).
- (5) Move the belt to the right and remove it from the one-way pulley 6.
- (6) Move the carrier roller assembly to the right, and remove it from the shaft 7.
- (7) Move the roller A 8 to the right, lift its left side, and then pull it off to the left. (Be careful not to lose the shaft 7 being removed together).



3.3.8 Mini pitch belt & Feed roller

- (1) Remove the roller A (see 3.3.7).
- (2) Remove the bearing 1 and remove the feed roller assy 2.
- (3) Remove two bearings 3 and remove the plate 4.
- (4) Remove the mini pitch belt 5 and the feed roller 6.



4. Troubleshooting

4.1 Precautions Prior to Troubleshooting

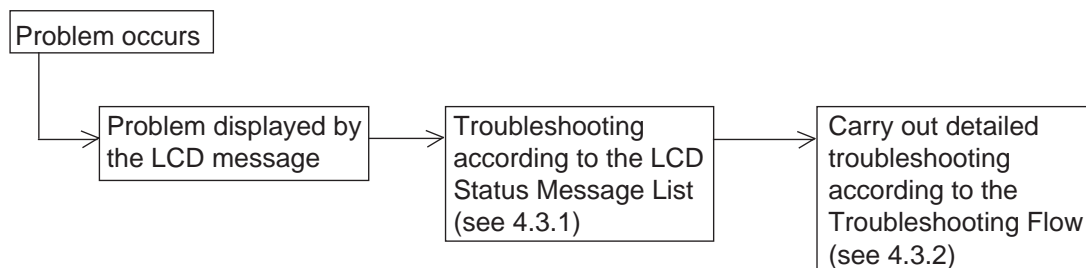
- (1) Go through the basic checking items provided in the Operator Guide.
- (2) Obtain detailed information concerning the problem from the user.
- (3) Go through the checking in the conditions similar to that in which the problem occurred.

4.2 Preparations for Troubleshooting

- (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.

4.3 Troubleshooting Method

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



4.3.1 LCD Status Message List

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

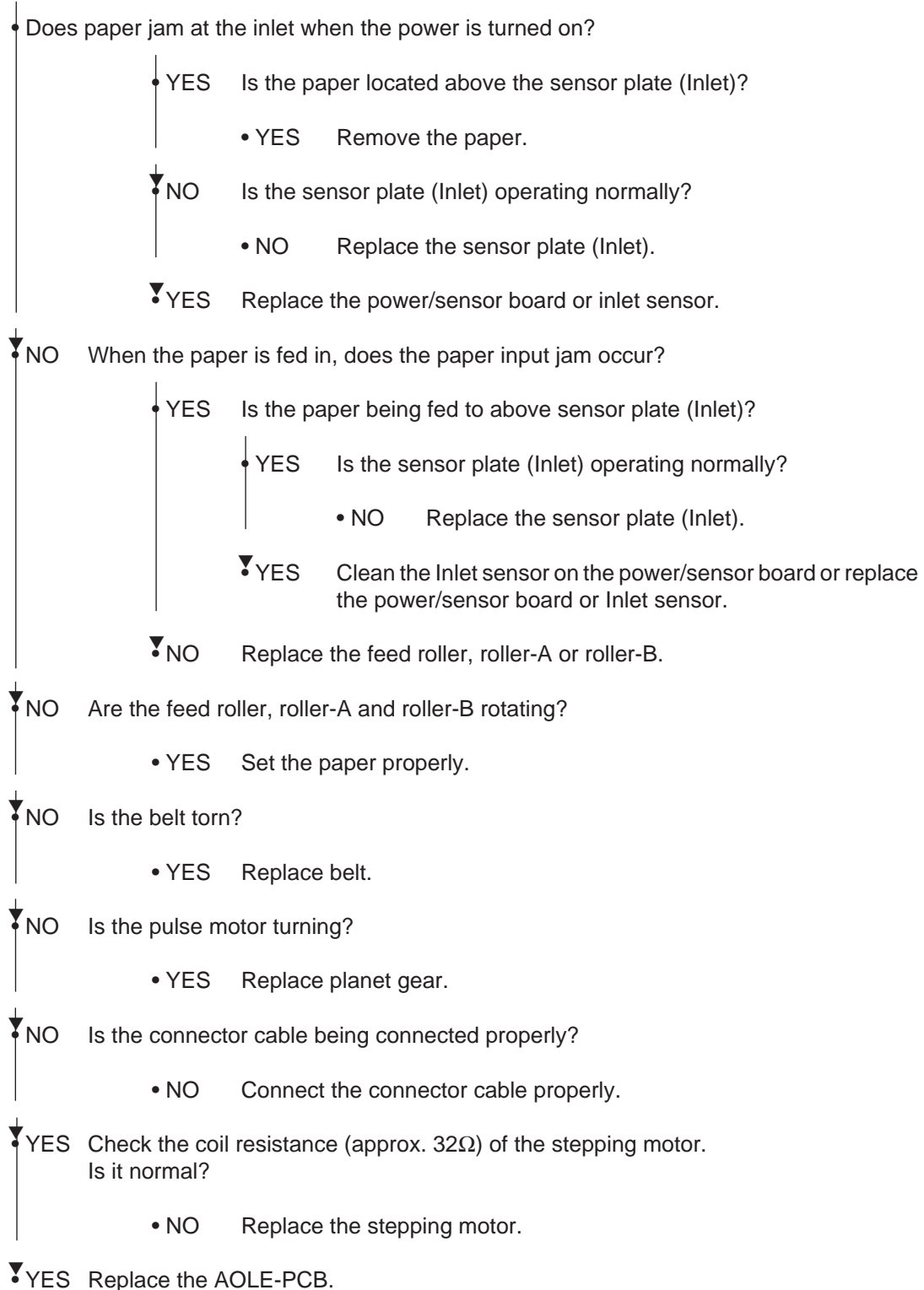
Table 4-1

Classification	LCD Status Message	Description	Recovery method
Jam error	<div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">PAPER INPUT JAM CHECK FEEDER</div> <div style="border: 1px solid black; padding: 2px;">PAPER FEED JAM CHECK FEEDER</div>	Notifies of occurrence of jam while the paper is being fed from the Multi Feeder.	<ul style="list-style-type: none"> • Check the paper in the Multi Feeder. Carry out the recovery printing by opening the cover, removing jammed paper and closing the cover, and then turning the error display off. • When the problem occurs frequently, to through the Troubleshooting.
Paper size error	<div style="border: 1px solid black; padding: 2px;">ERROR PAPER SIZE CHECK FEEDER</div>	Notifies of incorrect size paper feeding from the Multi Feeder.	<ul style="list-style-type: none"> • Check the paper in the Multi Feeder. Also check to see if there was a feeding of multiple sheets. Carry out the recovery printing by opening the cover, removing paper and closing the cover, and then turning the error display off.
Tray paper out	<div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">PAPER OUT mmmmmmmm FEEDER</div> <p>mmmmmmmm: Paper size in the tray being selected</p>	Notifies of no paper state of the Multi Feeder.	<ul style="list-style-type: none"> • Load the paper in the Multi Feeder.
Interface Timeout	<div style="border: 1px solid black; padding: 2px;">ERROR CONTROLLER 81</div>	Notifies of occurrence of interface timeout between the printer and the Multi Feeder.	<ul style="list-style-type: none"> • Verify connection of AOLE-PCB and square-shaped connector. Replace the square-shaped connector if necessary. • Replace AOLE-PCB.

4.3.2 Troubleshooting Flow

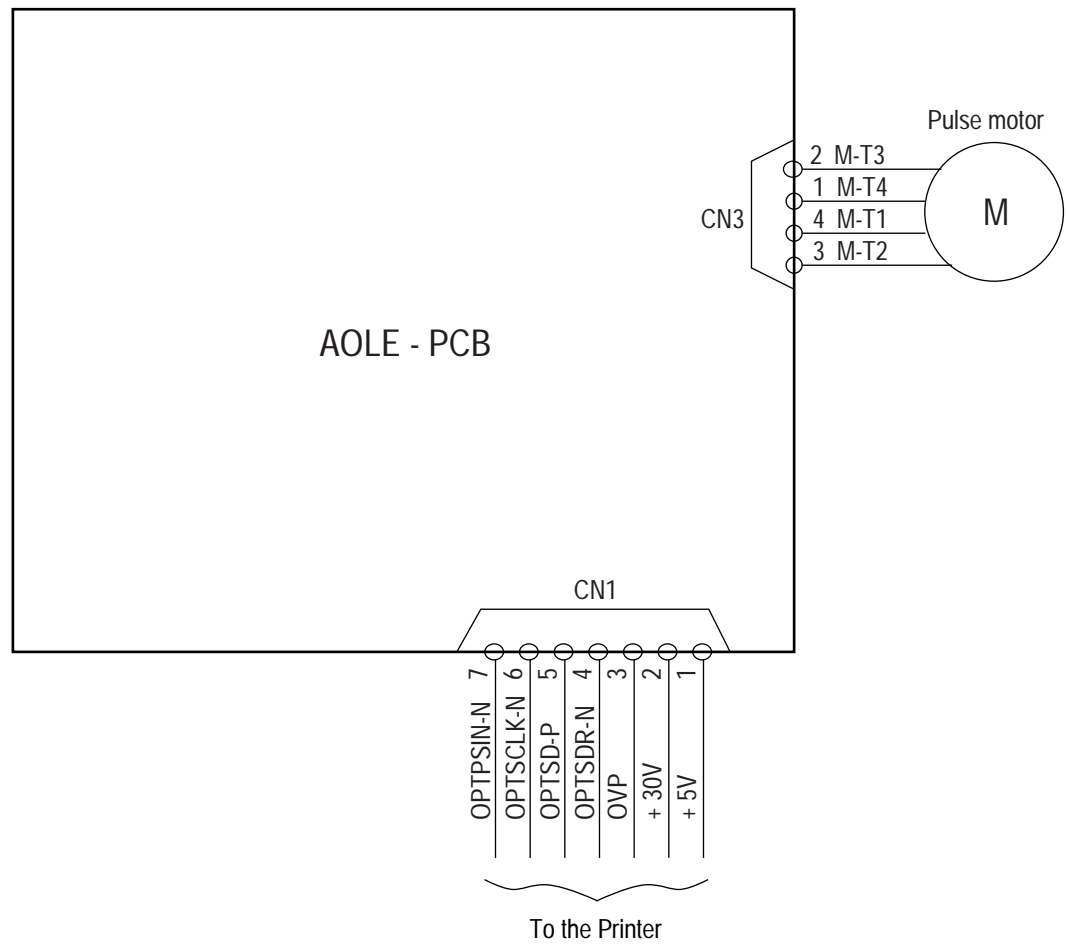
- (JAM error)

Paper Input Jam



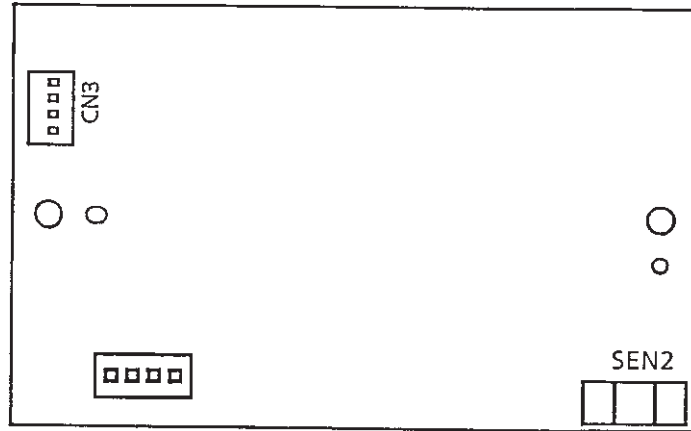
5. Connection Diagram

5.1 Interconnection Diagram



5.2 PCB Layout

AOLE-PCB



6. Parts List

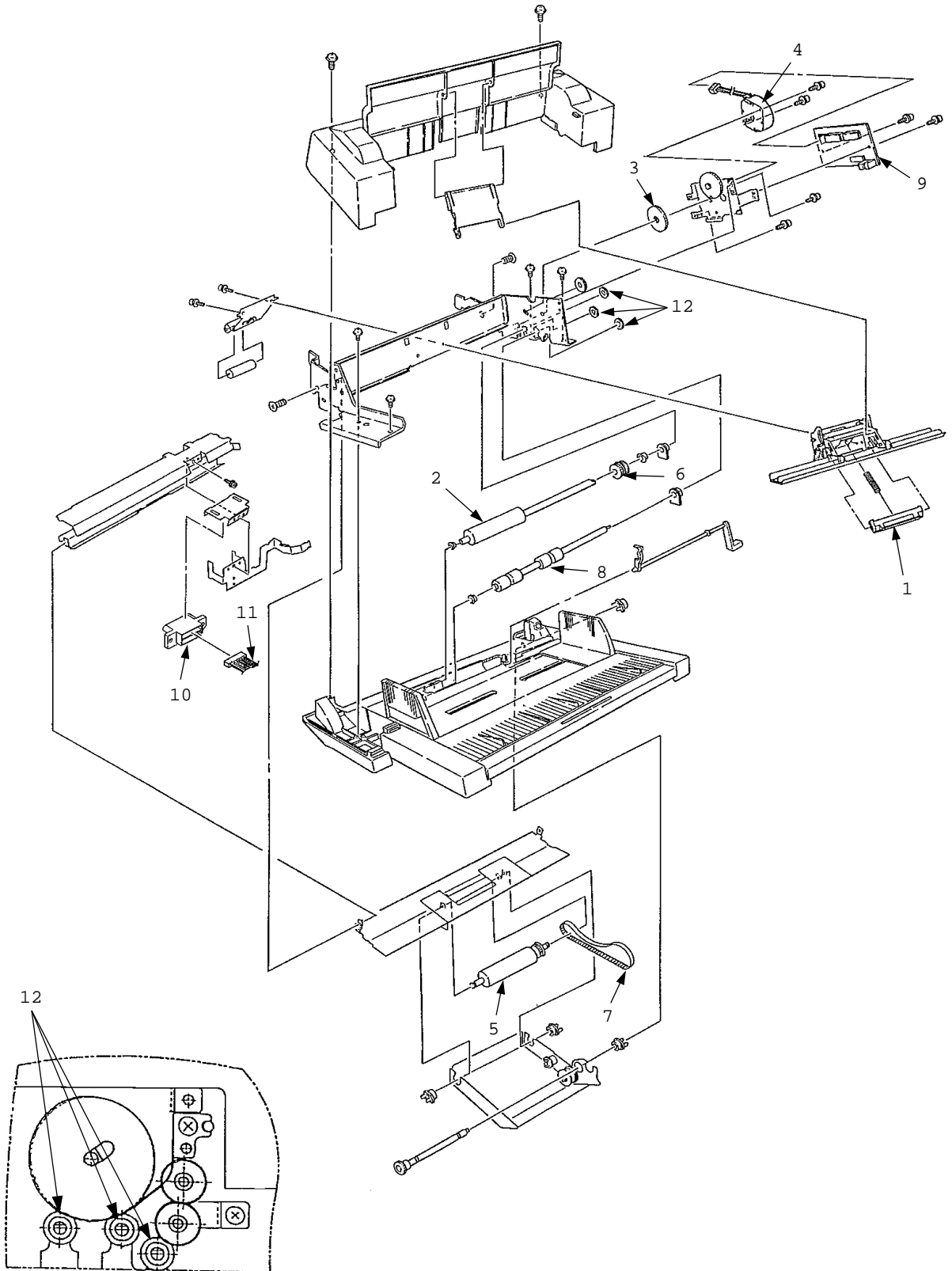


Table 6-1 Multi Feeder

No.	Description	Part No.	Q'ty	Remarks
1	Separator (Multi-Prps Fdr)	4PP4083-5544G1	1	53344201
2	Roller: A (Multi-Prps Fdr)	3PB4083-5514P1	1	53343801
3	Gear: Planet (Multi-Prps Fdr)	4PP4083-5520P1	1	51229601
4	Motor: Registration Stepper	4PB4083-6075P1	1	56510701
5	Roller: B (Multi-Prps Fdr)	3PB4083-5524P1	1	53343901
6	Pulley: One-Way (MPFdr)	4PB4043-4614P1	1	51235701
7	Belt: Mini Pitch (MPFdr)	4LP-1313-338	1	51304901
8	Roller: Feed (MPrps Fdr)	4PB4043-4743P1	1	50409701
9	PCB: AOLE (MPrps Fdr)	4YA4046-1647G11	1	55077601
10	Connector: Square Shaped	220A1866P0141	1	56730641
11	Cord: Connector (MPFdr)	4YS4011-4448P4	1	56730804
12	Gear: Stirrer Roller	4PP4083-2394P1	3	51239301

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APPENDIX D: LOCALTALK SERIAL INTERFACE (OKIPAGE16N/PS ONLY)

1) Connector

- Printer side : 8-pin mini DIN receptacle
Type TCS7187-01-201 (made by HOSHIDEN) or equivalent
- Cable side : 8-pin mini DIN plug
Type TCP7180-01-110 (made by HOSHIDEN) or equivalent

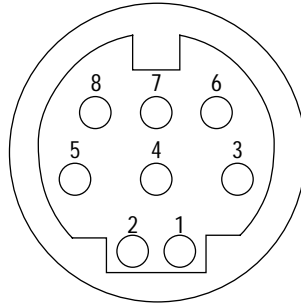
2) Cable

- To be shielded cable
- Cable length
LocalTalk
Defined max. length : 1,000 ft. (305 m) (It is the maximum length for a LocalTalk network.)
Recommended max. length : 10 ft. (3 m) (For noise prevention)

3) Interface signal

Pin No.	Signal Name	Abfreviation	Signal Direction	Description
1	–			(Not used)
2	Sync. signal	SYNC	← PR	(Not used)
3	Transmit data minus	TxD-	← PR	Transmit data minus polarity
4	Signal ground	SG		Signal ground
5	Receive data minus	RxD-	→ PR	Receive data minus polarity
6	Transmit data plus	TxD+	← PR	Transmit data plus polarity
7	–			(Not used)
8	Receive data plus	RxD+	→ PR	Receive data plus polarity

- Connector Pin Arrangement



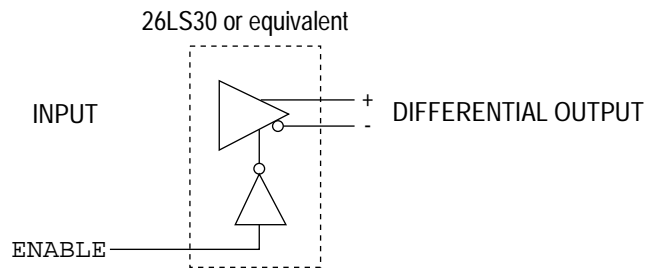
(As viewed from the cable side)

- 4) Signal level

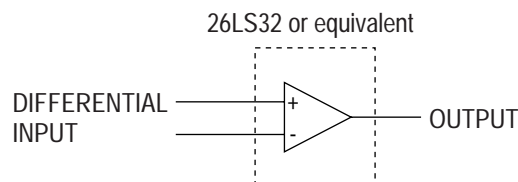
Differential output : $\pm 5V$
 Differential input : $\pm 7V$

- 5) Interface circuit

- a) Receiving circuit



- b) Transmitting circuit



- 6) Receive margin

- 7) Communication protocol

- LocalTalk I/F
 LocalTalk protocol

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**OKIPAGE 16n
Service Manual**

Part Number 59274401

Printed in the USA