# S900 Service Manual

031103A

# OKI®

# Contents

# 1. INTRODUCTION

This manual is intended to be used by maintenance engineers. It describes areas to be maintained, the detailed installation, and the component replacement procedures as well as the main trouble shooting guides.

Please take your time to read this manual thoroughly to obtain comprehensive knowledge about the S900 before serving the unit.

## 1.1 GENERAL NOTES FOR SERVICING

(1)    Before trying to disassemble the S900, make sure the power supply cord of the S900 is disconnected from the power outlet. Under any circumstance, do not remove from or install the PWBs or connectors onto the S900 with the power switch turned ON.

(2)    Use caution not to drop small parts or screws inside the unit when disassembling and reassembling. If left inside, they might cause the malfunction of the unit.

(3)    Do not pull the connector cable when disconnecting it. Hold the connector.

(4)    When carrying PWBs or the scanning head unit, put it in an anti-static bag.

(5)    Keep the document table glass surface always clean. If contaminated, use a dry clean cloth for cleaning.

(6)    Use caution not to injure your fingers or hands when disassembling or reassembling the unit.

## 1.2    GENERAL DESCRIPTION

The S900 provides you a fast and affordable access to color digital copying by simply connecting the product to a color printer. This new way to make digital copies is cost effective, and it produces dramatically better copies result than regular analog copiers. The S900 is also a high-quality scanner when it is connected to a computer through a USB cable.

## 1.3    SPECIFICATIONS

| General Specifications | |
|---|---|
| **Items** | **Specifications** |
| Model Type | A3, Digital ScanCopier |
| System Features | ■    Up to A3<br>■    Local copy executed by connecting to a OKI color printer |
| Output Quality | 600 dpi, 24-bit color |
| Paper Size | Up to A3 |
| LCD | 240*64 dot Graphic display |
| External Connection | 1.   IEEE 1394 (to connect to printer to make copies)<br>2.   USB 2.0 (to connect to PC to scan)<br>3.   RJ-45 (Network connection, to update printer profile and firmware)<br>4.   ADF port (to connect to auto document feeder to copy or scan multi-page documents) |
| CPU | 64 MIPS CPU |
| Memory Size | System: 128MB, Image buffer: 64 MB |
| ADF Capacity | 50 pages |
| ADF Document Weight/Thickness | 14 – 28 lb. /0.002" – 0.006" |
| ADF Paper Feed | Face Up |
| Flatbed Paper Feed | Face Down |
| Power Requirement | 24V DC, 2A external power adapter |
| Power Consumption | <36 W (operating)<br><24 W (standby)<br><18 W (power saving) |
| Humidity | 20% to 80% |
| Environment | |
| Operation Temperature | 10°C to 35°C (50°F to 95°F) |
| Storage Temperature | -10°C to 50°C (14°F to 122°F) |
| Dimension | 589 x 502 x 318mm (23.2" x 19.75" x 12.5") (with ADF) |
| Weight | 11.4 kg (25.1 lb) (with ADF) |
| MTBF | 5,000 hours |
| MTTR | 30 min |
| Life of Lamp | 25,000 hours |
| Scanner Life | 200,000 (flatbed) scans, or 5 years |

| Copy Specification | | |
|---|---|---|
| Printer Language | PCL | |
| Connector Interface | IEEE 1394 Cable | |
| Copy Area | 297 x 431 mm (11.19" x 16.97") | |
| Multiple Copies | Up to 99 | |
| Copy Mode | Speed, FineText, Photo | |
| Enlarge / Reduce | Whole Page (93%)<br>25%~400% in 1% increment/decrement<br>Pre-set Scales | |
| Copy Features | Paper Size Auto Detection (A4 Landscape, A4 Portrait, A3)<br>Density Control<br>Copy Count up to 99 | |
| Media Type | Plain Paper, Ultra-heavy, Transparency | |

# 2. UNPACKING, INSTALLATION, AND TRANSPORTATION

**2.1 Precautions of Installation**
**2.2 Unpacking Procedure**
**2.3 Installation**
**2.4 Placing the Original**
**2.5 Transportation**

## 2.1 PRECAUTIONS OF INSTALLATION

Pay attention to the following matters before unpacking and installation.

- Do not install in a place where vibration may occur.
- Keep the S900 out of direct sunlight. Do not install near a heat source.
- Do not place the S900 around materials that shut off the circulation of air.
- Do not install in a humid or dusty place.
- Use care not to scratch the glass surface of the S900 or the document holding pad with clips or staples.
- Do not use a wall socket on the same circuit as devices that may generate noise, for example, an air-conditioner, etc.
- Only use the DC adapter (model name ADP-50ZB made by Delta Electronics, Inc.) included with the machine. Using other DC adapters may damage the machine and void the warranty.
- Use a suitable DC power source.
- Place the S900 on a level surface.

## 2.2 UNPACKING PROCEDURE

Unpack the S900 according to the following procedure.

- Remove the packing material.
- Remove the S900 from the shipping container.
- Remove the S900 from the PVC bag.
- Check the items against the following illustration.
- For any missing items, please contact the nearest dealer or distributor.

Note:  Keep all the packing material in case you may need to return the S900.
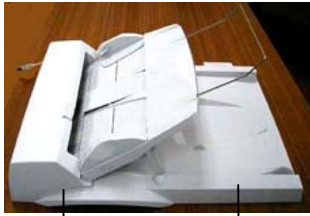
1. Auto Document Feeder (optional)    5. IEEE1394 cable (for printer connection)
2. S900 main unit    6. Power adapter
3. USB cable (for computer
   connection)    7. Cross cable
4. CD (service tool)    8. Power Cord (US, UK, Europe, Australia)

## 2.3    INSTALLATION

## 2.3.1 UNLOCKING THE SCAN UNIT

The scan unit is locked during transport to protect the scanning mechanism from being damaged. *Be sure to unlock the scan unit before using the machine.*

1). Locate the lock switch at the left side of the machine.

2). Push the lock switch down to unlock the scan unit.
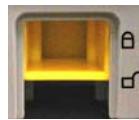
Locked                    Unlocked
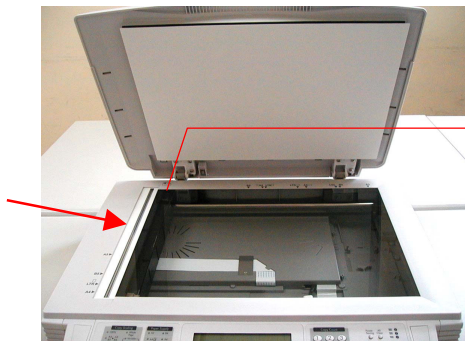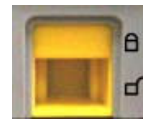
The scan unit at this position before locking

Note:
If you need to move your S900 for repair or any other reason, be sure to lock your S900 before moving. To lock your S900,

1.    Turn off your S900.

2.    If the scanning head is not located at the front of the glass, turn the S900 on to return the scanning head to the front of the glass. After the scanning head is returned to the home position, turn the power switch off.

3.    Move the lock switch to the locked position.

## 2.3.2 CONNECTING THE IEEE 1394 CABLE

1.	Connect one end of the IEEE 1394 cable (included) to your printer.

2.	Connect the other end to the printer port of your S900.



## 2.3.3 CONNECTING THE ADF CABLE (OPTIONAL)

Connect the ADF cable, which is attached to the document cover to the ADF port.

## 2.3.4 SETTING UP THE OPTIONAL ADF (AUTO DOCUMENT FEEDER)

1.      Raise the ADF Tray to about 45 degrees.

2.      Pull down the wire leg beneath the ADF Tray.

3.      Pull out the ADF Tray extension to its full length.



ADF Tray

ADF Tray Extension

ADF Wire Legs

## 2.3.5 CONNECTING THE POWER AND TURNING ON THE MACHINE

1.      Press the power switch to the "0" position to turn off your S900.

2.      Connect the small end of the power cable to the power port of your S900.



3.      Connect the other end to appropriate power outlet.
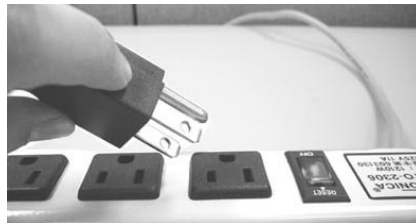
4.      Press the power switch to the "I" position to turn on your S900. After showing the warming up message, the LCD display prompts the Copy ready status.

## 2.4    PLACING THE ORIGINAL

You can load the paper from the S900 either in the ADF (Automatic Document Feeder) or on the glass. If you need to copy multiple pages, please load your papers in the ADF. The ADF can hold up to 50 pages at one time. If you need to send pages from books, newspaper clippings, paper with wrinkles or curls, please place your paper on the glass.

## 2.4.1 PLACING YOUR DOCUMENT(S) ON THE GLASS

1.      Open document(s) cover to reveal the glass.
2.      Place your document(s) with the text **FACE DOWN** on the glass and align the document(s) in the home position as shown in below.
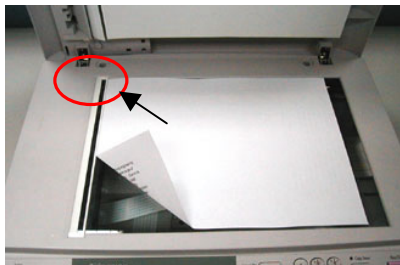
3.      Close the document cover.

## 2.4.2 PLACING DOCUMENT(S) IN THE ADF

### 2.4.2.1 NOTICE ON USING THE ADF

Before using the ADF, please make sure that your paper meets the following specifications:

- Document(s) can range in size from 4.5 by 5.5 inches to 11.69 by 16.54 inches (A3).
- Document(s) can range in weight from 14 to 28 lb. (0.002" to 0.006").
- Document(s) should be square or rectangular and in good condition (not fragile or worn).
- Document(s) should be free of curl, wrinkles, tears, wet ink, or punch holes.
- Document(s) should be free of staples, paper clips, and paper sticky notes.

### 2.4.2.2 PLACING DOCUMENT(S) IN THE ADF

**1.** Make sure your document is free of staples, paper clips and is not torn out.

**2.** If you have multiple pages, fan your document(s) to avoid occasional paper jam. The ADF can hold up to 50 pages at one time.

**3.** Place your document(s) with the text **FACE UP** in the ADF and make sure that the top of the pages is fed in first.

**4.** Adjust the Paper Guides to center the document(s) in the ADF.

## 2.5 TRANSPORTATION

To move the S900 from where it is installed, for repair or any other reason, make sure to observe the following conditions:

(1) Turn off the power of the S900.

If the scanning head is located at a place other than front of the glass, turn the S900 on to return the scanning head to the front of the glass. After the scanning head is returned to the home position, turn the power supply off.

(2) Move the lock switch to the locked position.

(3) Remove the power and printer cables.

(4) Put the S900 in the packing case with the packing material.

# 3. PARTS IDENTIFICATION

**3.1 External View**

## 3.1 EXTERNAL VIEW

## 3.1.1 FRONT VIEW



1. Document Cover
2. Control Panel

## 3.1.2 REAR VIEW
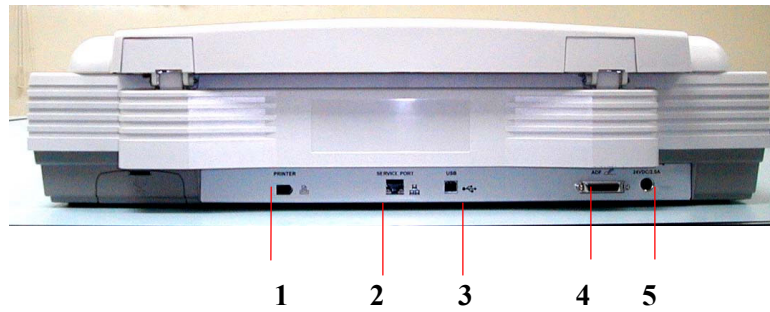


1. Printer Port
2. Service Port
3. USB Port
4. ADF Port
5. Power Jack

# 4.  THEORY OF OPERATION

## 4.1     INTRODUCTION
## 4.2 MAIN CONTROL UNIT

## 4.1 INTRODUCTION
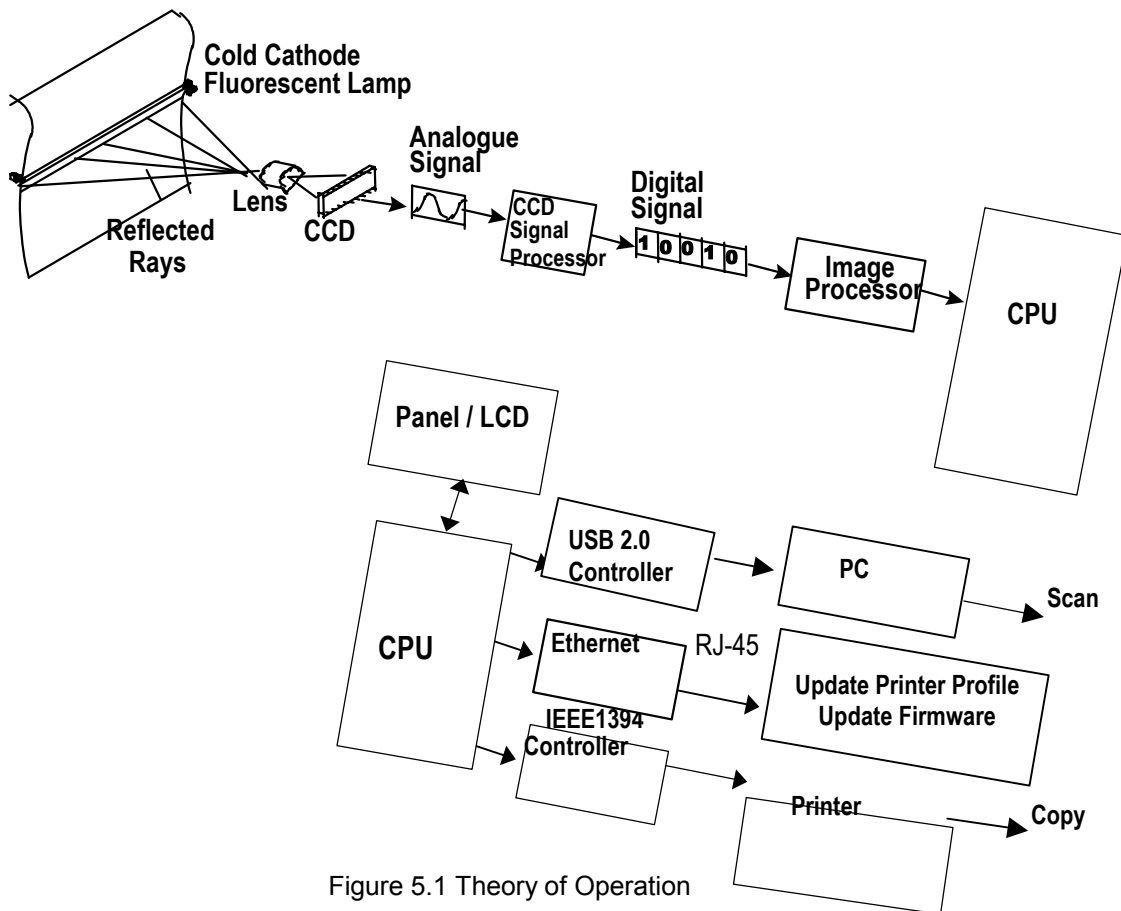


Figure 5.1 Theory of Operation

The reflected rays of the your original as shown in the above Figure 5.1 pass through the lens and creates an image on the CCD (Charge-Coupled Device). Then, according to the different light intensity perceived by the CCD, the CCD will transfer these data into a series of analog signals to the CCD signal processor, where the signals are turned into digital signals. These digital signals flow to the image processor and store into the CPU (Central Processing Unit). Through the commands from the Control Panel, the digital signals may go to the IEEE 1394 Controller to printer to make copies, or go to the USB controller to PC to make scan a scan.

## 4.2     MAIN CONTROL UNIT

## 4.2.1 SYSTEM DIAGRAM

Figure 5.2 shows the system block diagram.

To PC

| IEEE 1394 Controller | USB 2.0 Controller | Main Board |
| --- | --- | --- |

Main Board

Control Section

24V → Power Adapter

LCD Display & Control Panel

CPU

Mac/Phy. → RJ-45

Image Processor

CCD Signal Processor

ADF

Optical Unit

Inverter    Lamp Unit
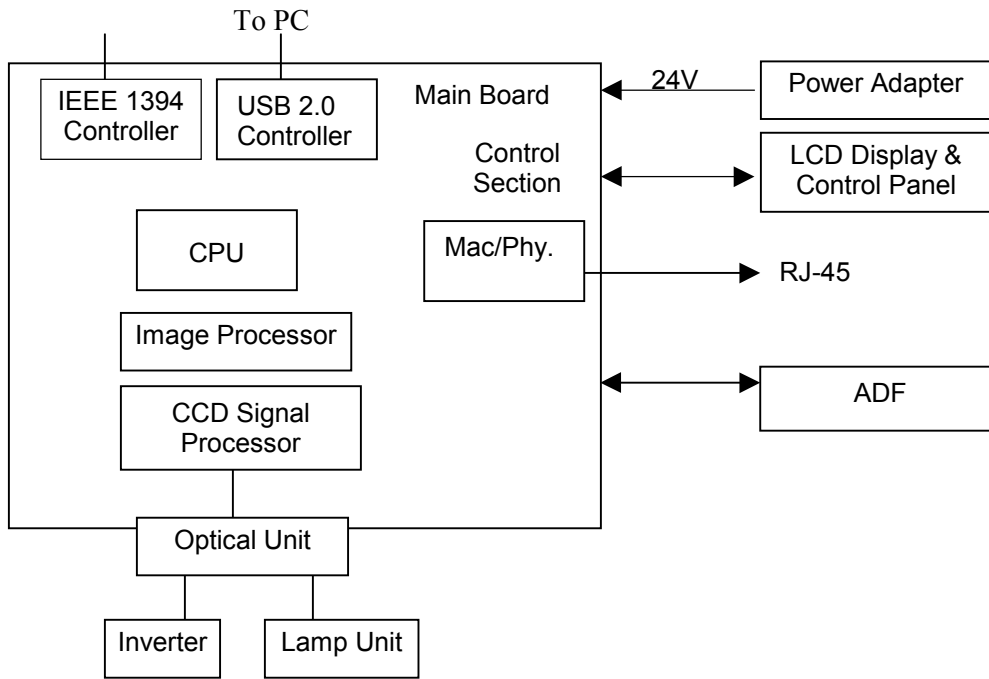
Figure 5.2 System block diagram

### 4.2.2 MAIN CONTROL CIRCUIT

MIPS CPU controls this S900. The CPU is configured with a 2.5MB external ROM, a 128MB external RAM working area.

**I/O Address Maps:**

- ROM Area:

Flash Layout

| 0x1FC00000 | | | | 0x1E000000 | | |
|---|---|---|---|---|---|---|
| | Loader | 256KB | | | System | |
| 0x1FC3FFFF | | | | | Firmware | |
| 0x1FC40000 | Scanner | 256KB | | 0x1E0FFFFF | Printer | |
| | Firmware | | | 0x1E100000 | Profile | |
| 0x1FC7FFFF | | | | 0x1E1FFFFF | | |

- External RAM Working Area:

| 0x00000000 | |
|---|---|
| | 128 MB |
| 0x07FFFFFF | |
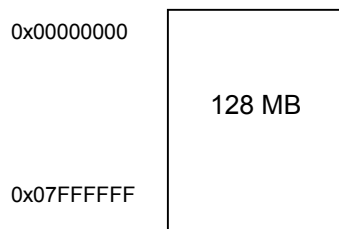
## 4.2.3 VIDEO CIRCUIT:

The video circuit of this S900 includes:

1. CCD driving circuit and motor control signal
2. CCD signal processing circuit.

1.   CCD Driving Circuit & Motor Control Signal
The CCD driving circuit is used to generate correct signals to the CCD, so that the CCD may generate the correct image data.

Signals for CCD:
Pin Assignment for CCD cable

| Pin No. | Name | Function |
|---------|------|----------|
| 1 | H24G | Motor Ground |
| 2 | H24G | Motor Ground |
| 3 | M_VREF | Motor Reference |
| 4 | INPOWER | Inverter Power |
| 5 | INPOWER | Inverter Power |
| 6 | CCDVCC | CCD Power Supply |
| 7 | SH- | Shift Gate |
| 8 | /HMSEN | Home Sensor |
| 9 | GND | Digital Ground |
| 10 | PH2- | Motor Phase One |
| 11 | PH1- | Motor Phase One |
| 12 | GND | Digital Ground |
| 13 | CLAMP | CCD Clamp Gate |
| 14 | RS- | CCD Reset Gate |
| 15 | B/W_SW | CCD Color and B/W Switch |
| 16 | CCDPOWER | CCD Power Supply |
| 17 | VOR | CCD Red Channel Output Signal |
| 18 | AGND | Analog Ground |
| 19 | VOG | CCD Green Channel Output Signal |
| 20 | AGND | Analog Ground |
| 21 | VOB | CCD Blue Channel Output Signal |
| 22 | AGND | Analog Ground |
| 23 | FMPH1 | Motor Control Signal |
| 24 | FMPH2 | Motor Control Signal |
| 25 | FMI01 | Motor Control Signal |
| 26 | FMI02 | Motor Control Signal |
| 27 | FMI11 | Motor Control Signal |
| 28 | FMI12 | Motor Control Signal |
| 29 | FMI21 | Motor Control Signal |
| 30 | FMI22 | Motor Control Signal |
| 31 | 24VM | Motor Power Supply |
| 32 | H24G | Motor Ground |

2. CCD signal processing circuit

CCD Signal Processor
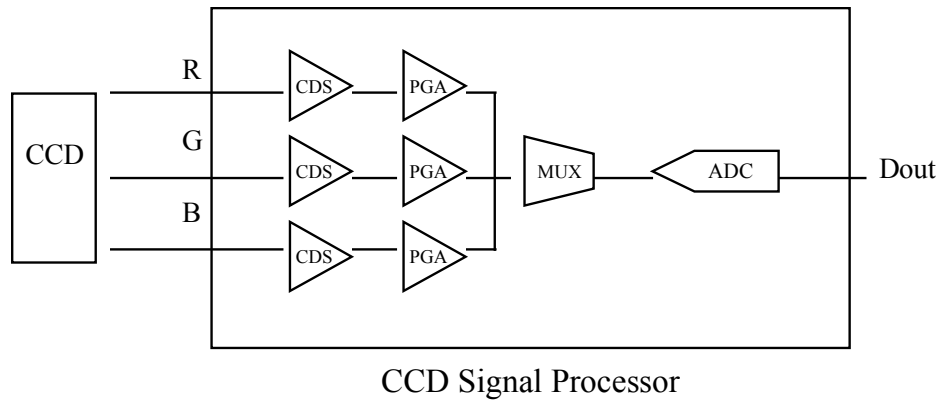
The CCD signal processor includes all the necessary circuitry to perform three-channel conditioning and sampling. The signal chain consists of three-channel correlated double sampling (CDS) and programmable gain adjustment of the CCD output (PGA) is a 16-bit analog to digital connector (ADC) quantizes the analog signal.

* PGA: Programmable gain amplifier

## 4.2.4 PANEL AND LCD MODULE CIRCUIT

The circuit for Panel and LCD module controls the function of the entire module including the LCD Display, the push button on the Control Panel, and LED display.

Pin assignment of LCD module

| Pin No. | Name | Function |
|---|---|---|
| 1 | D.G. | Digital Ground |
| 2 | KPDATA0 | Data Bus bit 0 |
| 3 | KPDATA1 | Data Bus bit 1 |
| 4 | D.G | Digital Ground |
| 5 | KPDATA2 | Data Bus bit 2 |
| 6 | KPDATA3 | Data Bus bit 3 |
| 7 | D.G. | Digital Ground |
| 8 | KPDATA4 | Data Bus bit 4 |
| 9 | KPDATA5 | Data Bus bit 5 |
| 10 | D.G. | Digital Ground |
| 11 | KPDATA6 | Data Bus bit 6 |
| 12 | KPDATA7 | Data Bus bit 7 |
| 13 | D.G. | Digital Ground |
| 14 | VCC | Digital Power Supply |
| 15 | VCC | Digital Power Supply |
| 16 | VCC | Digital Power Supply |
| 17 | VCC | Digital Power Supply |
| 18 | D.G. | Digital Ground |
| 19 | D.G. | Digital Ground |
| 20 | LCDA0 | LCD Address 0 |
| 21 | KPnECS | Panel Chip Select |
| 22 | KPnWE | Panel Write Enable |
| 23 | KPnOE | Panel Output Enable |
| 24 | /KBRD | Scan Key Read Chip Select |
| 25 | /KBWR | Scan key Write Chip Select |
| 26 | /LCDCS | LCD Module Chip Select |
| 27 | /LED0 | LED Chip Select 0 |
| 28 | /LED1 | LED Chip Select 1 |
| 29 | /LED2 | LED Chip Select 2 |
| 30 | D.G. | Digital Ground |
| 31 | - 8V | LCD Driver Power |
| 32 | /RESET | LCD Reset Signal |

## 4.2.5 SENSOR INPUT

The sensor input includes home position sensor, Hall effect sensor, and paper size sensor.

(1) Home position sensor

The home position of the carrier motor is detected by photo sensor. The photo transistor transmission to the photo sensor receiver circuit is shown below.
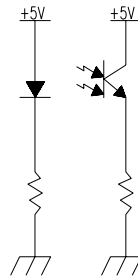


Figure 5.3 Home position sensor

The home position is detected when the carrier passes between the LED and the phototransistor.

(3)   Hall effect sensor

The switch status of the document cover is detected by Hall effect sensor.
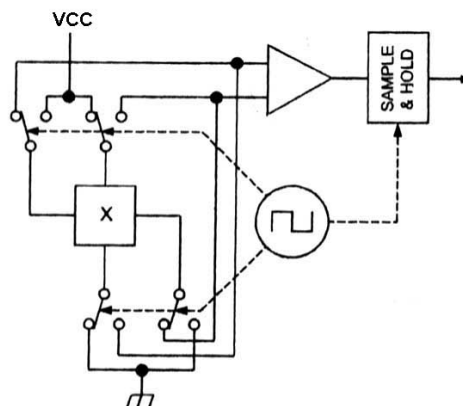


Figure 5.4 Hall effect sensor

(4)  Paper size sensor

The paper size is detected by IR sensor. The IR transistor transmission to the IR sensor receiver circuit is shown below.

Vcc

out

Figure 5.5 Paper size sensor
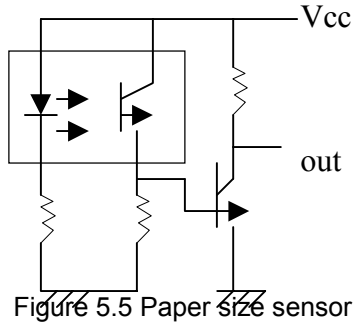
## 4.2.6 SUB POWER SUPPLY CIRCUIT

The sub power supply circuit is provided for the internal analog circuit. The circuit configuration is shown below:

```
                    ┌──────────┐      -8V       ┌──────────┐
+24V ───────────────│ Switching│      +3.3V     │  Linear  │
                    │ Regulator│      +5V  ──────│ Regulator│────── +1.5V
                    └──────────┘                 └──────────┘

                    ┌──────────┐
+24V ───────────────│  Linear  │      +5Va
                    │ Regulator│      +12V
                    └──────────┘
```
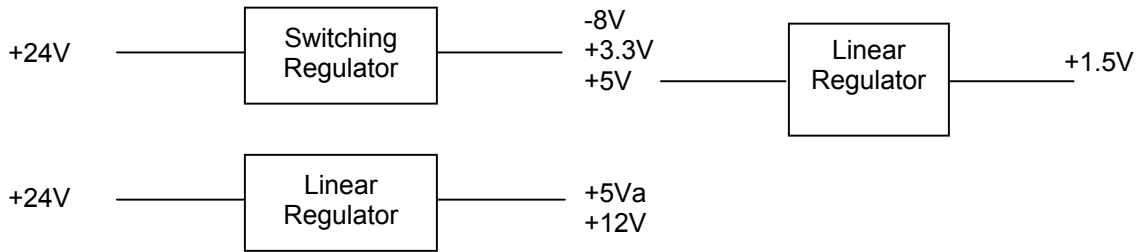
The sub power supply is used for CCD A/D, control panel, and logic circuits.

## 4.2.7 POWER SUPPLY

In this system, there is only one type of power supply. Please see Table 5.1 for details.

Table 5.1 Power Adapter

| Type Characteristic | Wall-mount |
|---|---|
| Input voltage range | 100-240V |
| Input current (max.) | 1.4A |
| Input frequency | 50-60Hz |
| Max. in-rush current(@115VAC, cold start) | 4A |
| Output voltage | +24Vdc |
| Min. load current | 0.7A |
| Max. load current | 1.4A |
| Total Power | 33.6W |

# 5. TROUBLESHOOTING

**5.1 Troubleshooting Flowchart**
**5.2 Tables**

This section locates and resolves the causes of trouble so the S900 is always in good working condition. The trouble modes, relevant units and maintenance methods are described below.

When a problem occurs, troubleshoot the problem according to the symptoms it shows.

Check the following first:

1. Is anything operating improperly?
2. Does the problem recur, or is it regular?

Figures 5.1 to 5.3 are troubleshooting flowcharts.

The causes and maintenance methods for each failure mode are described in Tables 5.1 through 5.7

## 5.1    TROUBLESHOOTING FLOWCHART

## 5.1.1 POWER ON TO S900  READY



Figure 5.1 Power on to S900 ready

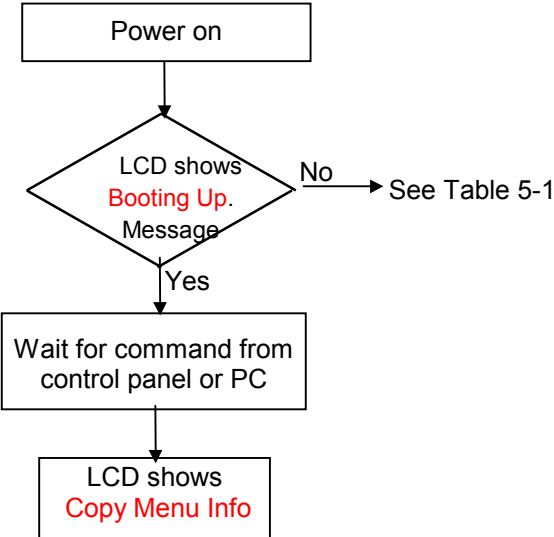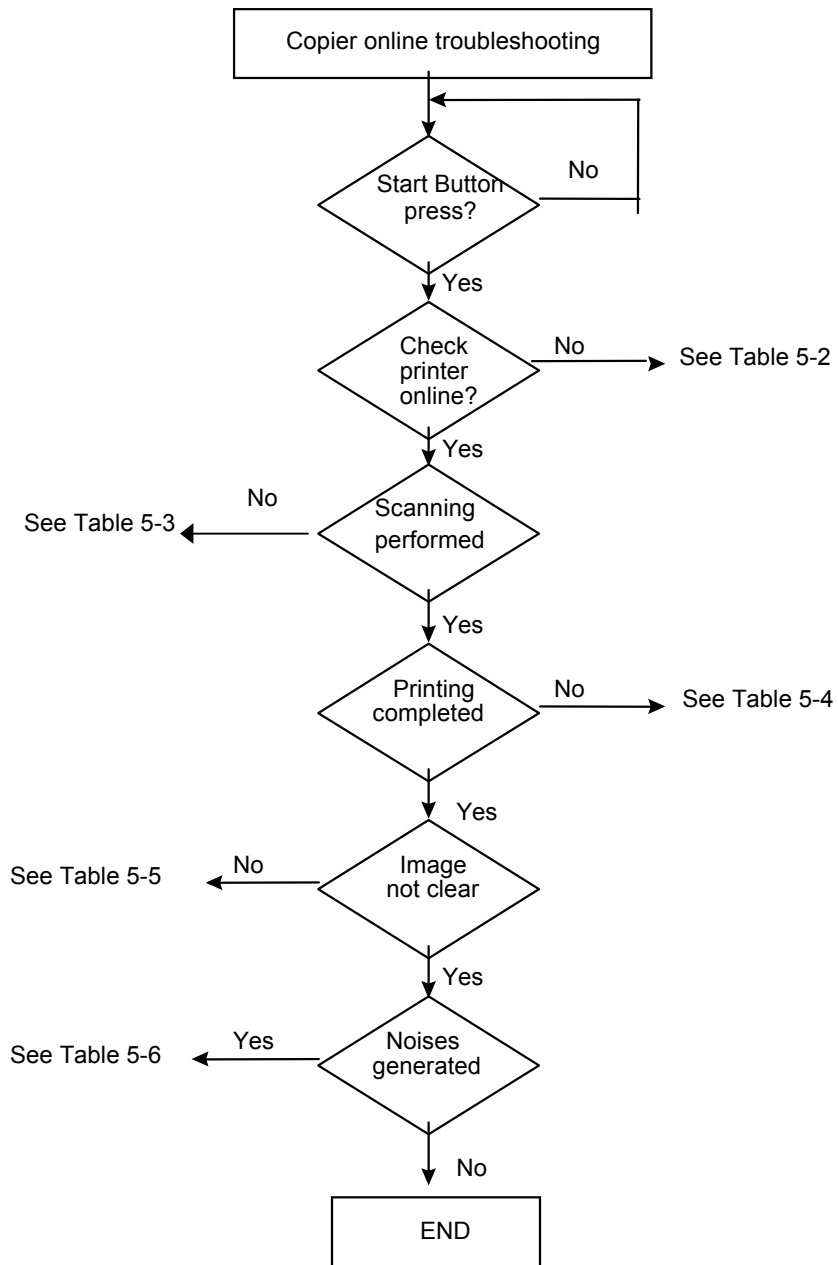## 5.1.2 COPY OPERATION

```
                    ┌─────────────────────────────────┐
                    │  Copier online troubleshooting  │
                    └─────────────────────────────────┘
                                   │
                                   ▼
                              ╱─────────╲           No
                             ╱ Start Button╲ ──────────────┐
                             ╲   press?    ╱               │
                              ╲─────────╱ ←────────────────┘
                                   │ Yes
                                   ▼
                              ╱─────────╲           No
                             ╱   Check    ╲ ──────────►  See Table 5-2
                             ╲  printer   ╱
                              ╲ online?  ╱
                               ╲───────╱
                                   │ Yes
                                   ▼
                    No        ╱─────────╲
   See Table 5-3 ◄──────────╱  Scanning  ╲
                             ╲ performed  ╱
                              ╲─────────╱
                                   │ Yes
                                   ▼
                              ╱─────────╲           No
                             ╱  Printing  ╲ ──────────►  See Table 5-4
                             ╲ completed  ╱
                              ╲─────────╱
                                   │ Yes
                                   ▼
                    No        ╱─────────╲
   See Table 5-5 ◄──────────╱   Image    ╲
                             ╲ not clear  ╱
                              ╲─────────╱
                                   │ Yes
                                   ▼
                    Yes       ╱─────────╲
   See Table 5-6 ◄──────────╱   Noises   ╲
                             ╲ generated  ╱
                              ╲─────────╱
                                   │ No
                                   ▼
                            ┌─────────────┐
                            │     END     │
                            └─────────────┘
```

Figure 5.2 Copy operation flow chart

## 5.1.3 CONTORL PANEL OPERATION

```
┌─────────────────────────────────────┐
│     Copier online troubleshooting   │
└─────────────────────────────────────┘
                │
                ▼
           ◇───────────◇        No
          │ Wait for key │──────────┐
          │   pressing   │          │
           ◇───────────◇           │
                │ Yes              │
                ▼
           ◇───────────◇    No
          │  LCD shows   │──────────►  See Table 5-7
          │   message    │
           ◇───────────◇
                │ Yes
                ▼
           ◇───────────◇
          │    Value     │
          │   setting    │
           ◇───────────◇
                │
                ▼
          ┌─────────────┐
          │     END     │
          └─────────────┘
```
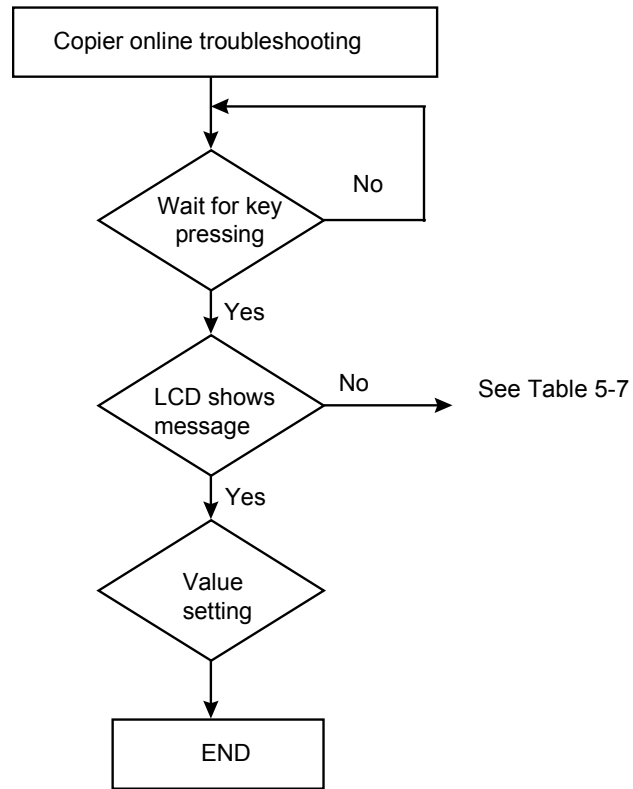
Figure 5.3 Control panel operation

## 5.2   TABLES

The following tables provide detailed troubleshooting information.

| | |
|---|---|
| Table 5.1 | The LCD does not display. |
| Table 5.2 | Printer does not react. |
| Table 5.3 | Optical path or hardware problem. |
| Table 5.4 | Printer does not print. |
| Table 5.5 | Image not clear. |
| Table 5.6 | Noise generated. |
| Table 5.7 | LCD does not show message after command. |
| Table 5.8 | S900 is not connected to the network |

## 5.2.1 LCD DOES NOT DISPLAY

Table 5.1

| Cause | Relevant Unit | Check Method | Maintenance Method |
|---|---|---|---|
| Unplugged from outlet | None | Visual check | Insert the AC plug into the outlet |
| DC power unplugged from unit | None | Visual check | Insert the DC power adapter cable into the unit |
| AC voltage failure | None | AC outlet voltage check | None |
| Power adapter output voltage failure | Power unit | Output voltage (+24v) check | Replace the power unit |
| PCB failure | Main control PCB | Tester check (+24V, GND) | Remove the cause or replace the PCB |
| LCD module main board connection failure | LCD module main board | Visual check | Plug the connector and secure it firmly |

## 5.2.2 PRINTER DOES NOT REACT

Table 5.2

| Cause | Relevant Unit | Check Method | Maintenance Method |
|---|---|---|---|
| Printer cable failure | Printer cable | Visual check | Secure printer cable firmly or replace the printer cable |
| Printer link failure | Main PCB | Visual check | Replace the PCB |
| | Printer paper jam | Visual check | Remove paper |
| | Printer paper empty | Visual check | Insert paper |
| | Printer problem | Visual check | See printer manual |
| | Printer busy | Visual check | Wait till printer ready |

## 5.2.3 SCANNING IS NOT PERFORMED

Table 5.3

| Cause | Relevant Unit | Check Method | Maintenance Method |
|---|---|---|---|
| Scanner cable failure | Scanner cable | Visual check | Attach the scanner cable |
| Scanner link failure | Main PCB | Visual check | Replace the PCB |
| | Scan Module | | Replace the Scan Module |

## 5.2.4 PRINTER DOES NOT PRINT

Table 5-4

| Cause | Relevant Unit | Check Method | Maintenance Method |
|---|---|---|---|
| Printer select wrong | Printer | Visual check | Make sure the printer information on the LCD display is correct. |
| Paper size incorrect | Paper tray | Visual check | Replace paper tray (The paper size being selected is inconsistent between the printer & the S900). |
| Printer problem | | Visual check | Check printer |

## 5.2.5 IMAGE UNCLEAR

Table 5-5

| Cause | Relevant Unit | Check Method | Maintenance Method |
|---|---|---|---|
| Lamp too dark | Lamp | Visual check | Replace the lamp |
| Dirt on flatbed glass | Flatbed glass | Visual check | Clean the flatbed glass with isopropyl alcohol |
| Printer toner low | Printer toner | Visual check | Check printer toner or replace the toner |
| Printer memory not enough | Printer | Visual check | Add printer memory |

## 5.2.6 NOISE GENERATED

Table 5-6

| Cause | Relevant Unit | Check Method | Maintenance Method |
|---|---|---|---|
| Motor unit failure | Motor unit | Replace the motor unit | Replace the motor |
| Main control PCB failure | Main control PCB | Replace the main control PCB | Replace the main control PCB |
| Scanning module failure | Scanning module | Check scanning module shakiness | Replace the scanning module |
| Dirt on rail | None | Visual check | Clean the rail with oil |

## 5.2.7 LCD DOES NOT SHOW MESSAGE AFTER COMMAND

Table 5-7

| Cause | Maintenance method |
|---|---|
| LCD module cable failure | Attach the LCD module cable and secure it firmly |
| LCD problem | Replace the LCD module |
| Push button failure | Replace the LCD module |

## 5.2.8 S900  IS NOT CONNECTED TO THE NETWORK

Table 5.8

| Cause | Maintenance Method |
|---|---|
| RJ-45 connector is not plugged in | Plug the connector in |
| Network cable is damaged | Replace the cable |

For your information, the assigned IP address for S900 and your computer should be:

| | |
|---|---|
| S900's IP address | 192.168.1.1 |
|     Subnet mask | 255.255.255.0 |
|     Gateway | 192.168.1.254 |
| Your Computer's IP address | 192.168.1.x (x: 2~253) |
|     Subnet mask | 255.255.255.0 |
|     Gateway | 192.168.1.254 |

## 5.2.9 ERROR CODES IN LCD

### LCD Message

| LCD Message | Action |
|---|---|
| Copy function disabled. | Please download the printer profile. |
| Check printer cable or status. | 1. Check if the printer cable has been correctly connected.<br>2. Check if the printer is turned on.<br>3. Restart the S900 unit and your printer.<br>4. If the message still appears, contact your dealer. |

### Information Codes

| Info code | Meaning | Action |
|---|---|---|
| 10001 | SDRAM error | Restart your S900 unit. (Turn off and on again.)<br>If the code still appears, contact your dealer. |
| 10006 | Home sensor error | Restart your S900 unit.<br>If the code still appears, contact your dealer. |
| 10007 | Lamp error | Restart your S900 unit.<br>If the code still appears, contact your dealer. |
| 10009 | Paper jam(ADF) | Open the ADF cover, remove the paper, and close the cover.<br>If the code still appears, contact your dealer. |
| 10010 | Cover open | Close the cover.<br>If the code still appears, contact your dealer. |
| 10099 | Lock error | 1. Turn off your S900 unit.<br>2. Find the lock switch underneath the machine and unlock the machine.<br>3. Restart your S900 unit.<br>If the code still appears, contact your dealer. |
| 20002 | Connect printer error | Please check IEEE 1394 cable. |
| 20003 | Printer error | Please check printer.<br>If the code still appears, contact your dealer. |

| Info code | Meaning | Action |
|---|---|---|
| 20004 | Printer Offline | Please check printer. |
| 20011 ~ 20019 | Copy Job Error | Reset scanner, and then try again. If the code still appears, contact your dealer. |
| 20021 ~ 20029 | 1394 Protocol Error | Reset scanner and printer, and then try again. If the code still appears, contact your dealer. |
| 20031 ~ 20039 | Printer Profile Error | Check printer profile version and printer model name. Update printer profile. If the code still appears, contact your dealer. |
| 20041 ~ 20049 | Scanner error | Please check scanner or reset scanner. If the code still appears, contact your dealer. |

**Note:  Please turn on your scanner after turning on the printer and confirming the "ON-LINE" status display in the LCD of the Printer.**

## 5.3 CLEARING THE PAPER JAM

1. Press the push button on the ADF front cover and open the cover to the left.

2. Gently pull out the jammed paper.

3. Close the ADF cover.
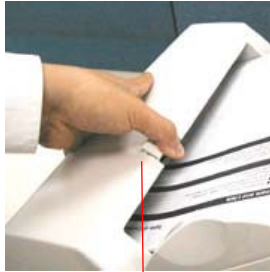
ADF Push Button       Document

# 6. PREVENTIVE MAINTENANCE

**6.1 Cleaning**

This S900 is designed to be maintenance free. However, it is suggested to perform preventive maintenance in the shorter term either every 6 months or every 60,000 sheets scanning to ensure a consistently optimum performance.

## 6.1 CLEANING THE DOCUMENT GLASS

There are times when the document cover and document glass are contaminated with ink, toner particles, or paper coatings. In this case, the S900 will have to be cleaned frequently to ensure the best performance.

Follow the cleaning procedure as below:

(1)     Open the document cover.

(2)     Dip a clean cloth with non-corrosive solvent like alcohol (purity above 99.5%).

(3)     Wipe the document cover and the document glass gently as shown the following figure. Continue until the entire document cover and document glass is cleaned and observed that no cleanser remains on the surface.

(4)     Close the document cover. Your S900 is now ready for use.



Document Cover

Document Glass
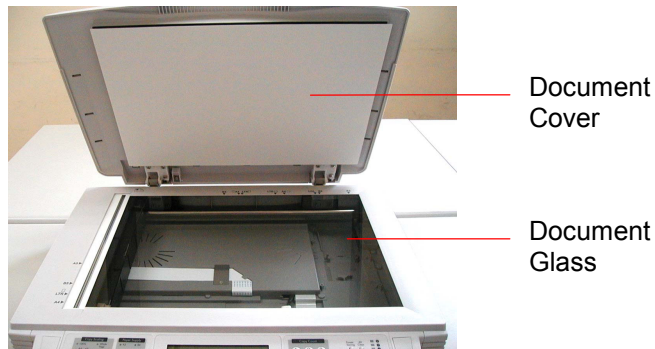
# 7.   DISASSEMBLY

**7.1 Service Tools**
**7.2 Lubricants**
**7.3 Procedure for Disassembly and Reassembly**

## 7.1    SERVICE TOOLS

Table 7.1 describes the maintenance tools necessary for the maintenance of this equipment.

| No. | Name | Description |
|-----|------|-------------|
| 1 | Standard screwdriver | Idler pulley module screw |
| 2 | Philips screwdriver (magnetic) | Nominal No.2 M3, M4 |
| 3 | Oil | Shell "Terrace Oil 46" |
| 4 | Grease | Shell "Alvania Grease No.2" |
| 5 | Alcohol (Isopropyl 91% >) | Cleaning |
| 6 | Digital voltmeter | With 0.01 V range |
| 7 | Oscilloscope | 100 MHz or more with external sweep |
| 8 | Blower | Cleaning |

Table 8.1  Maintenance tools

## 7.2   LUBRICANTS

This section describes the items to check and the places to lubricate when maintenance parts are replaced.

## 7.2.1 MECHANICAL UNIT LUBRICATION

This lubrication method:

```
1 -    A -    C -  Y
                   |___ Lubrication cycle
              |_____ Amount of lubricant
         |_____ Lubricant type
  |_____ Positions need to be lubricated
                        (show in number)
```
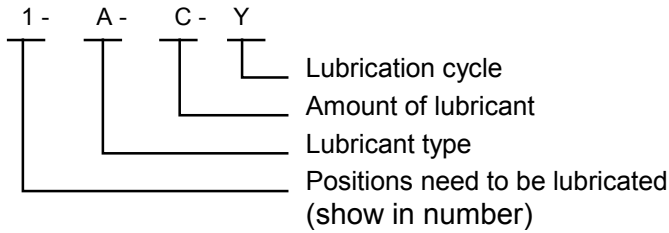
1.  Positions need to be lubricated:
    The positions need to be lubricated is indicated in numbers.
2.  Lubricant type:
    A: Shell Alvania Grease No. 2
    B: Shell Terrace Oil 46
3.  Amount of lubricant:
    C: Coat thinly uniformly
4.  Lubrication cycle:
    Y: Every year

Table 8.2 below shows the position to be lubricated.

| Lubrication Position | Lubricant Type | Lubricant Amount | Lubrication Cycle | Lubrication Position |
|---|---|---|---|---|
| 1 | B | C | Y | Sliding rod |
| 2 | A | C | Y | Sliding guide |

Table 8.2

1 Sliding Guide

2 Sliding Rod
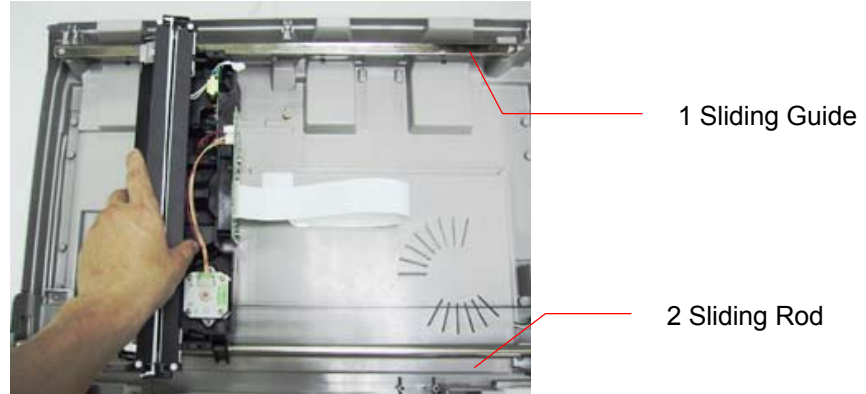
Positions need to be lubricated

## 7.3    PROCEDURE FOR DISASSEMBLY AND REASSEMBLY

## 7.3.1 NOTES ON DISASSEMBLY

(1)    Clean the disassembly and assembly location.

(2)    Disconnect the power cable and remove the DC plug from the outlet before disassembly and assembly.

(3)    Follow the disassembly and assembly procedures. Never loosen the screws of parts that must not be disassembled.

(4)    Store the disassembled parts in a clean place to avoid loss.

(5)    After replacement, check the contacts and spare part mounting.

(6)    Assemble the parts in reverse order of disassembly procedure.

## 7.3.2 DOCUMENT COVER

(1).  As shown in the figure below, lift the document cover to remove the studs from the hinge holes. The studs are loosely attached to the hinge holes to cover your original when it is a few inches high.
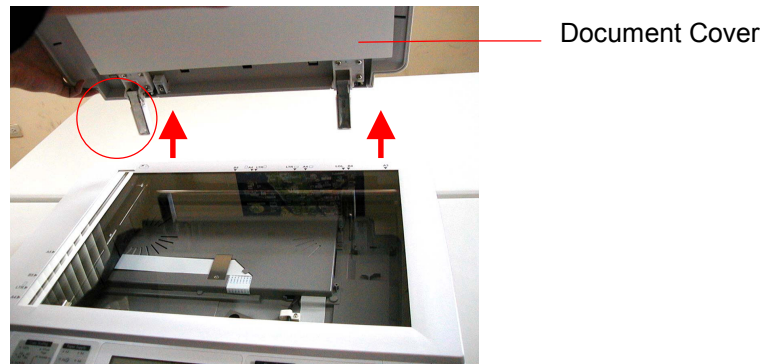
Document Cover

Document cover removal

- Note:

Before reinstalling the document cover, clean the document cover first.

## 7.3.3 CONTROL PANEL

(1)     Remove the document cover as described in the preceding section 7.3.2.

(2)     Raise the main unit as shown below. Remove the three fixing screw of the control panel.
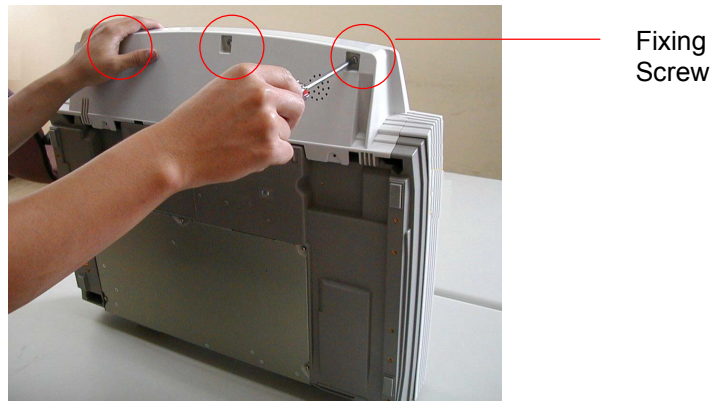


Fixing
Screw

(3)     Lay down the main unit. Loosen the Control Panel PCBA Assembly by lifting it up. Disconnect the flat cable.





Flat Cable

(4)      Remove the fixing screws and the front cover.

Control
Panel PCBA





Control Panel
PCBA Assembly

Fixing
Screw

Front Cover
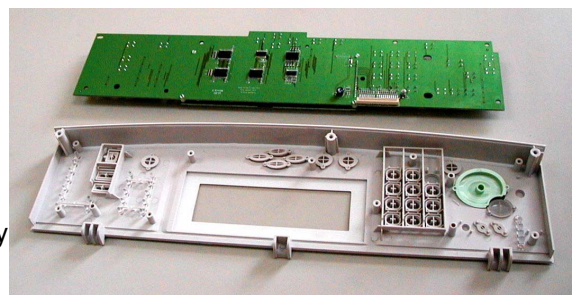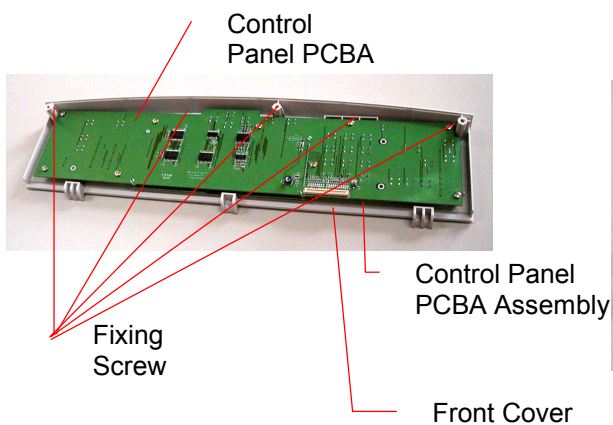
## 7.3.4 UPPER HOUSING

(1)     Remove document cover as described in the subsection 7.3.2.

(2)     Remove control panel PCBA as described in subsection 7.3.3.

(3)     Remove the fixing screws of the control panel.
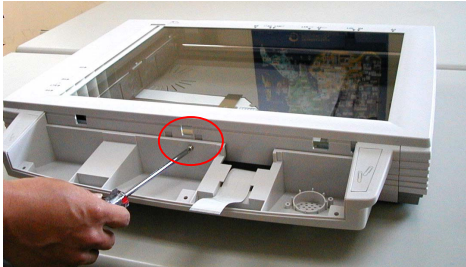


(4)     Remove the bottom housing of the control panel by detaching the hook.
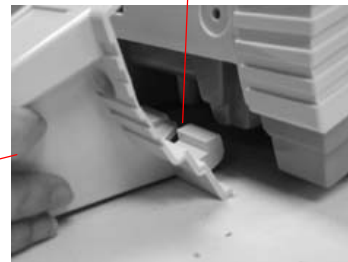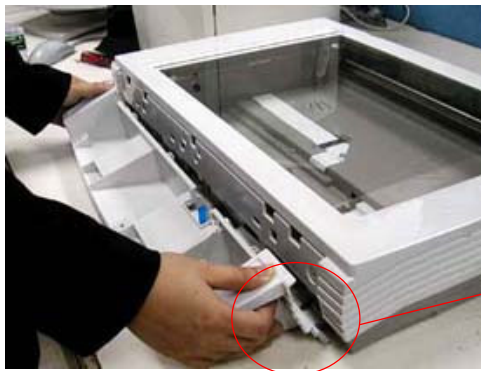


The hook connecting the main unit

(5)     Loosen the fixing screws at the rear and lift the upper housing gently to remove it.
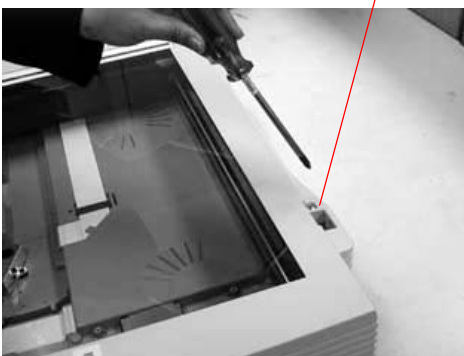
The Fixing Screw
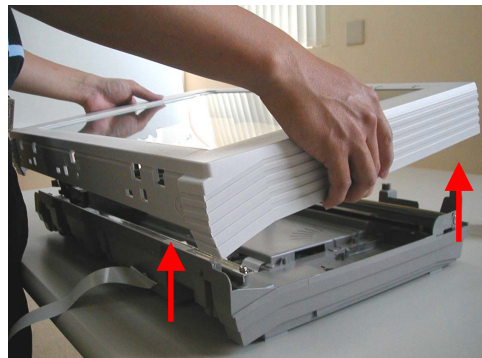


- • Note:
1. Before reinstalling the upper housing, clean the glass surface.
2. Please keep the fixing screws and follow the reverse order to reassemble the upper housing.

## 7.3.5 DOCUMENT COVER SENSOR PCBA

(1)     Remove document cover as described in the subsection 7.3.2.

(2)     Remove upper housing as described in preceding section 7.3.4.

(3)     Move the optical chassis to the center as illustrated below.

Document Cover
Sensor PCBA
Assembly

Optical Chassis

(4)      Loosen the fixing screw to remove the paper sensor PCBA.

Fixing Screw

Cover
Sensor
PCBA
Assembly
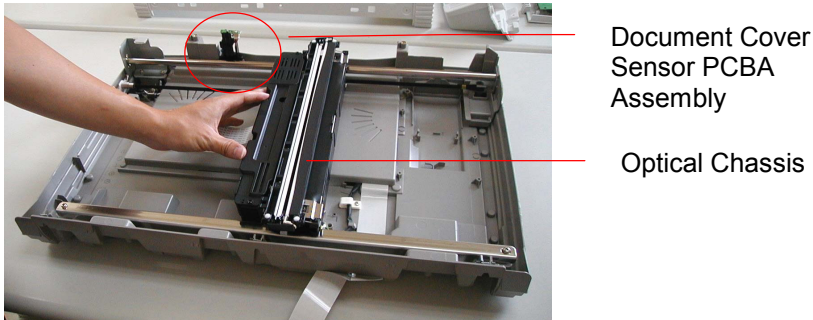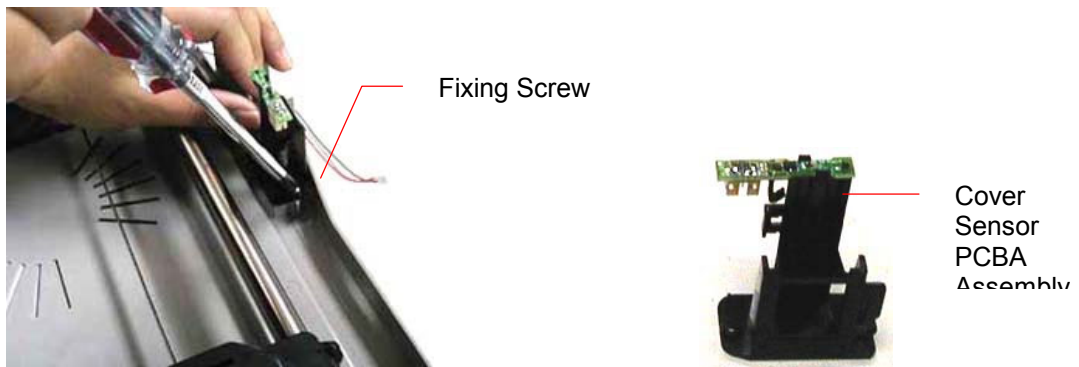
## 7.3.6 PAPER SENSOR PCBA

(1)     Remove upper housing as described in preceding section 7.3.4.

(2)     Loosen the fixing screw to remove the paper sensor PCBA.
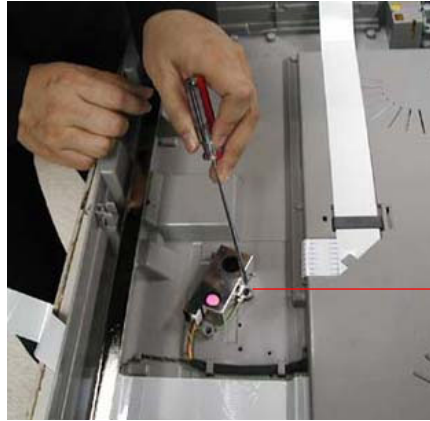


Fixing Screw

## 7.3.7 MAIN CONTROL BOARD ASSEMBLY

(1)     Turn the machine over to reveal the bottom. Loosen the fixing screws of the metal cover from the bottom housing.

Fixing Screws

Metal Cover
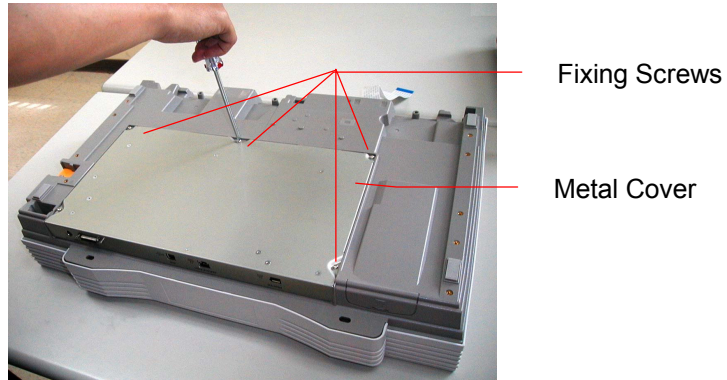
(2)     Raise the main board to disconnect the cables.
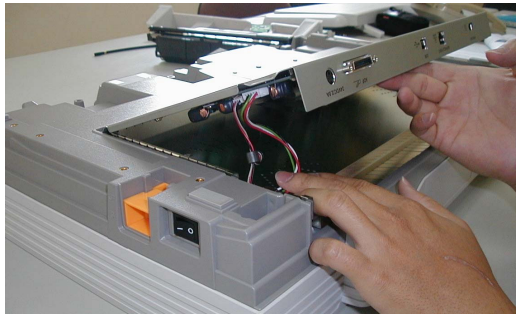
(3)     Loosen all flat cables.

Flat Cable
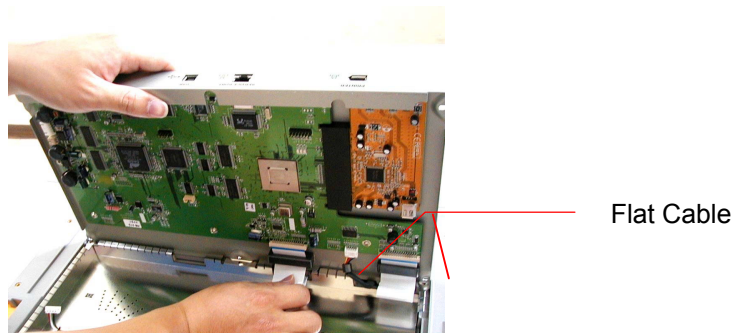
(4)     Loosen the fixing screws of the SCSI connector with proper tool.

## 7.3.8 MOTOR BELT

(1)     Remove upper housing. (See preceding section 7.3.4)

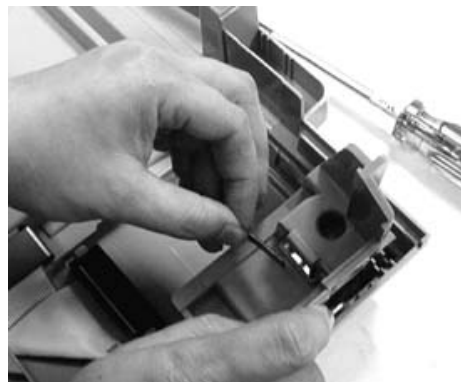(2)     Move the optical chassis to the center as illustrated below.
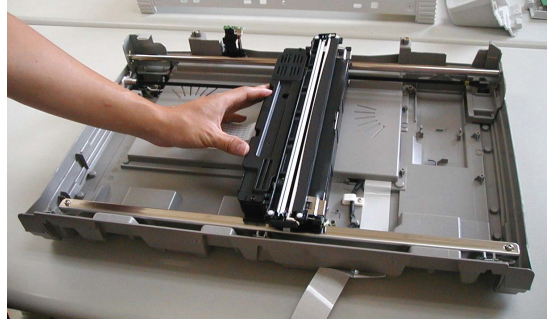


(3)     Loosen the fixing screw of the belt to detach the left end of the belt.
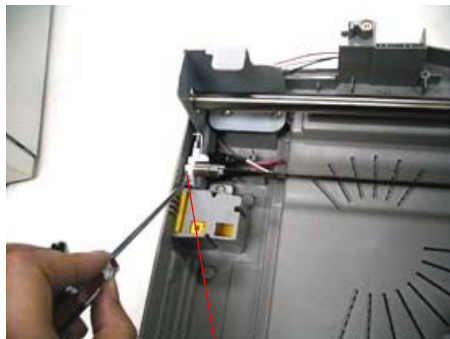


Fixing Screw

(4)     Remove the other end of the belt from the hook.



- **Note**
During the reinstalling process, be sure to keep the belt in straight to keep the tension.

## 7.3.9 OPTICAL CHASSIS

**DISASSEMBLING PROCEDURE**

(1)     Remove the upper housing. (See section 7.3.4 )

(2)     Remove the main control PCBA. (See section 7.3.5)

(3)     Remove the motor belt. (See section 7.3.6)

(4)     Remove the fixing screws of the sliding rod, then pull it out gently as illustrated below.

Optical Chassis

Sliding Rod

Fixing Screws

Sliding Rod
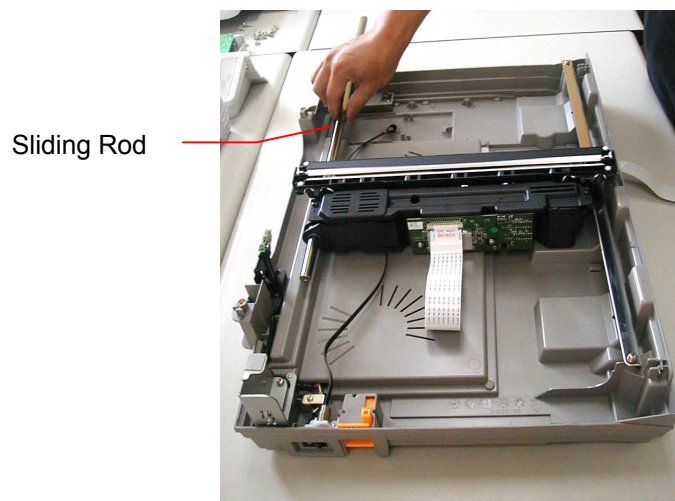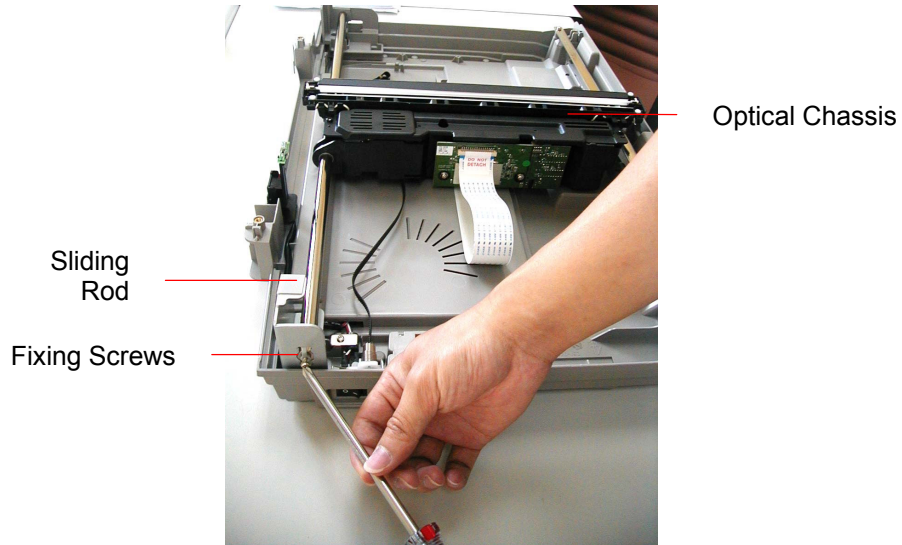
(5)     Remove the flat cable of the optical chassis as illustrated below.

Install the flat cable with the text facing up ———— Optical Chassis

———— Lamp

(6)     Hold the right side of the optical chassis to remove it gently from the machine. (Be careful not to touch the CCD board as well as the lamp in the optical chassis.)
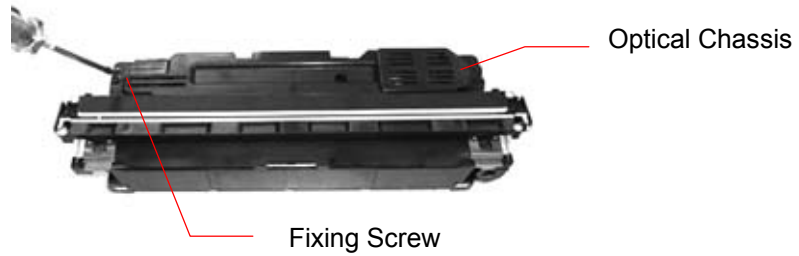
———— Lamp

CCD Board

---
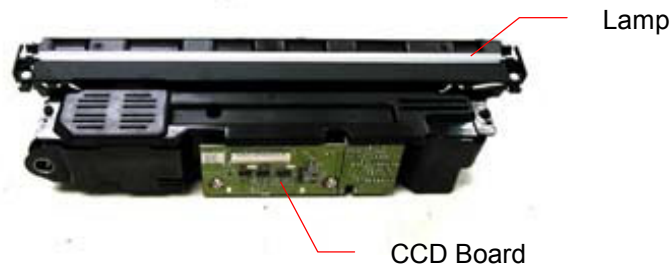
- *Note:*
1.    While reinstalling the optical chassis, be careful not to touch the chips of the CCD board as well as the lamp in the optical chassis.
2.    While reinstalling the CCD flat cable, be sure the text of the flat cable faces up as illustrated below.
3.    Any unauthorized action may cause unexpected result and will therefore not be responsible by the manufacturer.
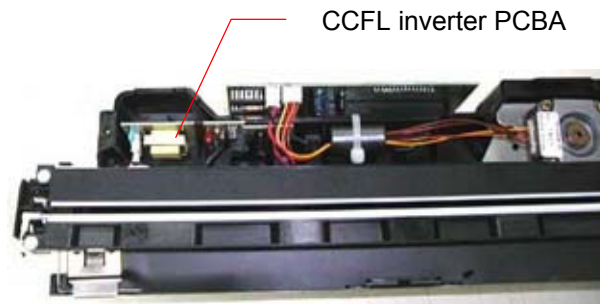
## 7.3.10 CCFL INVERTER PCBA

(1)     Remove the optical chassis. (See preceding section 7.3.7).
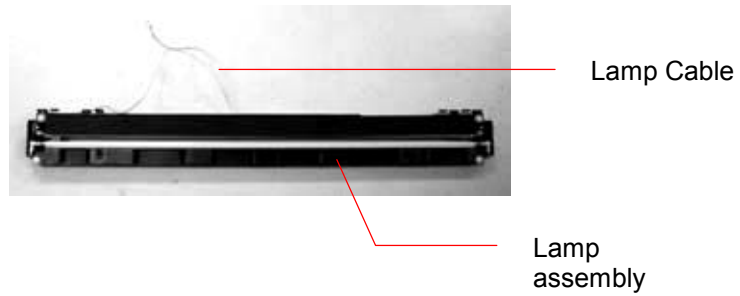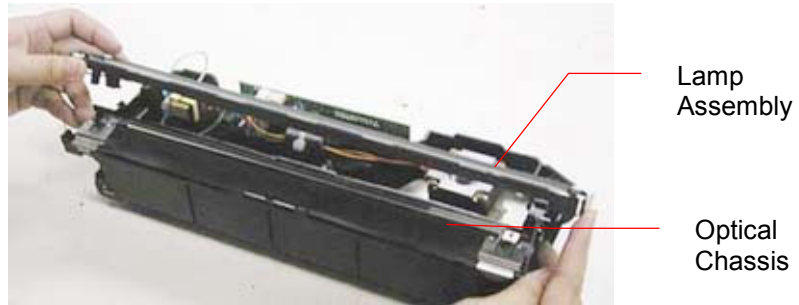
(2)     Remove the fixing screw of the cover.



Optical Chassis

Fixing Screw

(3)     Disconnect the CCFL inverter cable and CCFL inverter PCBA cable.



CCFL inverter PCBA

CCFC Inverter PCBA removal

## 7.3.11 LAMP ASSEMBLY

(1)      Remove the optical chassis. (See section 7.3.7)

(2)      Disconnect all cables of the lamp assembly.

(3)      Detach the lamp from the lamp holder.



Lamp Assembly



Lamp Assembly

Optical Chassis



Lamp Cable

Lamp assembly

## 7.3.12 MOTOR UNIT

(1)     Remove the optical chassis and the CCFL inverter PCBA. (See section 7.3.7 and 7.3.8)

(2)     Remove the lamp assembly. (See preceding section 7.3.9)

(3)     Loosen the fixing screw to remove the motor mount as shown in the figure below.



Fixing Screw

Motor Mount
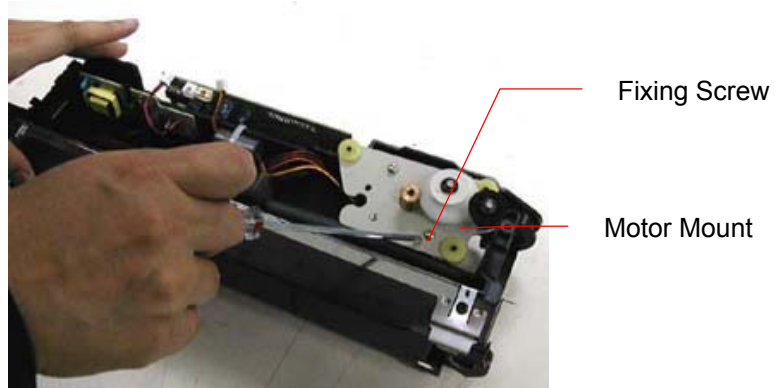
(4)     Loosen the fixing screw and disconnect the motor cable to remove the motor.



Motor Cable

Motor

Fixing Screw



Motor Mount

Motor
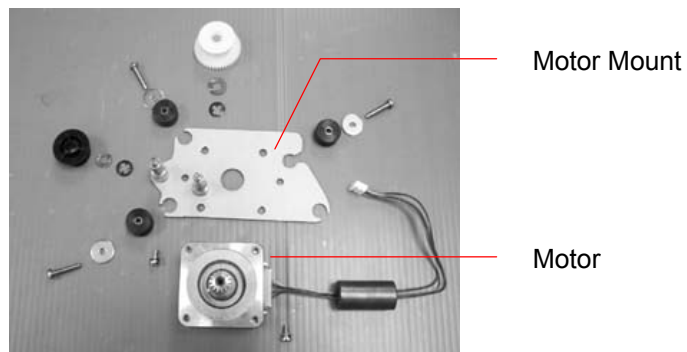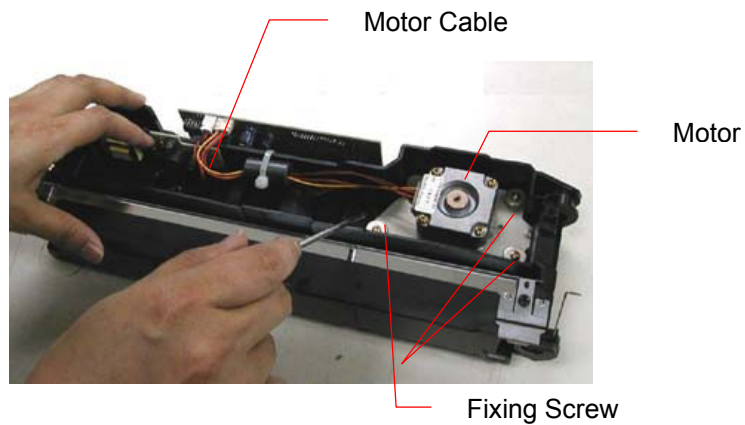
# 8.  PARTS

## 8.1 Spare Parts List

## 8.1    SPARE PARTS LIST

Please find the following spare parts list and its illustration.

(I)
PRINTER CARD

CD (D)

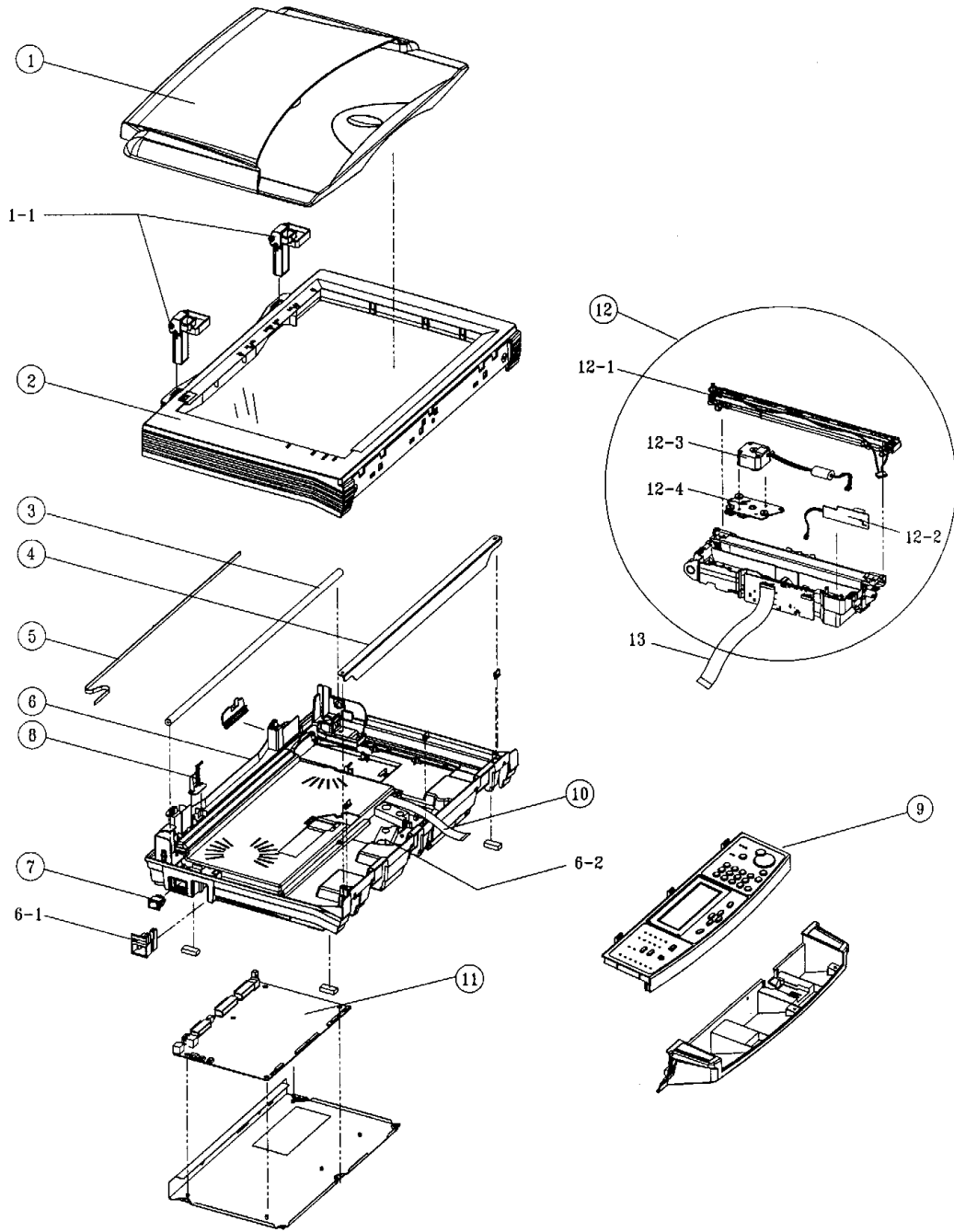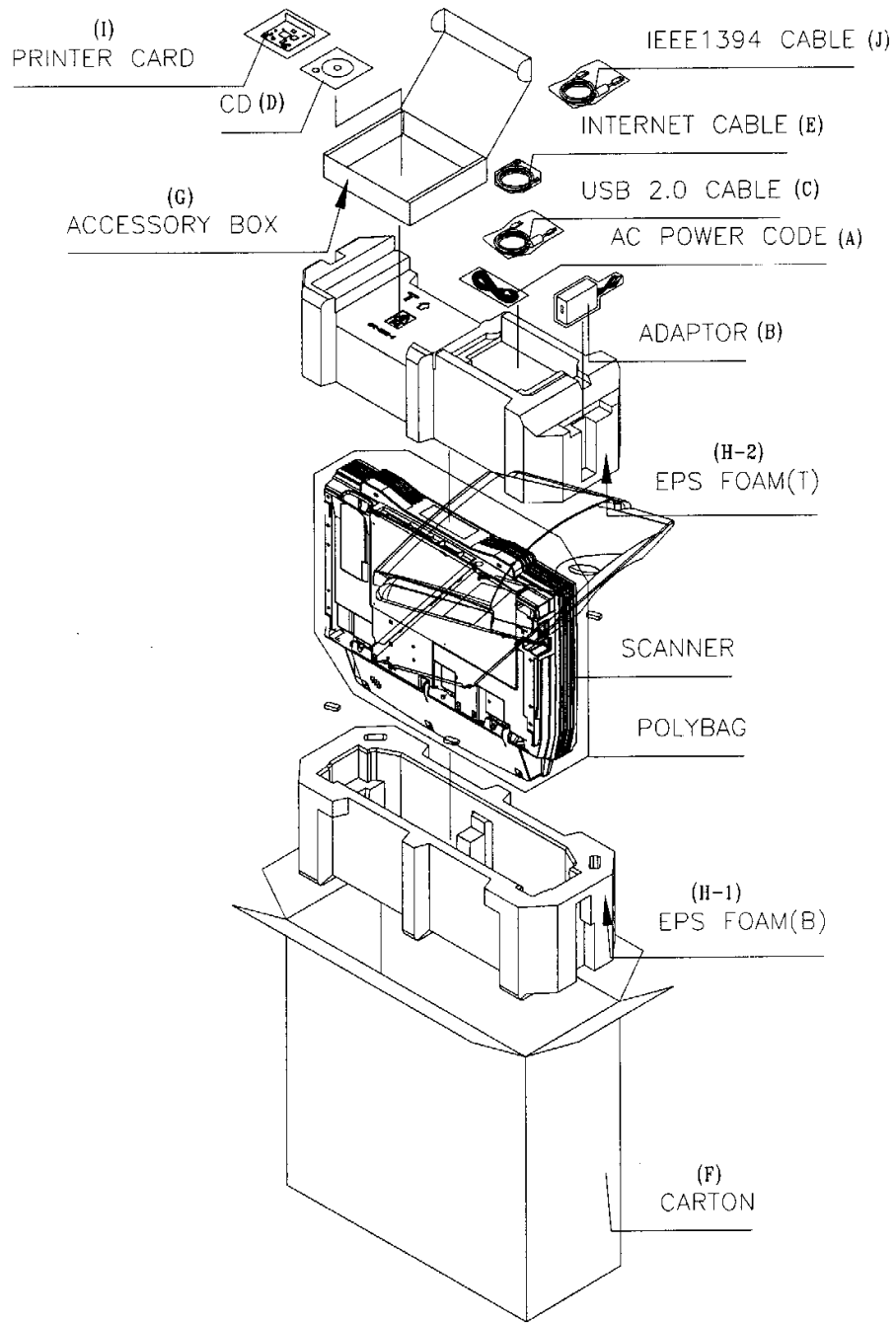IEEE1394 CABLE (J)

INTERNET CABLE (E)

(G)
ACCESSORY BOX

USB 2.0 CABLE (C)

AC POWER CODE (A)

ADAPTOR (B)

(H-2)
EPS FOAM(T)

SCANNER

POLYBAG

(H-1)
EPS FOAM(B)

(F)
CARTON

| ITEM | P/N | REV. | DESCRIPTION | ORDER Q'TY |
|------|-----|------|-------------|------------|
| 1 | 53085301 | 100 | S-PARTS: ASS'Y, DOCUMENT COVER | 1 |
| 1-1 | 50810701 | 100 | S-PARTS: ASS'Y, HINGE | 1 |
| 2 | 56734801 | 100 | S-PARTS: ASS'Y, UPPER HOUSING, A3 SIZE | 1 |
| 3 | | 100 | S-PARTS: SLIDING ROD, 12x553,SUM1214, Ni 6u | 1 |
| 4 | | 100 | S-PARTS: SLIDING FRAME, 621x12x28x1.6/NI 6u | 1 |
| 5 | 51310601 | 100 | S-PARTS: BELT, @V5000 SERIES | 1 |
| 6 | 56741401 | 010 | S-PARTS: ASS'Y, BOTTOM HOUSING, A3, OKI S900 | 1 |
| 6-1 | | 100 | S-PARTS: LOCK CHASSIS, 45x30x30 POM | 1 |
| 6-2 | 50420701 | 100 | S-PARTS: ASS'Y, PAPER SENSOR | 1 |
| 7 | | 100 | S-PARTS: POWER SWITH/SOCKET W/CORE, PITCH2.5, L=200 | 1 |
| 8 | 50420801 | 200 | S-PARTS: ASS'Y, SENSON BOARD, SB11, @V5000 SERIES | 1 |
| | | | | |
| 9-2 | 50229401 | 010 | S-PARTS: ASS'Y, CONTROL PANEL, 428x104x31, US, A3, OKI S900 | 1 |
| 10 | 56640401 | 100 | S-PARTS: FFC CABLE, 32P, P=1mm, L=400mm | 1 |
| | | | | |
| 11-2 | 55089801 | 010 | S-PARTS: ASS'Y, MAIN BOARD, A3, US, OKI S900 | 1 |
| 12 | 56117501 | 100 | S-PARTS: ASS'Y, OPTICAL, AV8000S | 1 |
| 12-1 | 56117601 | 100 | S-PARTS: ASS'Y, LAMP, AV8000S | 1 |
| 12-2 | 55628901 | 100 | S-PARTS: INVERTER, Vdc=24V, Ilamp=7mA, 56KHz, AV8000S | 1 |
| 12-3 | 56521101 | 100 | S-PARTS: ASS'Y, MOTOR: 600DPI, AS8000S | 1 |
| 12-4 | 56521201 | 010 | S-PARTS: ASS'Y, MOTOR MOUNT, A3, OKI S900 | 1 |
| 13 | 56639001 | 100 | S-PARTS: FFC CABLE, 32P, P=1.0mm, L=515mm | 1 |

| | OTHERS | | | |
|---|---|---|---|---|
| A-1 | 56638402 | 100 | S-PARTS: AC POWER CORD: 125V/10A, 1.8m(UL/CSA) | 1 |
| | | | | |
| | | | | |
| | | | | |
| B | 56416802 | 100 | S-PARTS: ADAPTOR: 24V/2.0A, 100~240V/50~60Hz | 1 |
| C | 56640201 | 100 | S-PARTS: USB 2.0 CABLE | 1 |
| D | | 010 | CD: OKI S900 | 1 |
| E | 56638901 | 010 | S-PARTS: CROSS CABLE: INTERNET CABLE, 8P 4C, 1.8M | 1 |
| F | | 010 | CARTON: 710x280x680, OKI S900 | 1 |
| G | | 010 | ACCESSARY BOX: 245x220x60,B/F,DS8000C | 1 |
| H-1 | | 100 | EPS FOAM, B: 690x258x150, @V5000 | 1 |
| H-2 | | 100 | EPS FOAM, T: 690x258x260, @V5000 | 1 |
| I | 55089901 | 100 | S-PARTS: PRINTER CARD (1394), OKI S900 | 1 |
| J | 56640301 | 010 | S-PARTS: IEEE1394 CABLE | 1 |

**Table 8.1 Spare Parts for S900**