

*Note: This product is no longer serviced or updated by Lexmark. Replacement parts (other than supplies) may have little or no availability.*

# **3200MFP Service Manual**



**4036-306**

**Lexmark International, Inc.**

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# 1. Overview

1.1	General Notes for Servicing
1.2	Product Description
1.3	Product specifications
1.4	Device Configuration
1.5	Theory of Operation

This manual is intended to be used by the maintenance engineers. It describes the areas to be maintained, the installation, the disassembly, and the main trouble shooting guides.

Please take your time to read this manual thoroughly to obtain comprehensive knowledge about the 3200MFP before serving the unit.

## 1.1 General notes for servicing

- (1) Before trying to disassemble the 3200MFP, make sure the power supply cord of the 3200MFP is disconnected from the power outlet. Under any circumstance, do not remove or install the connectors on the 3200MFP with the power supply 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 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 Product Description

3200MFP is a multifunction solution that offers integrated print, copy, fax and color network-scanning capabilities for increased small workgroup productivity. The 3200MFP is easy to use and provides low-cost access to key office functions, including fax from workstation, network color copying, scanning, and electronic document routing.

You can hand your document over to 3200MFP, and in a few steps, 3200MFP scans it to the network and delivers it wherever, to whomever you want. With 3200MFP, inefficient steps to the mailroom, copier, fax machine and to your workstation are a thing of the past.

## 1.3 Product Features

- **Ease of Use**

The control panel on the front of 3200MFP looks like a panel on a regular copier with the standard phone keys added. The operating steps follow the same procedure as that of a regular copier or fax machine.

- **A Digital Copier and a Full-function Fax Machine**

When 3200MFP is connected to a Lexmark printer, it is able to perform convenient digital copying. When 3200MFP is connected to telephone line, it is able to perform a full fax function - to send and to receive faxes.

- **Network Scanning**

The 3200MFP employs two Color Charged-Coupled Devices (CCD) as the scanning method. Through a network port at the rear of the 3200MFP, the product is able to perform network scanning.

- **Duplex Scanning through the Auto Document Feeder (ADF)**

To increase workgroup productivity, the 3200MFP is featured with the advance duplex scanning capability. The scan speed reaches to 20 PPM at 300 dpi resolution while the auto document feeder can hold up to 50 pages of document at one time.

## 1.4 Product Specifications

The 3200MFP is designed to meet the following product specifications:

Function	3200MFP
ADF mono @ 300	22 ppm
ADF Mono @ 600x300	18 ppm (22 ppm possible?)
ADF color @ 300	15 ppm
ADF color @ 600	5 ppm
ADF type	Straight
ADF dimensions	570x430x190mm 22.2x16.7x7.4
ADF optical resolution	600 x 600
Interpolated up to	4800 x 4800
ADF document size	4.5x5.5 to 8.5x14inch
ADF document depth	0.05 to 0.15 mm 0.002 to 0.006 inch
ADF paper capacity	50 sheets
Paper feed	Single side: Face down
ADF jam rate	1/2000
ADF miss feed	1/2000 1/1500
ADF multiple feed	1/500 1/400
ADF dog ear	1/500
Flat bed optical resolution	600 x 600
Interpolated up to	4800 x 4800
Scanning modes	1.5 Oasis 982
Power consumption	60W
Weight	15 lb.
Duty Cycle	10,000 pages/month
Pad life (replaceable)	40,000 scans
MSBF	50,000
Life of lamp	50,000 hr.
Scanner life (warranty)	600,000 scans or 5 years flatbed 400,000 scans or 5 years ADF
Time to first page	<13.0 sec. Flatbed < 14.5 sec. ADF
Class of machine	Class A
ON/OFF Switch	Yes
Interface	1.6 Firewire

Table 1-1 Product Specifications

# 1.5 Device Configuration

This section describes the device configuration of the multifunction product.

## Outer View

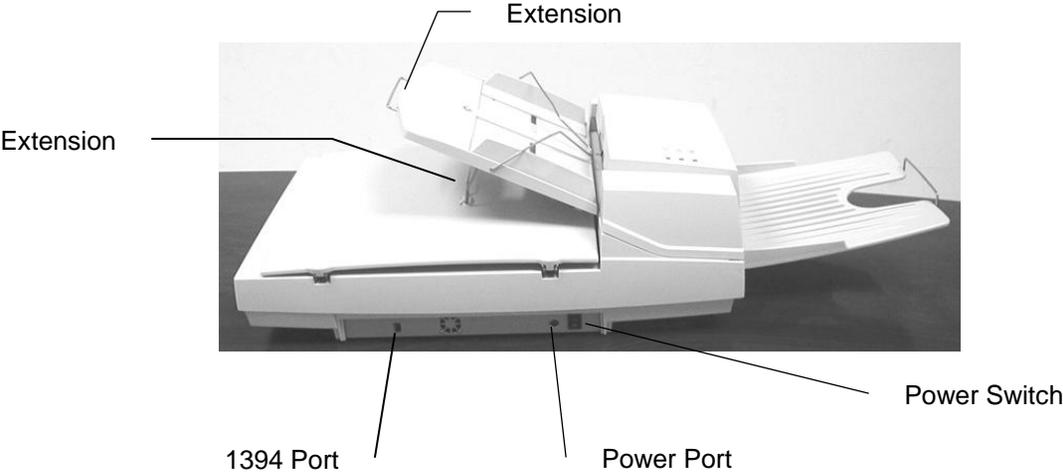
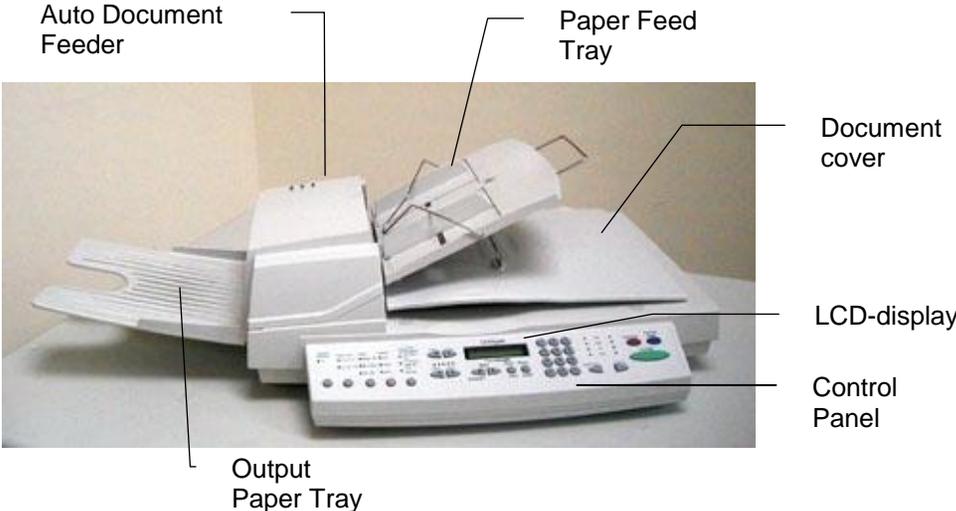
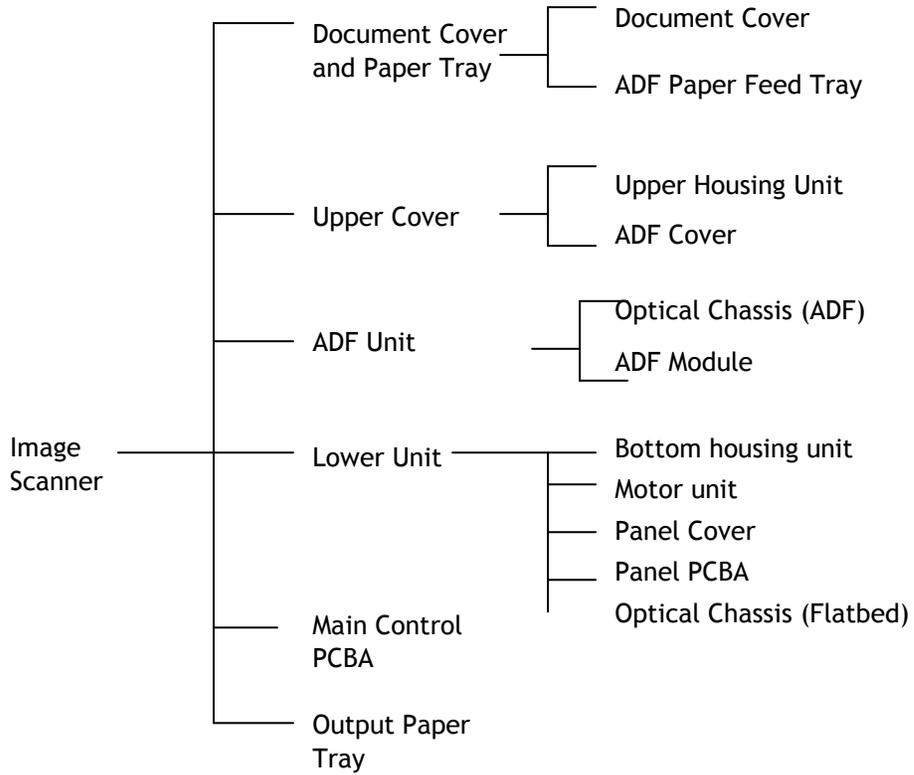
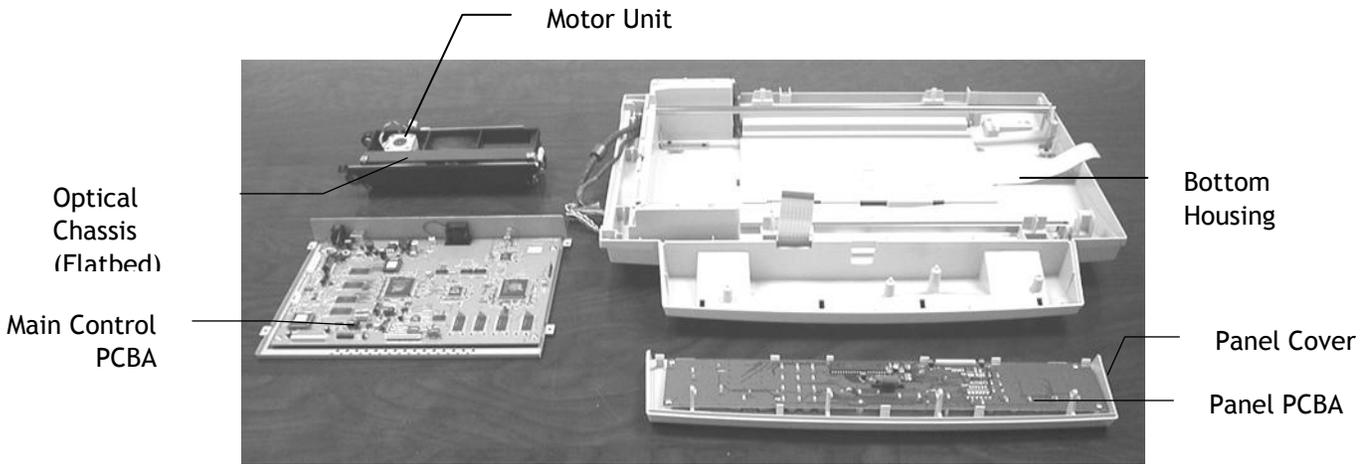
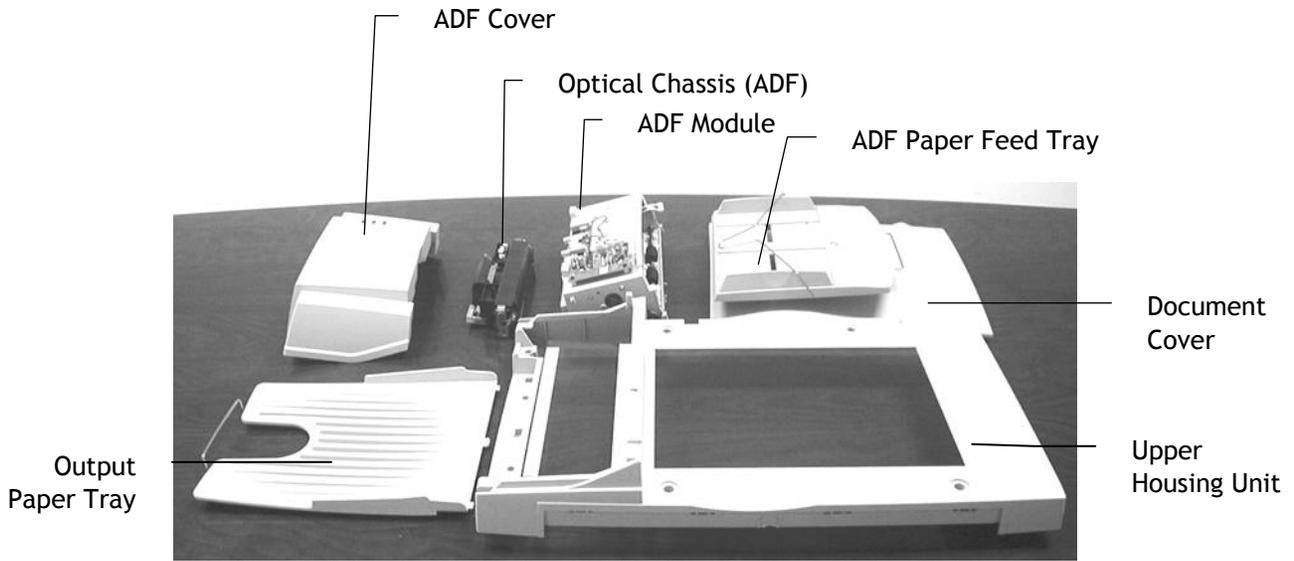


Figure 1.1 3200MFP Outer View

## Mechanical Configuration

The equipment consists of the following components:





# Wiring Configuration

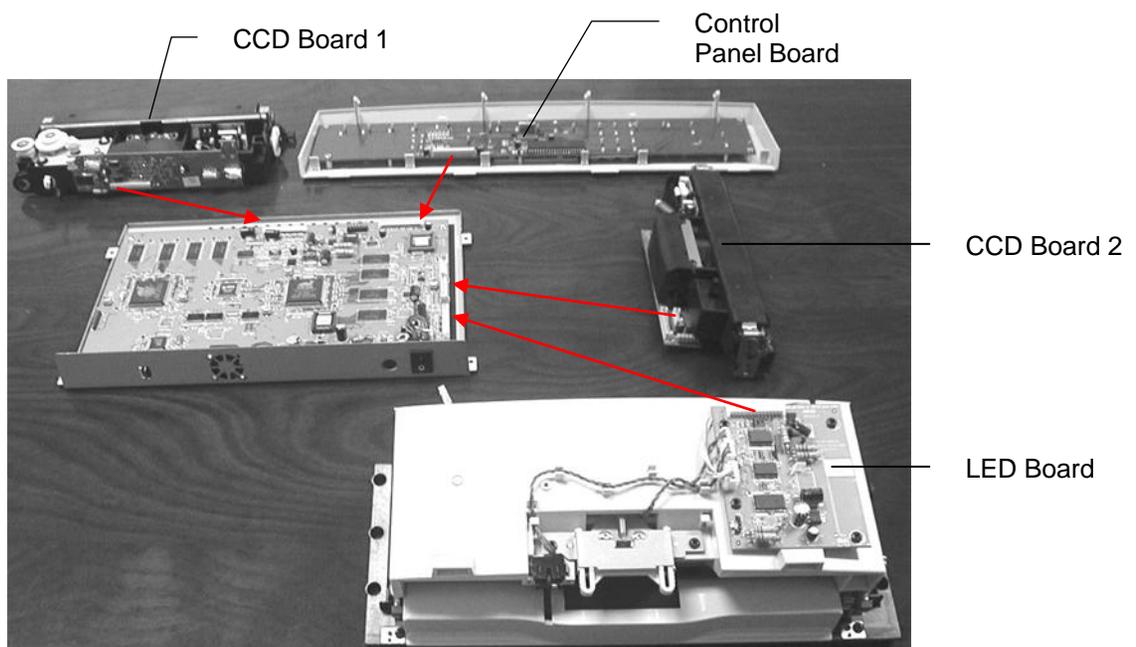


Figure 1.2 Wiring Configuration

## 1.6 Theory of Operation

### Introduction

This section explains the theory of operation of this scanner.

The microprocessor in this scanner controls the following functions.

- Interface
- Scanning module drive
- ADF drive
- Reading mode (reading density, document size, half-tone) selection.

Figure 1.3 shows the operation mode sequence.

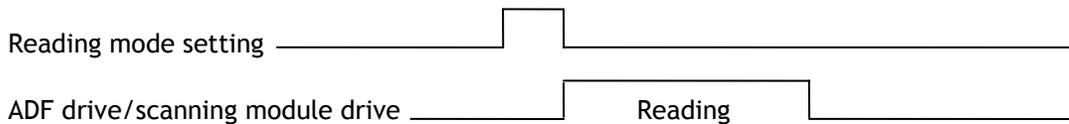


Figure 1.3 Operation sequence

### Mechanical Section Operation

#### ***Scanning module drive***

The carrier is driven by a 2-phase stepping motor. The stepping motor has a rotation of  $1.8^\circ$  (full step). And the use of micro-stepping control technique can work the motor to move the scanning module at 1/300 inch/step.

#### ***ADF mechanism operation***

The ADF is driven by a 2-phase stepping motor. The stepping motor has a rotation of  $1.8^\circ$  (full step). The use of micro-stepping control technique enables the motor to move the paper on the ADF at 1/300 inch/step.

## System Description

The 3200MFP is a duplex scanner which can scan synchronously both top and bottom size in a document. It includes one main control board, two optical modules, one ADF module and one LCD panel.

### *System Diagram*

Figure 1.4 shows the system block diagram.

The main control board controls all the modules built up the 3200MFP. It includes a RISC. ARM9(internal) as the main controller, one Flash Memory as program area , two ASIC for flatbed and ADF image processing and each have external 64MB SRDRAM for data processing , two A/D converter for processing flatbed and ADF CCD signals input, two sets of motor drivers for driving flatbed and ADF motors, one 1394 controller for data interfacing with printer.

The power is an external 24V/2500mA power adapter for the whole system. There are some different values inside the 3200MFP.

- +24V     Power directly comes from the power adapter and used for flatbed and ADF motor.
- +12V     Power converted from 7812 to supply flatbed and ADF CCD
- +5V       Power converter from 34063 to supply flatbed and ADF A/D converters and all 5V logic.
- +3.3V     Power converted from LM 2576/3.3V to supply RTL8811, 1394 controller, two image processing ASICs and some 3.3V logics.

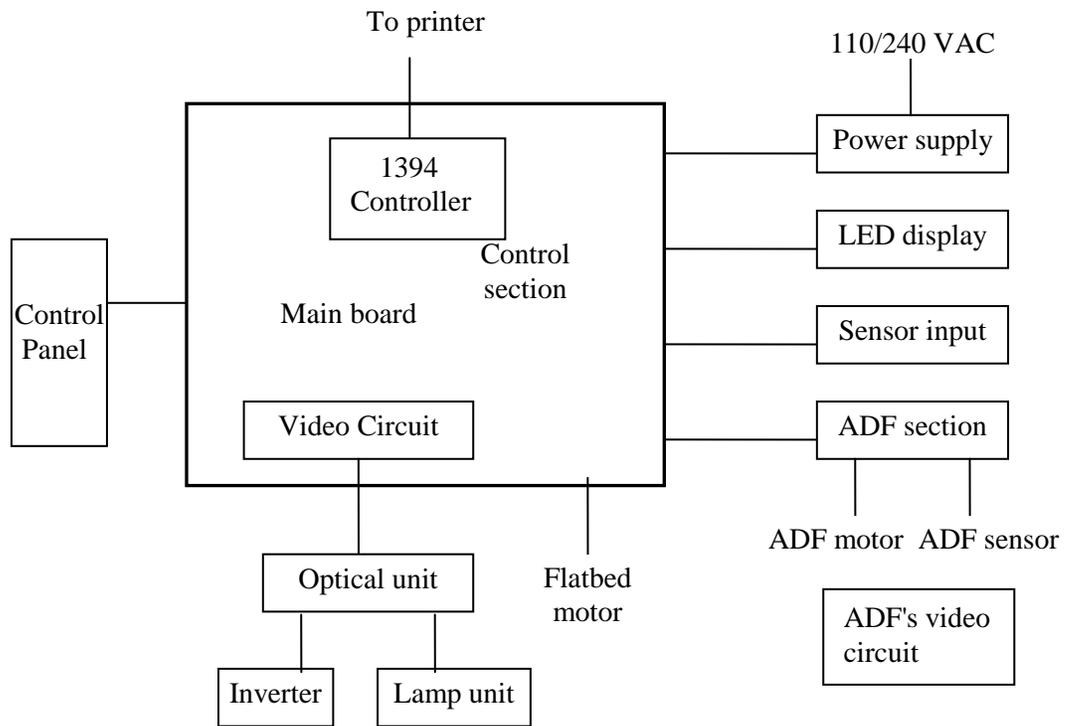


Figure 1.4 System Block Diagram

**1394 interface:**

This scanner and the printer are connected via the 1394 interface.

**Video circuit:**

The video circuit of this scanner includes: CCD driving circuit, CCD signal processing circuit.

**1 CCD Driving Circuit**

The CCD driving circuit is used to generate correct signals to the CCD, so that the CCD may generate the correct image data.

**Pin Assignment for Flatbed Video Circuit J3:**

Pin No.	Name	Function
1	H.G	Inverter Ground
2	H.G	Inverter Ground
4	Lamp V	Inverter Power Supply
5	Lamp V	Inverter Power Supply
6	+5V	+5V Power Supply
7	SH	Channel Shift Gate
8	Home Sensor	Sensor Signal
9	D.G	Digital Ground
10	PH2	CCD Clock Phase
11	PH1	CCD Clock Phase
12	D.G	Digital Ground
13	Clamp	CCD Clamp Signal
14	RS	CCD Reset Gate
15	B/W	CCD B/W Control Switch
16	+12V	+12V Power Supply
17	VOR	CCD red Channel Output Signal
18	A.G	Analog Ground
19	VOG	CCD Green Channel Output Signal
20	A.G	Analog Ground
21	VOB	CCD Blue Channel Output Signal
22	A.G	Analog Ground

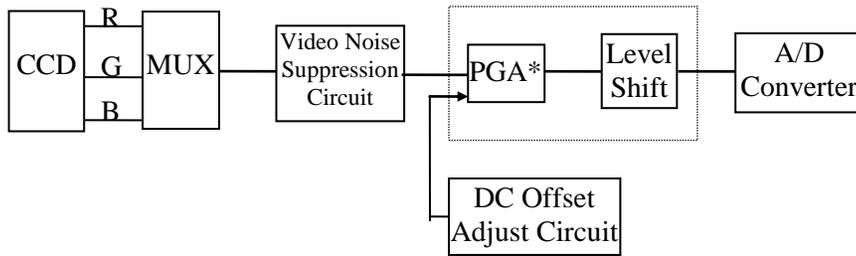
Pin Assignment for ADF Video Circuit J9:

Pin No.	Name	Function
1	H.G.	Inverter Ground
2	+24V	Analog +24V Power Supply
3	GND	+5V GND
4	+5V	+5V Power Supply
5	B/W	CCD B/W Control Switch
6	SH	Channel Shift Gate
7	RS	CCD Reset Gate
8	Clamp	CCD Clamp Signal
9	GND	+5V GND
10	PH2	CCD Clock Phase
11	PH1	CCD Clock Phase
12	H24G	+24V Ground
13	A.G	Analog Ground
14	+24Va	Analog +24Va Power Supply

Pin Assignment for ADF Video Circuit J8:

Pin No.	Name	Function
1	A.G	Analog Ground
2	VOR	CCD Red Channel Output Signal
3	A.G	Analog Ground
4	VOG	CCD Green Channel Output Signal
5	A.G	Analog Ground
6	VOB	CCD Blue Channel Output Signal

## 2. CCD signal processing circuit



The video noise suppression circuit is to eliminate the reset noise and low frequency noise of CCD and then PGA performs video gain control. The “level shift” circuit is used to bias the PGA output to satisfy the reference bottom requirement of the A/D converter. The “DC-OFFSET Adjust” circuit is used to adjust the bias level of video signal.

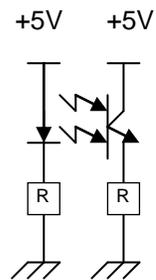
\* PGA: Programmable gain amplifier

### ***Sensor input***

The sensor input includes home position sensor and ADF cover 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 1.5 Home position sensor**

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

#### **2. ADF cover sensor**

The operation of the ADF cover sensor is the same as that of the home position sensor.

# 2. Installation

<b>2.1</b>	<b>Precautions of Installation</b>
<b>2.2</b>	<b>Unpacking Procedure</b>
<b>2.3</b>	<b>Unlocking Your Scanner</b>
<b>2.4</b>	<b>Cable Connection</b>

This chapter explains the unpacking procedure, installation procedure and confirmation of operation.

## 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 scanner out of direct sunlight. Do not install near a heat source.
- Do not place the scanner around materials which shut off the circulation of air.
- Do not install in a humid or dusty place.
- Do not use the wall socket with connecting devices which may generate noise, for example, air-conditioner, etc.
- Use a suitable AC power source.
- Place the scanner on a level surface.

## 2.2 Unpacking Procedure

Unpack the scanner according to the following procedure.

- Remove the packing material.
- Remove the scanner from the shipping container.
- Remove the scanner from the PVC bag.
- Check the items
- For any missing items, please contact your nearest dealer or distributor.

### 2.3 Unlocking Your Scanner

The scanner is designed with the lock switch on the bottom to protect the scanning unit during transportation. Please unlock the scanner first before using it.

1. Place the scanner on its side as shown in Figure 2.2
2. Locate the lock switch near the control panel. Move the lock switch to the "Unlock" position as shown in Figure 2.3.
3. Remove the shipping retainer from its slot.
4. Insert the shipping retainer in the use position and fasten with the same screw as shown in Figure 2.3.
5. Place the scanner in its normal operating position.

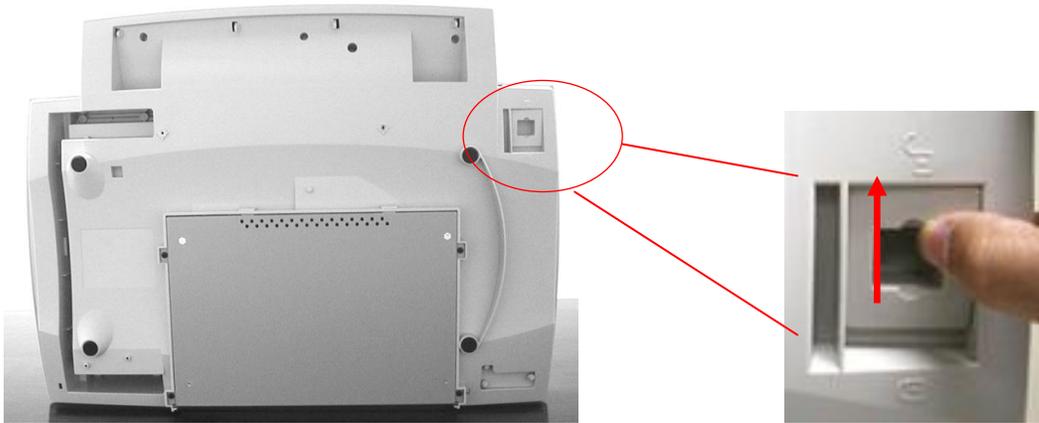


Figure 2.2 Unlock the Scanning Unit

## 2.4 Cable Connection

Two cables are required to operate the scanner: the 1394 signal cable and the power cable. The power cable connects the scanner to the power source. The 1394 signal cable connects the scanner to the host for image transfer.

### 2.4.1 Power Cable Connection

1. Remove the power cable from the PVC bag.
2. Turn the power switch to the “off” position (“0” depressed).
3. Connect the female plug of the power cable to the scanner connector, and press it firmly into place. (See Figure 2.4)
4. Connect the other end of the power cable to the power outlet, and press it firmly into place.

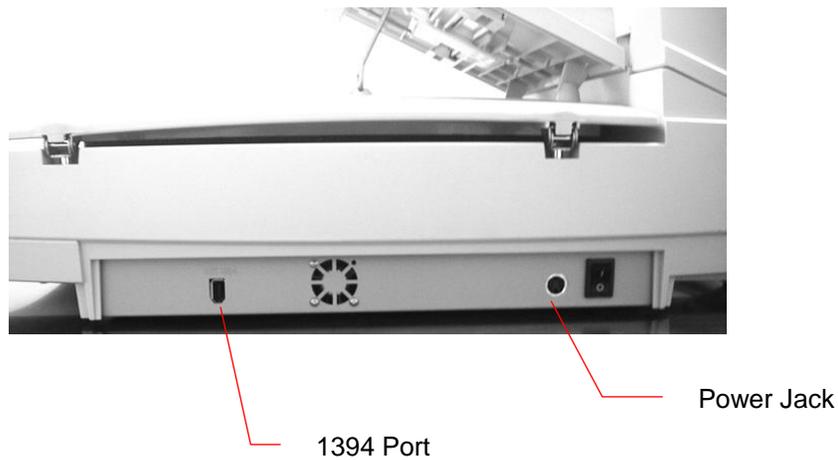


Figure 2.4 Cable connection



# 3. Problem Solving

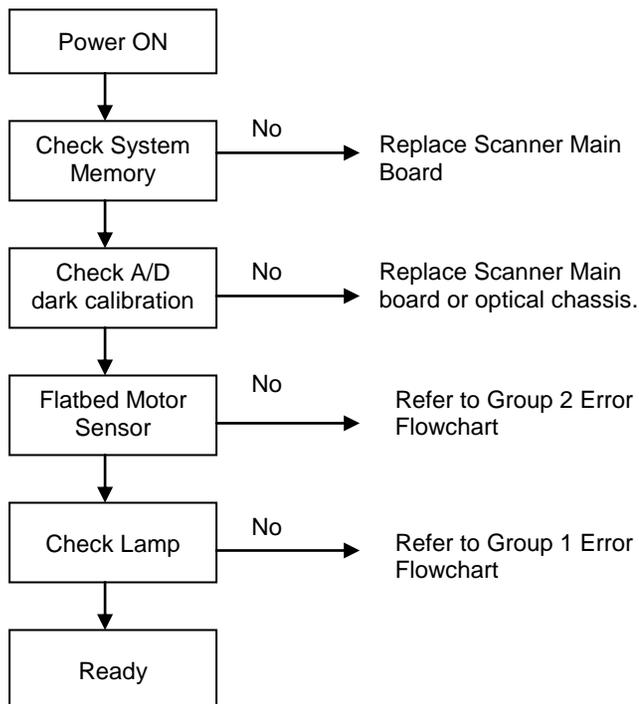
<b>3.1</b>	<b>Diagnostics</b>
<b>3.2</b>	<b>Troubleshooting</b>

This chapter describes two methods to solve the operational problems. The first relies on the 3200MFP's internal diagnostics. The second uses troubleshooting flowcharts and tables to isolate the problem. In many cases, the internal diagnostics will help you to locate the source of the problem quickly. Use these diagnostics first. If the diagnostics do not locate the source of the problem, refer to Section 3.2 **Troubleshooting**.

## 3.1 Diagnostics

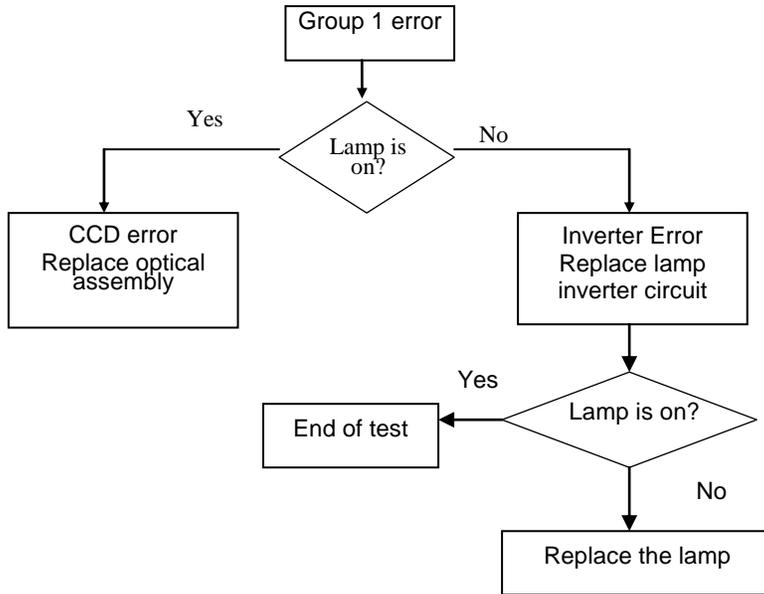
### 3.1.1 Diagnostic Flowcharts

Use the flowcharts that follow to determine the exact problem when either the online or offline diagnostics indicate a group error. Refer to Chapter 4 for parts replacement.



### 3.1.1.1 Group 1 Error Flowchart

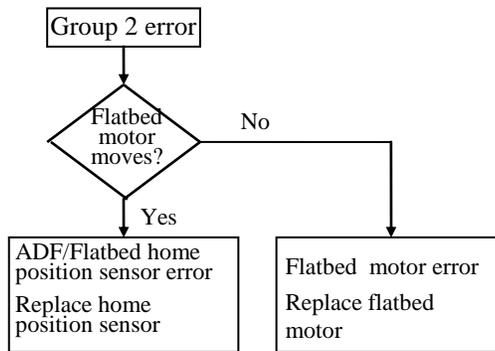
This flowchart applies when the flatbed lamp blinks seven or eight times. Seven blinks indicate the lamp in the flatbed unit is defective while eight blinks indicate the lamp in the ADF optical chassis is defective.



Flowchart 3.1

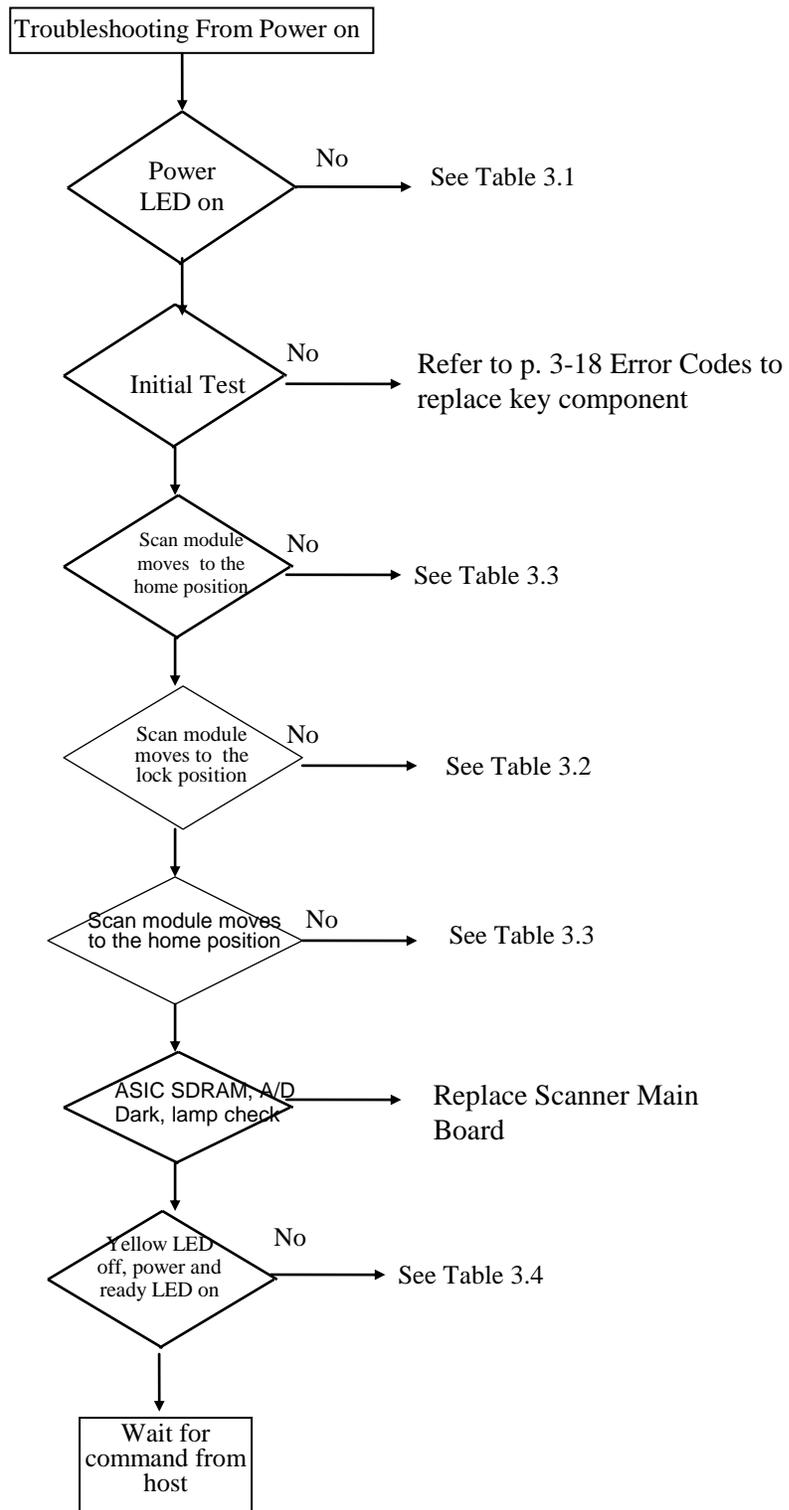
### 3.1.1.2 Group 2 Error Flowchart (Flatbed)

This flowchart applies when the flatbed lamp blinks six times.



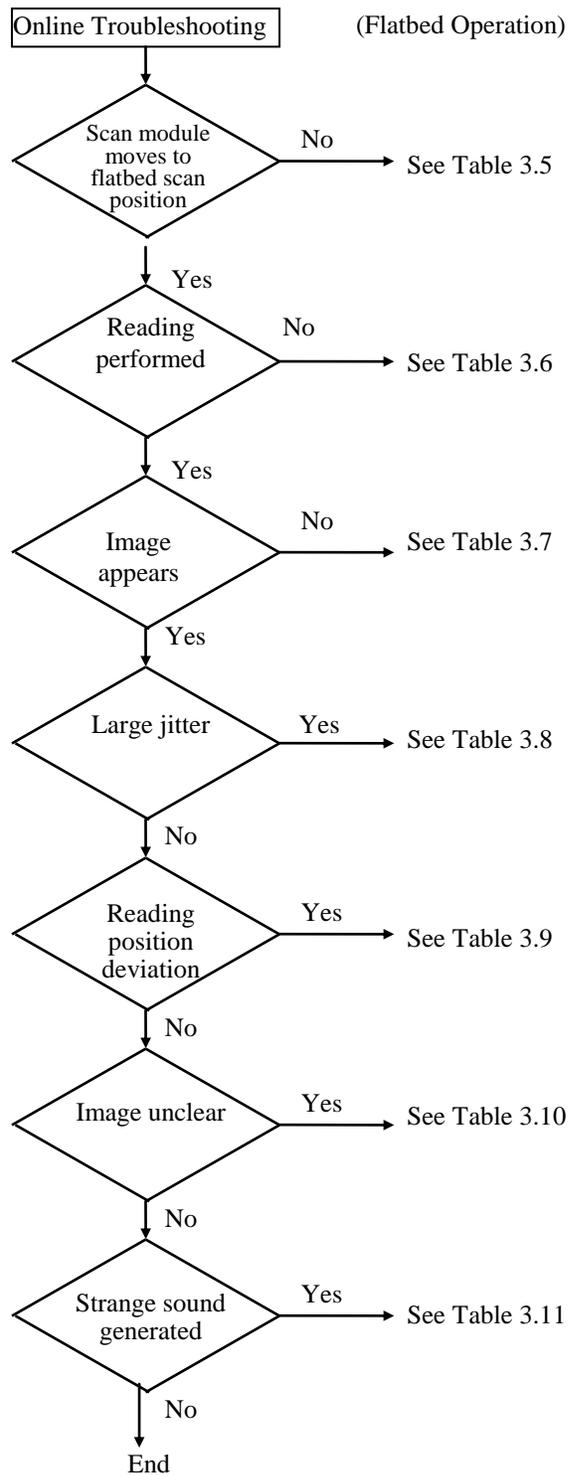
Flowchart 3.2

3.1.1.3 Troubleshooting flowchart: power on to scanner ready.

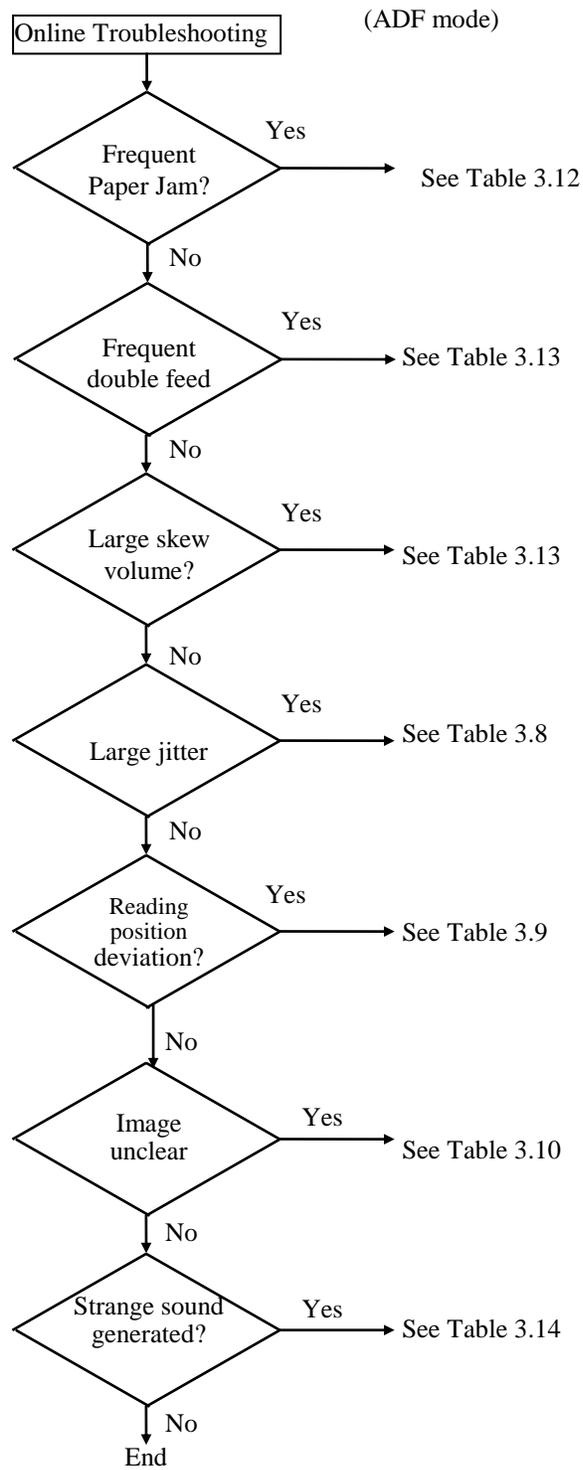


Flowchart 3.3

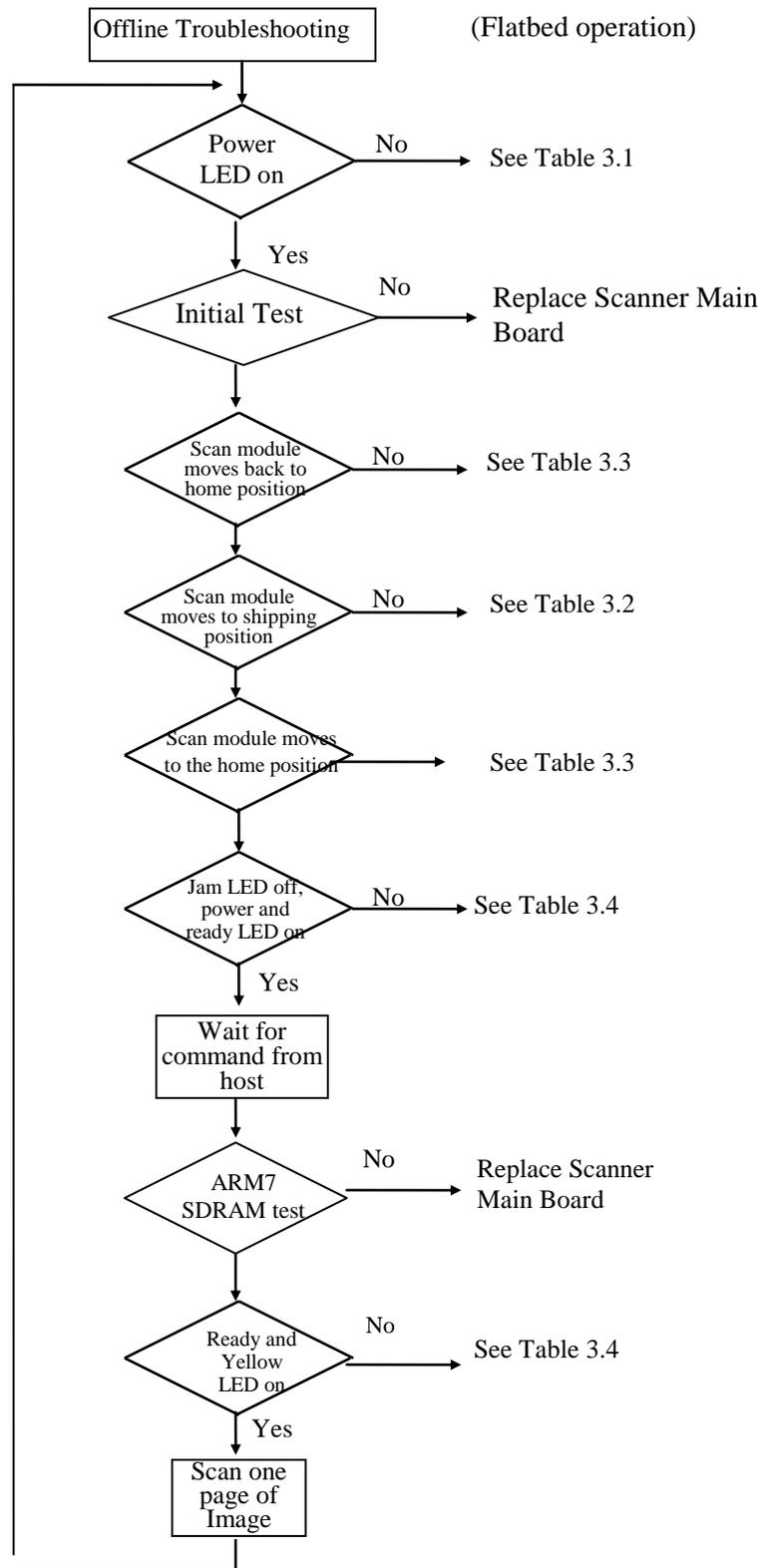
### 3.1.1.4 Troubleshooting flowchart: online flatbed operation



3.1.1.5 Troubleshooting flowchart: online ADF operation



3.1.1.6 Troubleshooting flowchart: Offline flatbed operation



### 3.2.2 Tables

The tables in this section provide detailed troubleshooting information.

#### 3.1.1.7 The Power LED does not go on

Cause	Relevant Unit	Check Method υ	Maintenance Method	Remark
Unplugged from outlet	None	Visual check	Insert the AC plug into the outlet.	None
AC power unplugged at unit	None	Visual check	Insert the AC cable into unit.	None
Power switch is OFF	None	Visual check	Turn the power switch on.	None
Power unit AC input connector disconnected	None	Visual check	Connect the connector.	None
Power switch connector disconnected	None	Visual check	Connect the connector.	None
Power unit-main PCBA connection failure	None	Visual check	Connect the connector.	None
Power unit output voltage failure	Power unit	Output voltage (+5V) check Ξ	Replace the power unit	None
PCBA Failure	*main control PCBA *LED board	Tester check (+5V, GND) Ξ	Remove the cause or replace the PCBA.	None
LED board-main PCBA connection failure	None	Visual check	Connect the connector	None

Table 3.1

υ = Check method explains how to check the failed item.

The visual check can be made by physically observing the part or observing the offline test display on the front panel. The tester check is made by checking the voltage levels of the relevant units. (See section 4.6)

Ξ = Refer to section 4.6.

3.1.1.8 Scan module does not move to lock position

Cause	Relevant Unit	Check Method	Maintenance Method	Remark
Flatbed CCD board-main control PCBA cable failure.	Sensor board-main control PCBA cable	Tester or visual check H	Replace the home position cable.	υ
Home position sensor board failure	CCD board	Tester check H	Replace the CCD PCBA	None
Motor-main control PCBA connection failure	None	Visual check	Connect the connector.	None
Motor failure	Motor	Visual check	Replace the motor.	None
Power supply-main control board connection failure	None	Visual check	Connect the connector.	None
Power supply fails.	Power supply	Tester check (+24V, GND) H	Replace the power supply.	None

Table 3.2

υ = See section 1.5.3 Wiring configuration  
H = Refer to section 4.6

3.1.1.9 Scan module does not move to the home position

Cause	Relevant Unit	Check Method	Maintenance Method	Remark
Home position sensor board-main control PCBA connection failure	None	Visual check H	Connect the connector.	None
Home position sensor board-main control PCBA cable failure	Sensor board-main control PCBA cable	Tester or visual check H	Replace the home position sensor cable.	υ
Power supply-main control board connection failure	None	Visual check	Connect the connector.	None
Power supply fails	Power supply	Tester check ( +24V, GND) H	Replace the power supply.	None
CCD board-main control board connection failure	None	Visual check	Connect the connector	None
CCD board fails	CCD board	Tester check	Replace the optical unit	None

Table 3.3

υ = See section 1.5.3 Wiring configuration

H = Refer to section 4.6

3.1.1.10 Ready and Power LED does not light on

Cause	Relevant Unit	Check Method	Maintenance Method	Remark
ADF control board-main control PCBA connection failure	None	Visual check	Check connector and the cable between the ADF control board and main PCBA board.	None
ADF control board-main control PCBA cable failure	Sensor board-main control PCBA cable	Tester or visual check H	Check ADF control board.	υ
Home position sensor board failure	Sensor board	Tester check H	Check PCBA main board.	None
Power supply-main control board connection failure	None	Visual check	Connect the connector.	None
Power supply fails	Power supply	Tester check (+24V, GND) H	Replace the power supply.	None

Table 3.4

υ = See section 1.5.3 Wiring configuration

H = Refer to section 4.6

**3.1.1.11 Scan module does not move to the flatbed position**

Cause	Relevant Unit	Check Method	Maintenance Method	Remark
Power supply-main control board connection failure	None	Visual check	Replace the power supply.	None
Power supply fails	Power supply	Tester check (+24V,GND) H	Replace the power supply.	None
Motor-main control PCBA connection failure	None	Visual check	Connect the connector.	None
Motor failure	Motor	Visual check H	Replace the motor module.	None

**Table 3.5**

H Refer to section 4.6.

3.1.1.12 *Reading is not performed*

Cause	Relevant Unit	Check Method	Maintenance Method	Remark
ADF cover open	ADF cover	Visual check	Close the ADF cover.	None

Table 3.6

3.1.1.13 *Image does not appear*

Cause	Relevant Unit	Check Method	Maintenance Method	Remark
ADF cover open	ADF cover	Visual check	Close the ADF cover	None
Power supply-main control board connection failure	None	Visual check	Connect the connector.	None
Power supply fails.	Power supply	Tester check (+24V, GND) H	Replace the power supply.	None
Lamp failure	Lamp	Visual check	Replace the lamp.	None
Inverter failure	Inverter	Visual check	Replace the inverter.	None
CCD board-main control board connection failure	None	Visual check	Connect the connector.	None
CCD board fails.	CCD Board	Visual check	Replace the optical unit.	None

Table 3.7

3.1.1.14 *Large jitter*

Cause	Relevant Unit	Check Method	Maintenance Method	Remark
Power supply-main control board connection failure	None	Visual check	Connect the connector.	None
Power supply fails	Power supply	Tester check (+24V, GND) H	Replace the power supply.	None
Motor-main control PCBA connection failure	None	Visual check	Connect the connector.	None
Motor failure	Motor	Visual check	Replace the motor.	None

Table 3.8

*H* = Refer to section 4.6.

### 3.1.1.15 Reading position deviation

Cause	Relevant Unit	Check Method	Maintenance Method	Remark
Power supply-main control board connection failure	None	Visual check	Connect the connector.	None
Power supply fails	Power supply	Tester check (+5V, +24V, GND) H	Replace the power supply.	None
Motor- main control PCBA connection failure	None	Visual check	Connect the connector.	None
Motor failure	Motor	Visual check	Replace the motor	None
Home position sensor board-main control PCBA cable failure	None	Visual check	Connect the connector	None
Home position sensor board-main control PCBA cable failure	Sensor board-main control PCBA cable	Tester or visual check	Replace the home position sensor cable	None
Home position sensor board failure	Sensor board	Tester check	Replace the PCBA.	None

Table 3.9

H Refer to section 4.6.

### 3.1.1.16 Image unclear

Cause	Relevant Unit	Check Method	Maintenance Method	Remark
Lamp too dark	Lamp	Visual check	Replace with a new lamp.	None
Dirt on calibration reference plate	Calibration reference plate	Visual check	Clean the flatbed glass with isopropyl alcohol.	None
Dirt on calibration reference plate	Calibration reference plate	Visual check	Clean the calibration reference plate with isopropyl alcohol.	None
Dirt on the mirrors	Mirrors	Visual check	Clean the mirrors with isopropyl alcohol.	None
Dirt on the lens	Lens	Visual check	Clean the lens with isopropyl alcohol.	None

Table 3.10

**3.1.1.17 Strange Sound Generated (flatbed)**

Cause	Relevant Unit	Check Method	Maintenance Method	Remark
Motor unit failure	Motor unit	Replace the motor unit.	Replace the motor unit.	None
Main control PCBA failure	Main control PCBA	Replace the main control PCBA.	Replace the main control PCBA.	None
Scanning module failure	Scanning module	Check if scanning module is loose.	Replace the optical unit.	None
Dirt on rail	None	Visual check	Clean the rail with isopropyl alcohol	None

**Table 3.11**

**3.1.1.18 Frequent paper jam**

Cause	Relevant Unit	Check Method	Maintenance Method	Remark
Paper setting failure	Operation error	Is the paper correctly set in the paper chute?	Teach users to properly position the paper.	None
Paper failure	operation error	Is the specified paper used?	None	None
ADF connector slip-off	ADF unit	Visual check of motor rotation	Connect the connector.	None
Pad assembly failure	Pad assembly	Check the pad assembly for wear and tear	Replace the pad assembly/ touch spring unit.	None
ADF unit failure	ADF unit	Replace the ADF unit.	Replace the ADF unit.	None

**Table 3.12**

**3.1.1.19 Frequent double feed and skew**

<b>Cause</b>	<b>Relevant Unit</b>	<b>Check Method</b>	<b>Maintenance Method</b>	<b>Remark</b>
Paper setting failure	Operation error	Is the paper correctly set in the paper chute?	Teach users to properly position the paper	None
Paper failure	Operation error	Is the specified paper used	None	None
ADF connector slip-off	ADF unit	Visual check of motor rotation	Connect the connector.	None
Pad assembly failure	Pad assembly	Check the pad assembly for wear and tear.	Replace the pad assembly/ touch spring unit.	None
ADF unit failure	ADF unit	Replace the ADF unit.	Replace the ADF unit.	None

**Table 3.13**

**3.1.1.20 Strange sound generated (ADF)**

<b>Cause</b>	<b>Relevant Unit</b>	<b>Check Method</b>	<b>Maintenance Method</b>	<b>Remark</b>
Paper setting failure	Operation error	Is the paper correctly set in the paper chute?	Teach users to properly position the paper	None
paper failure	Operation error	Is the specified paper used?	None	None
ADF connector slip-off	ADF unit	Visual check of motor rotation	Connect the connector.	None
ADF unit failure	ADF unit	Replace the ADF unit	Replace the ADF unit.	None

**Table 3.14**

### 3.2 Error Code

Error Codes	Lamp blink	Comment	Change
0A980(flatbed) SDRAM test error	1	SDRAM fail	Change scanner card
0A980(ADF) SDRAM test error	2	SDRAM fail	Change scanner card
A/D dark calibration error (flatbed)	4	Flatbed error	Change Flatbed lamp mechanism or scanner card
A/D dark calibration error (ADF)	5	ADF error	Change duplex side of ADF lamp mechanism or scanner card
Home sensor or flatbed motor error	6	Flatbed chassis did not move to proper position	If flatbed motor not moving, change flatbed motor or scanner card, else change flatbed mechanism
Lamp check error (flatbed)	7	Flatbed lamp error	Change flatbed lamp
Lamp check error (ADF)	8	ADF lamp error	Change ADF lamp
ADF paper jam	9	OK	OK
ADF cover open	10	OK	OK

# 4. Maintenance

- 4.1 Cleaning
- 4.2 Maintenance Tools
- 4.3 Replacement Components Outer View
- 4.4 Parts That Must Not Be Disassembled
- 4.5 Spare Parts Replacement

This chapter describes methods for cleaning, and the maintenance parts replacement, adjustment and lubrication necessary for normal operation of the image scanner.

Perform preventative maintenance in the shorter term either every 6 months or every 60,000 sheets scanning.

## 4.1 Cleaning

### 4.1.1 Cover and Glass

With soft cloth, wipe the cover and glass. If the dirt is heavy, use a neutral cleanser or alcohol. Wipe the glass carefully so no cleanser remains on the surface.

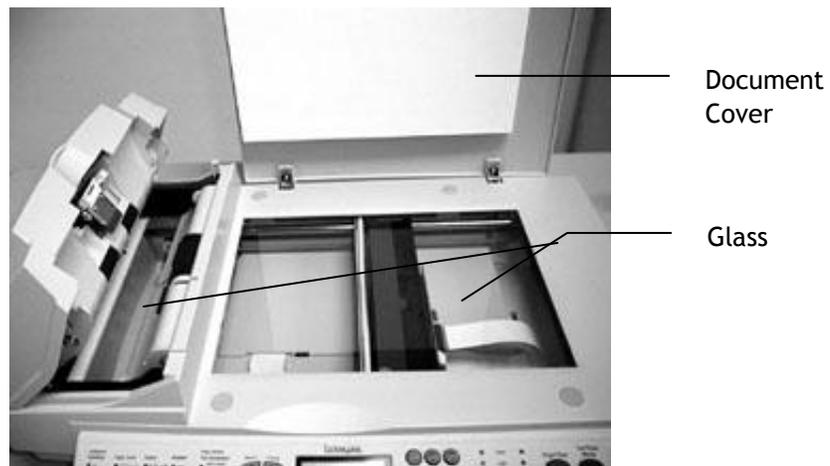


Figure 4-1 Cleaning Areas

### 4.1.2 ADF unit

Push the ADF unit backward to open the unit. Clean the pad assembly and feed roller (Fig. 4-1) in the ADF section with a lint-free cloth and isopropyl alcohol. Clean the pad assembly by wiping it in the direction of the arrow as shown in Fig. 4-2.

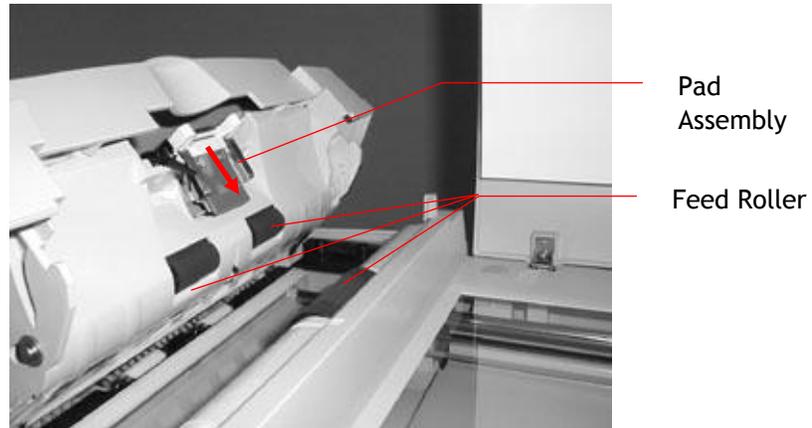


Figure 4.2 Feed Roller (with ADF open)

## 4.2 Maintenance Tools

Table 4.1 describes the maintenance tools necessary for the maintenance of this equipment.

No.	Name	Description
1	Flathead screwdriver	Idler pulley module screw
2	Philips screwdriver (magnetic)	Nominal No.2 M3, M4
3	Nut driver	6 mm
4	Oil	LPS-1
5	Grease	Lubricants SYN 7068
6	Alcohol (Isopropyl 91% >)	Cleaning
7	TBD	Image quality check
8	Digital voltmeter	With 0.01 V range
9	Oscilloscope	10MHz or more with external sweep
10	Compressed air	Can air (oil free)

Table 4.1 Maintenance tools

\* To order this test chart please contact: Institute of Electrical and Electronics Engineers, Inc. 345 East 47th Street, New York, NY 10017. (800) 678-IEEE

## 4.3 Replacement Components Outer View

### 4.3.1 Main Control PCBA

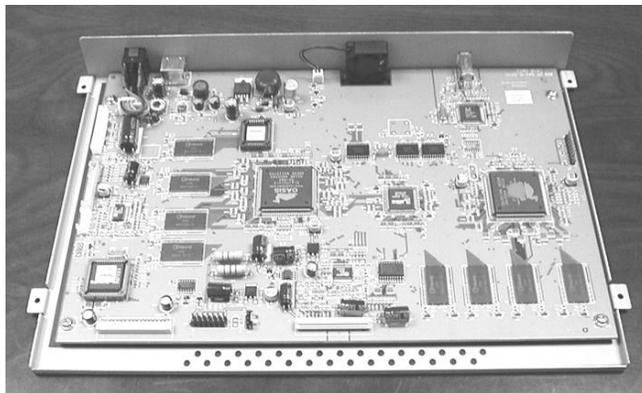
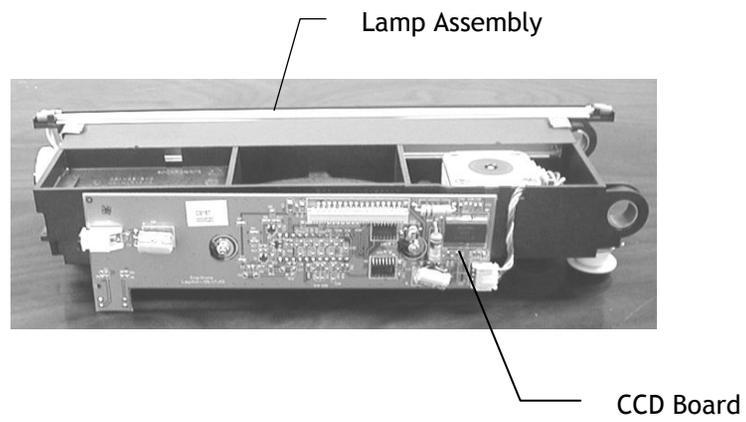
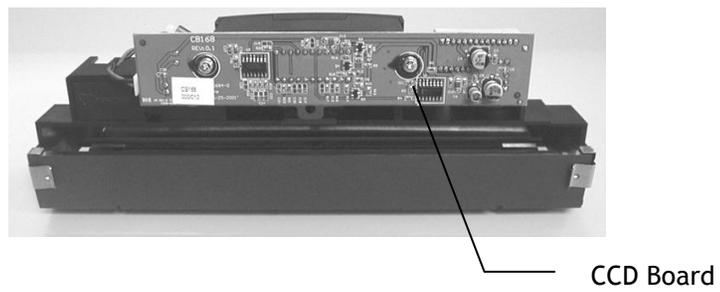


Figure 4.3 Main control PCBA

### 4.3.2 Optical chassis unit



**Figure 4.4 Flatbed Optical Chassis Unit**



**Figure 4.5 ADF Optical Chassis Unit**

### 4.3.3 Lamp Inverter circuit

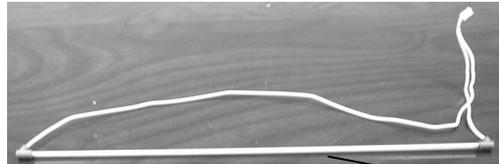


Figure 4.6 Lamp inverter circuit

4.3.4 Lamp (Flatbed)

Name	Specification
Lamp	Cold cathode fluorescent lamp

Table 4.2



Lamp

Figure 4.7 Lamp (Flatbed)

### 4.3.5 Motor unit (Flatbed)

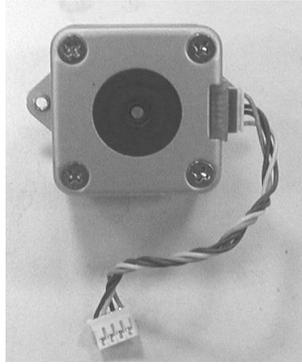


Figure 4.8 Motor unit (Flatbed)

#### 4.3.6 Belt (Flatbed)

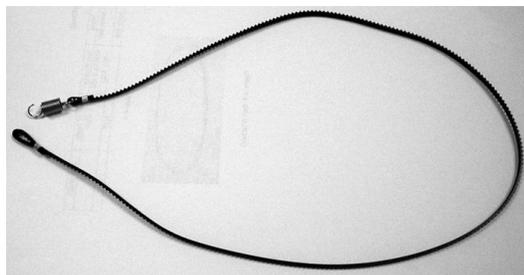


Figure 4.9 Belt (Flatbed)

### 4.3.7 ADF unit

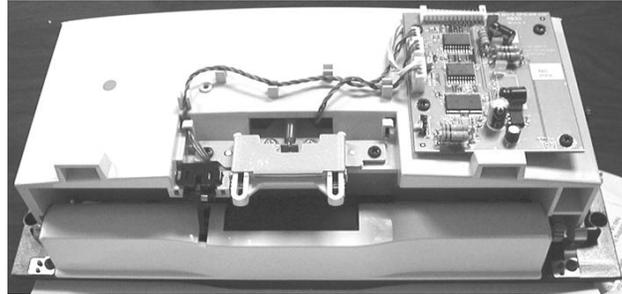


Figure 4.10 ADF unit

### 4.3.8 Control Panel PCBA



Figure 4.11 Control Panel PCBA

### 4.3.9 Parts That Must Not Be Disassembled

Parts shown below must not be disassembled because they are adjusted at the factory.

#### 4.3.9.1 CCD Board Screws

Screws for CCD board in the optical chassis unit are as shown.

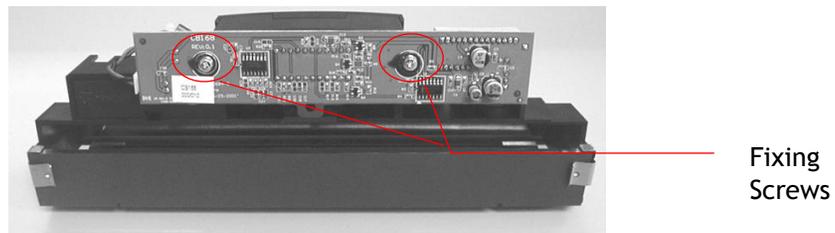
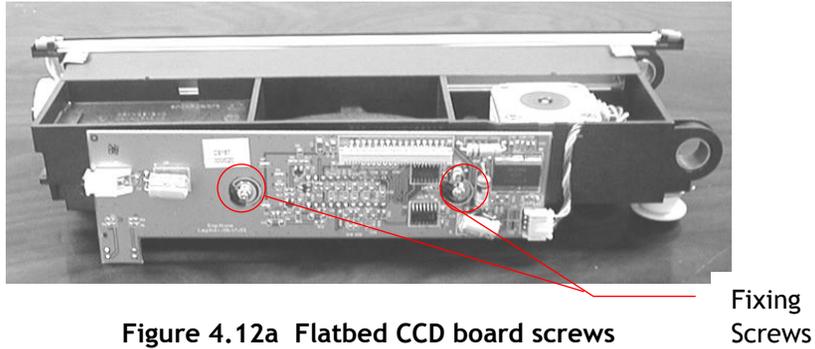


Figure 4.12b ADF CCD board screws

## 4.4 Spare Parts Replacement

This section describes the spare parts replacement procedures. Depending on the part, adjustment or lubrication may be necessary, but this will be described in Section 4.7.

### 4.4.1 Notes on Replacement

Clean the disassembly and assembly location.

Turn off the power switch and remove the AC plug from the outlet before disassembly and assembly.

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

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

After replacement, check the contacts and spare part mounting.

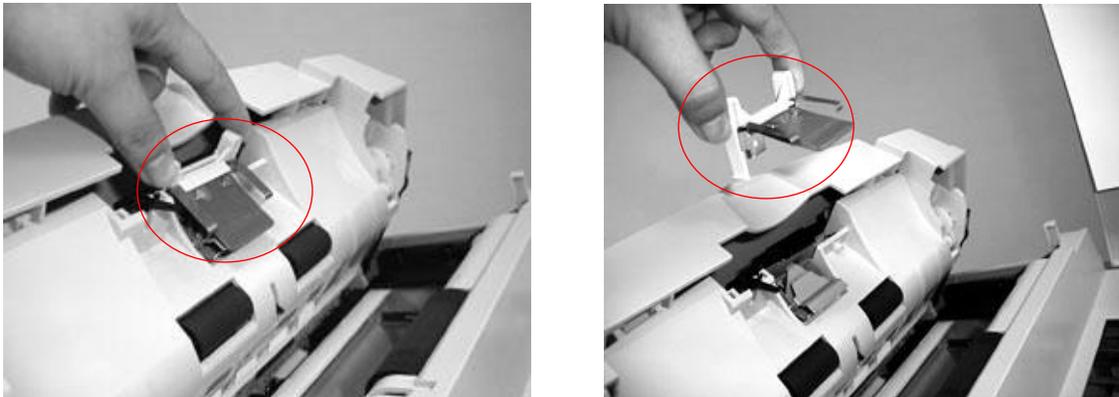
Assemble in the reverse order of disassembly.

### 4.4.2 ADF Snap-in Pad Module Removal and Mounting

After scanning approximately 100,000 pages through the ADF, the ADF pad module may be worn out and you may experience problems with document feeding. In this case, please replace the ADF pad module with a new one. For ordering the parts, please consult your nearest dealer and follow the procedure below to replace it.

To remove the ADF snap-in pad module,

1. Push the ADF unit backward.
2. Use your fingers to gently pull out the snap-in pad module.



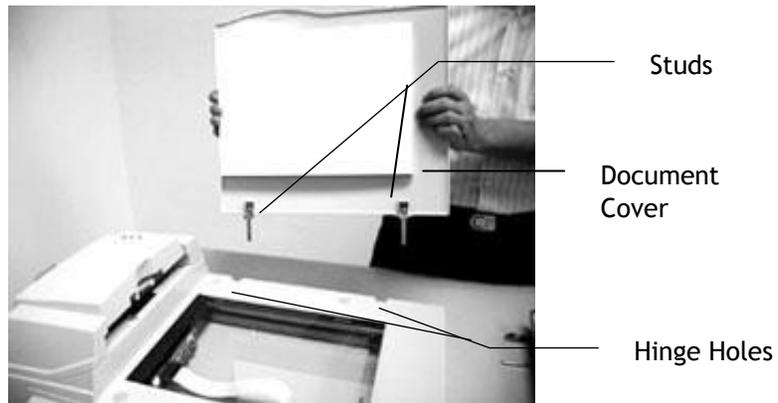
**Figure 4.13 ADF Snap-in Pad Module Removal**

To mount the ADF snap-in module,

1. Use your fingers to hold both arms of the snap-in pad module.
2. Gently place the snap-in pad module into the pad holder. (See Figure 4.13)

### 4.4.3 Document Cover Removal

As shown below, lift the document cover to remove the studs from the hinge holes. The studs are loosely attached to the hinge holes in the purpose to cover the depth of your original.



**Figure 4.14 Document Cover Removal**

#### 4.4.4 ADF Cover Removal & Mounting

As shown below, loosen the ADF cover fixing screws and remove the ADF cover to the direction of the arrow.

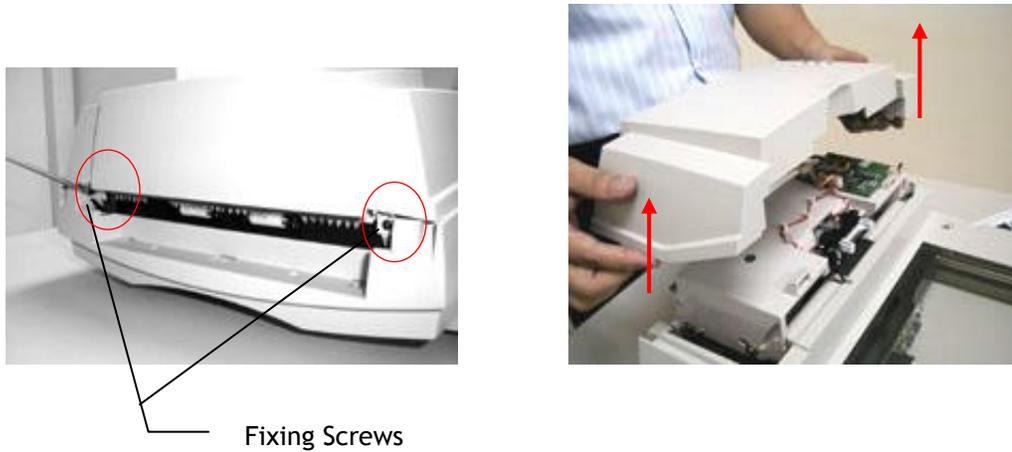


Figure 4.15a ADF Cover Removal

To mount the ADF cover,

1. Push the ADF unit backward.
2. Take out the ADF cover and align the two clip-joints on the ADF unit as shown in Figure 4.15b.
3. Fasten the fixing screws. (see Figure 4.15a)

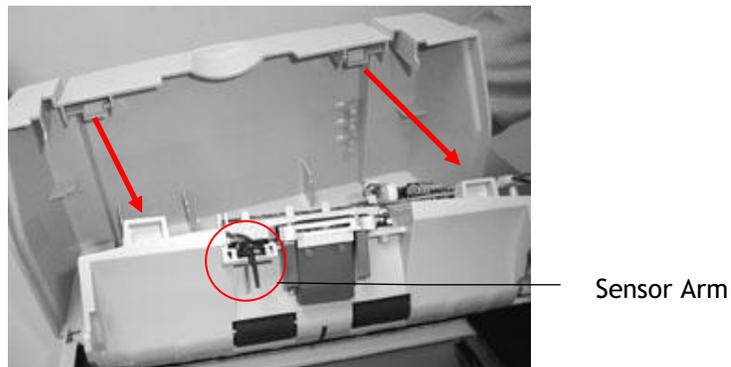


Figure 4.15b Check the photo-sensor's arm after the ADF cover is mounted.

#### ***Important!***

After the ADF cover is mounted, move the sensor arm to make sure that moves freely.

#### 4.4.5 ADF Optical Chassis Removal

1. Remove the ADF cover. (See subsection 4.4.4)
2. Remove the ADF fixing screws to pull the ADF optical chassis as shown in Figure 4.16a.
3. Use a flat screwdriver to remove the inverter board.
4. Disconnect the ADF motor board cable as shown in Figure 4.16b.

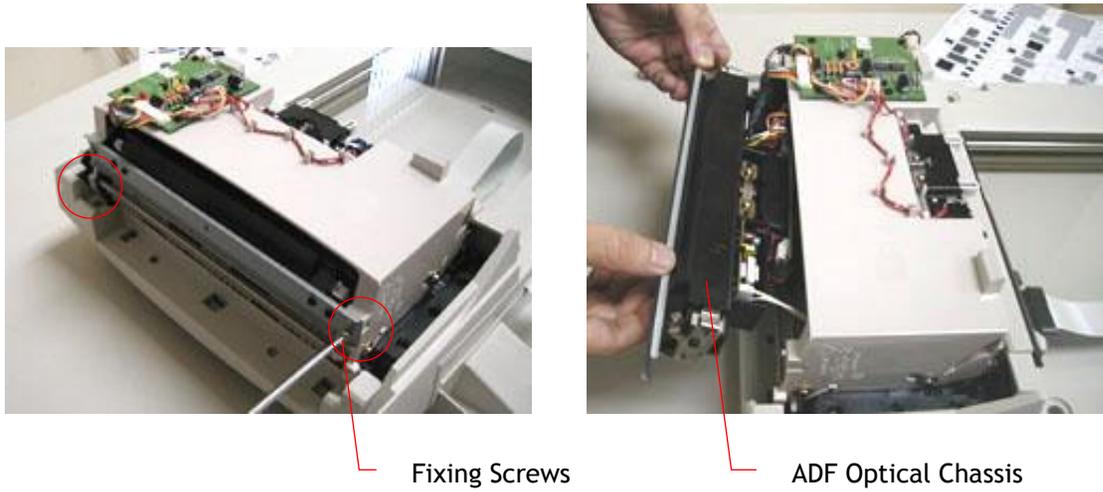


Figure 4.16a Removing the ADF Optical Chassis (1)

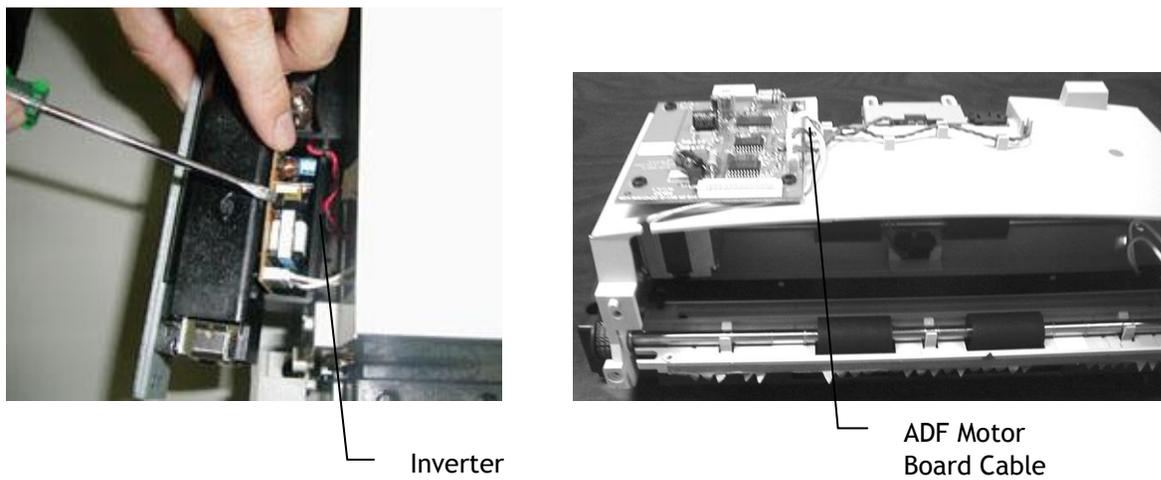
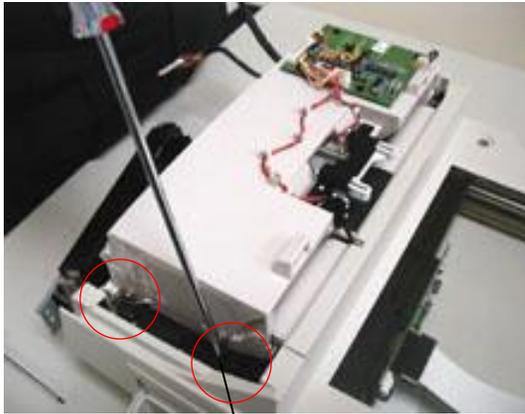


Figure 4.16b Removing the ADF Optical Chassis (2)

#### 4.4.6 ADF Unit Removal

1. Remove the ADF optical chassis (See subsection 4.4.5).
2. Remove the fixing screws located at the four corners of the ADF unit.
3. Lift the ADF unit to remove it as shown in Figure 4-17.

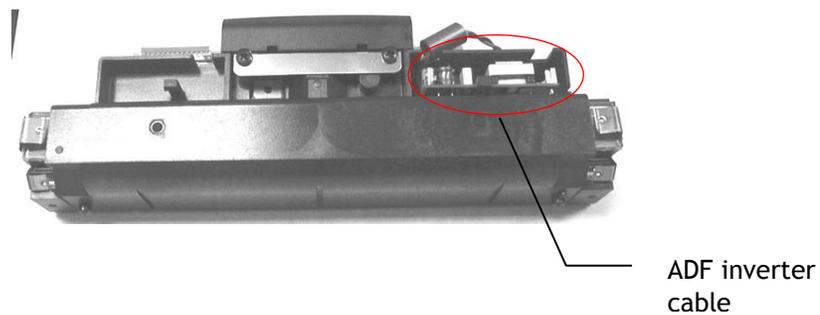


Fixing  
Screws(four)

**Figure 4.17 ADF Unit Removal**

#### 4.4.7 ADF Inverter Removal

1. Remove the ADF optical chassis (See subsection 4.4.5).
2. Disconnect the ADF inverter cable.
3. Remove the ADF inverter.



**Figure 4.18 ADF Unit Removal**

#### 4.4.8 ADF Lamp Removal

1. Remove the ADF optical chassis. (See subsection 4.4.5)
2. Use your right hand to hold the main frame of the ADF unit while the other hand hold the base of the ADF unit. Then push forward to separate these two parts.
3. Use pincerpliers to remove the screws on the ADF lamp assembly as shown in below.
4. Gently remove the lamp from the lamp holder.

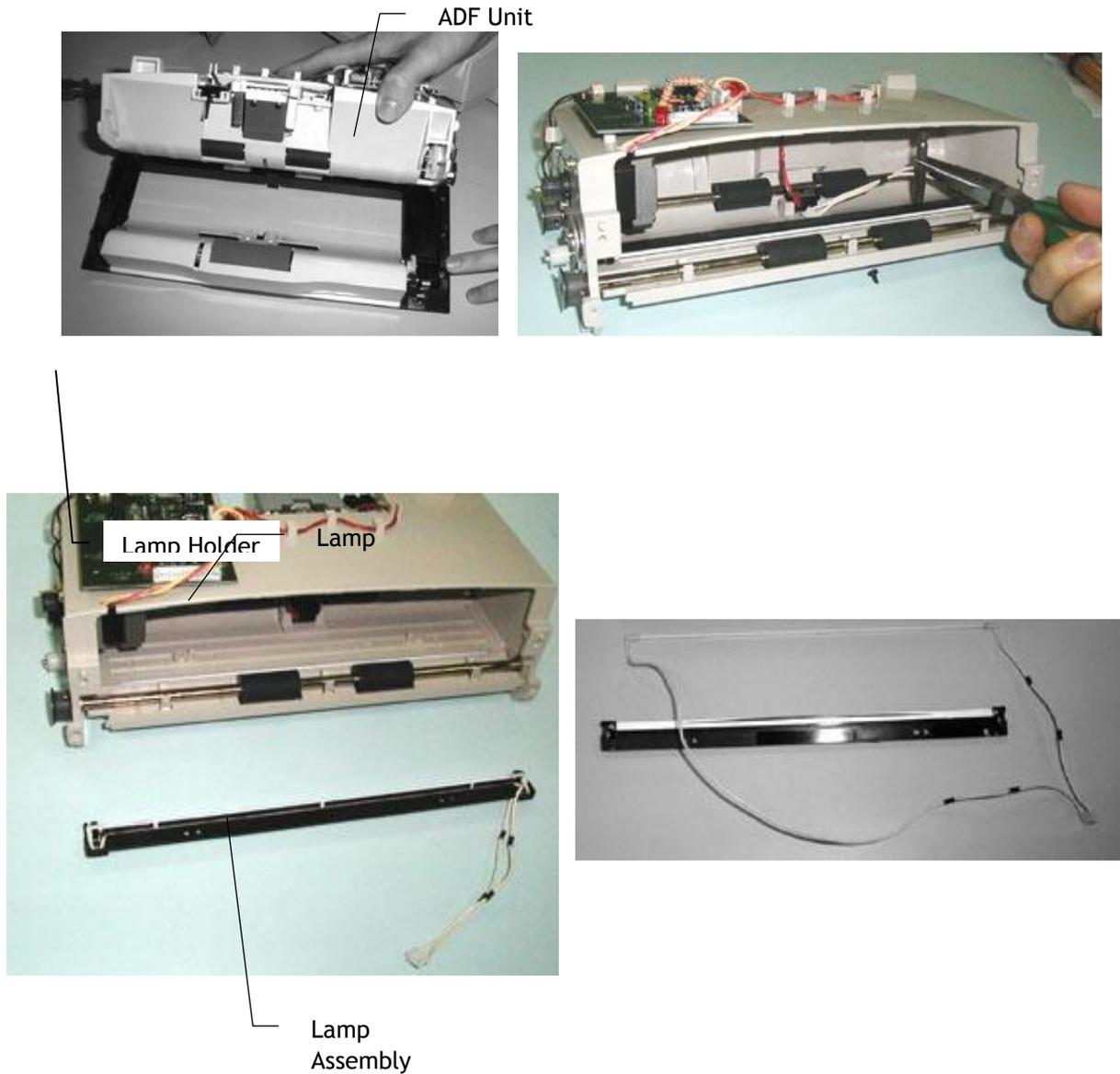


Figure 4.19 ADF Lamp Assembly Removal

## 4.4.9 Upper Housing Removal

1. Remove the Document cover. (See subsection 4.4.3)
2. Remove the ADF unit. (See subsection 4.4.4 and subsection 4.4.5)
3. Remove the rubber pad with a flat screwdriver.
4. Remove the fixing screws beneath the rubber pad.
5. Loosen the attachment on the side of the document cover to remove the upper housing.

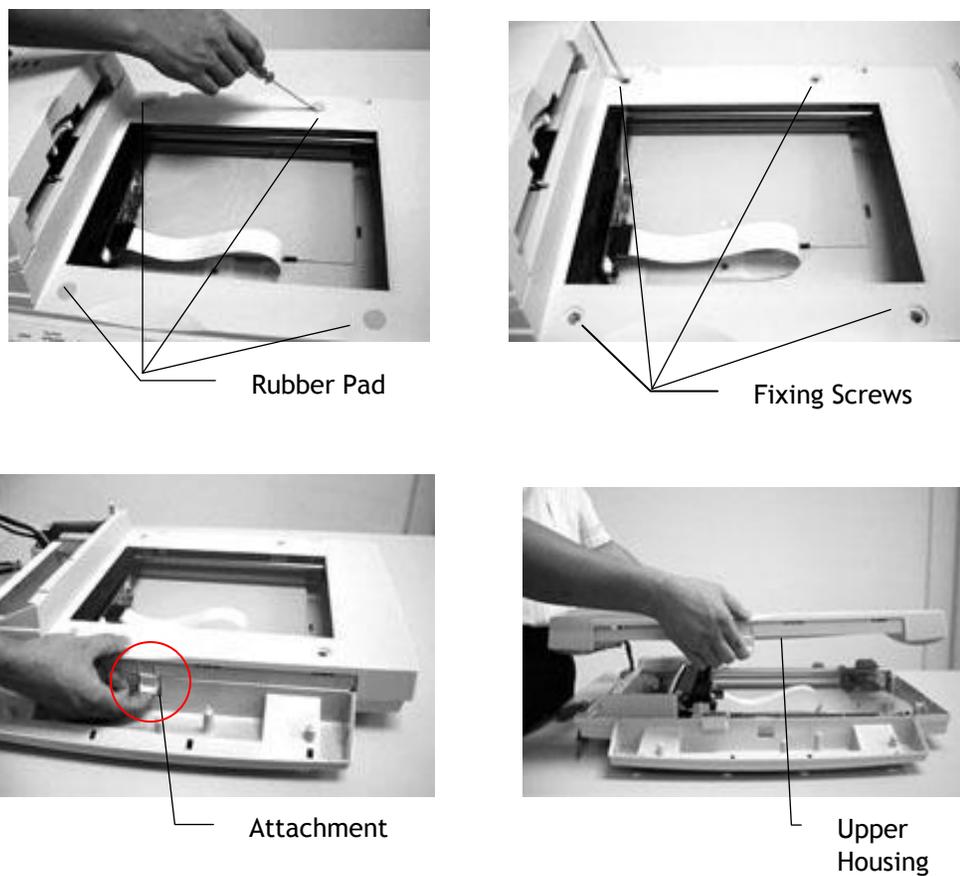
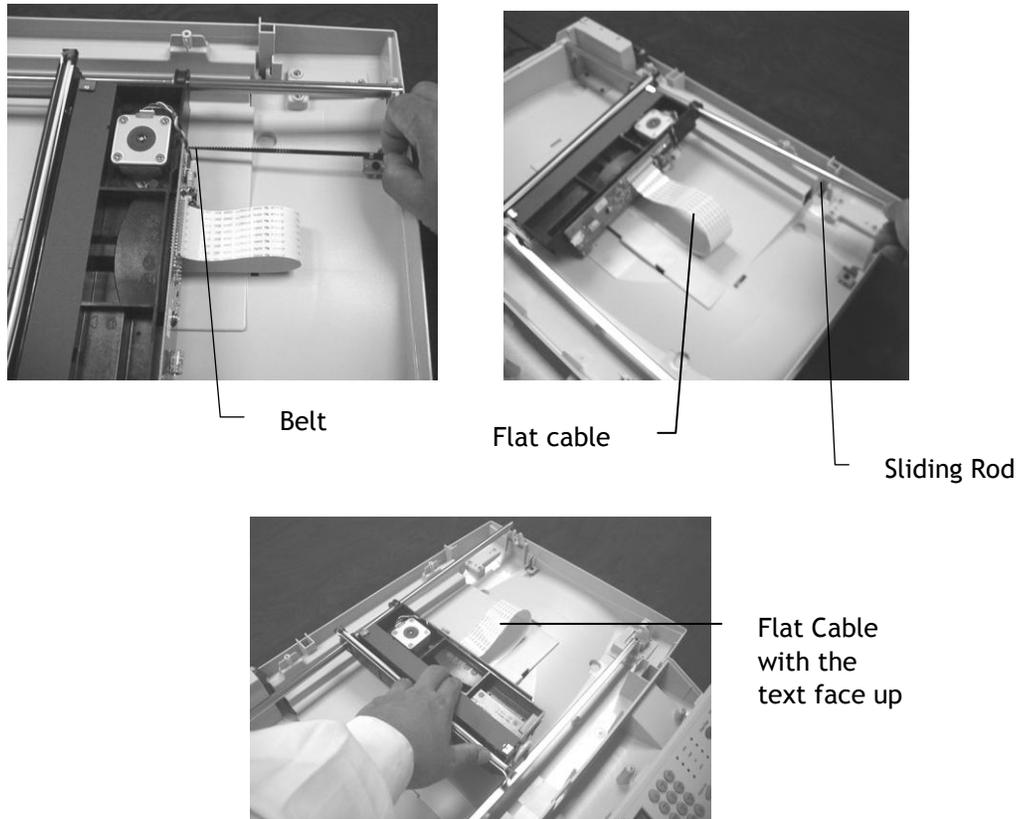


Figure 4.20 Upper Housing Removal

## 4.4.10 Flatbed Optical Chassis Removal

1. Remove the Document cover. (See subsection 4.4.3)
2. Remove the ADF unit. (See subsection 4.4.5 and subsection 4.4.6)
3. Remove the upper housing. (See subsection 4.5.7)
4. Loosen the belt from the wheel. (See following figure.)
5. Remove the sliding rod and the flat cable. (See following figure.)
6. Take out the flatbed optical chassis.



**Figure 4.21 Flatbed Optical Chassis Removal**

To install the optical chassis properly, please follow the reverse order of removal procedure.

### **Notes:**

1. The correct direction of CCD flat cable is as shown in Figure 4.20 with the text face up.
2. Please install the belt with the groove marks on the back of the belt.
3. After the belt is installed, make sure the belt's tension is fully carried by the tension spring.

#### 4.4.11 Flatbed Lamp Removal

1. Remove the flatbed optical chassis. (See subsection 4.4.8)
2. Remove the ADF unit. (See subsection 4.4.6)
3. Disconnect the lamp cable.

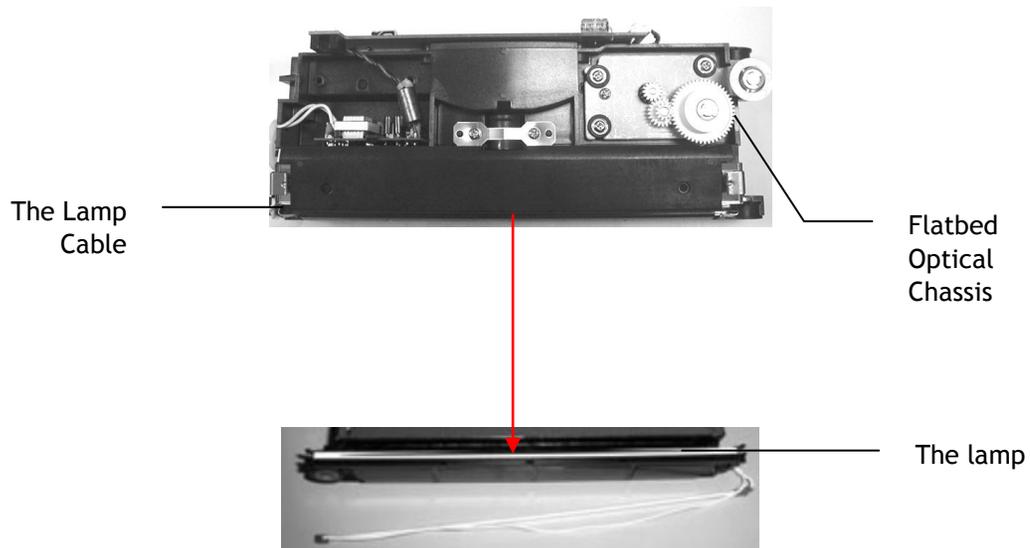
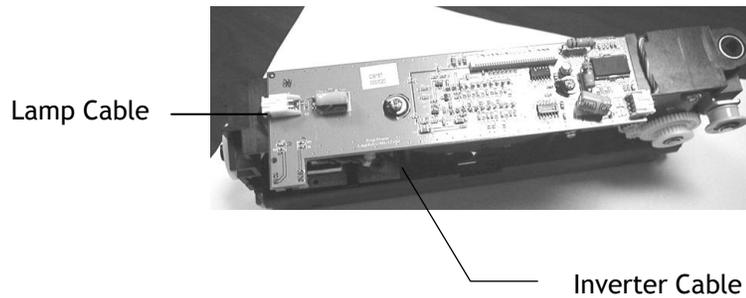


Figure 4.22 Lamp Removal

#### 4.4.12 Flatbed CCFL Inverter PCBA Replacement

1. Remove the flatbed optical chassis. (See subsection 4.5.7)
2. Disconnect the lamp cable (the white cable).
3. Disconnect the lamp inverter cable (the red cable).
4. Pull out the lamp inverter PCBA.



**Figure 4.23 The lamp inverter PCBA Removal (flatbed)**

#### 4.4.13 Motor (Flatbed) Removal

1. Remove the Document cover. (See subsection 4.5.2)
2. Remove the ADF unit. (See subsection 4.5.3 and subsection 4.5.4)
3. Remove the upper housing. (See subsection 4.5.6)
4. Remove the flatbed optical chassis. (See subsection 4.5.7)
5. Disconnect the motor cable.
6. Remove the ring on the gear indicated.
7. Remove motor screws.

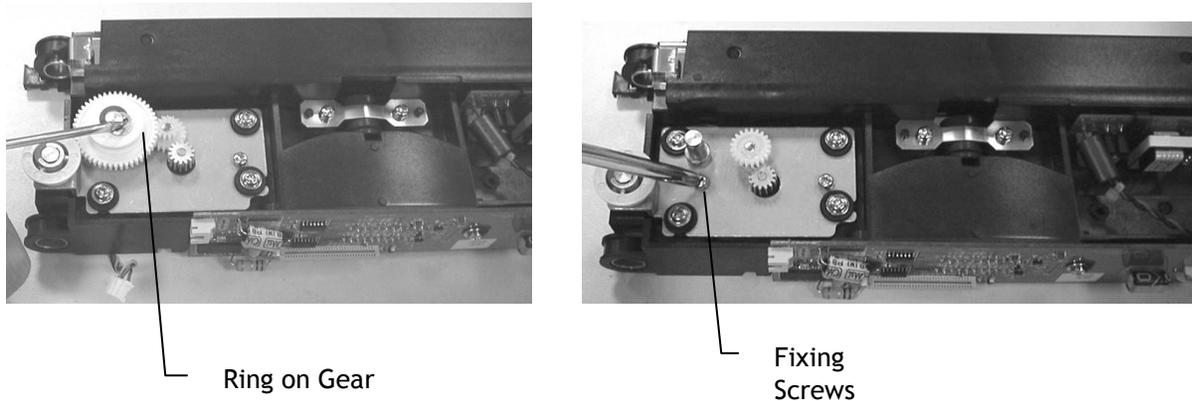


Figure 4.24 Motor Removal (Flatbed)

#### 4.4.14 The Control Panel PCBA Removal

1. Place the scanner on its side as shown in Figure 4.25.
2. Loosen the control panel from the scanner.
3. Disconnect the flat cable.
4. Remove the control panel cover gently.



Flat Cable

**Figure 4.25 The Control Panel PCBA Removal**

#### 4.4.15 Main Control PCBA Replacement

1. Loosen the metal cover fixing screws from the bottom housing as shown in Figure 4.26.
2. Remove all cables of the PCBA.
3. Remove all connectors.
4. Remove DB25 connector fixing screws with a nut driver.

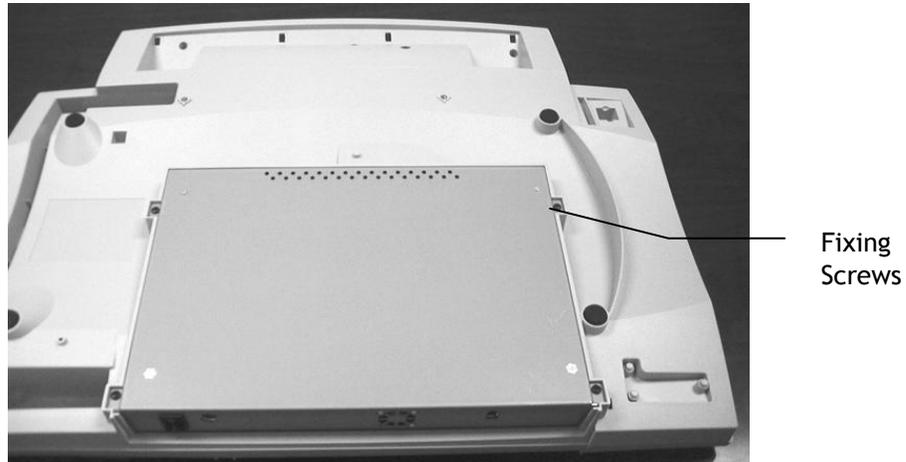


Figure 4.26 Metal Cover Removal

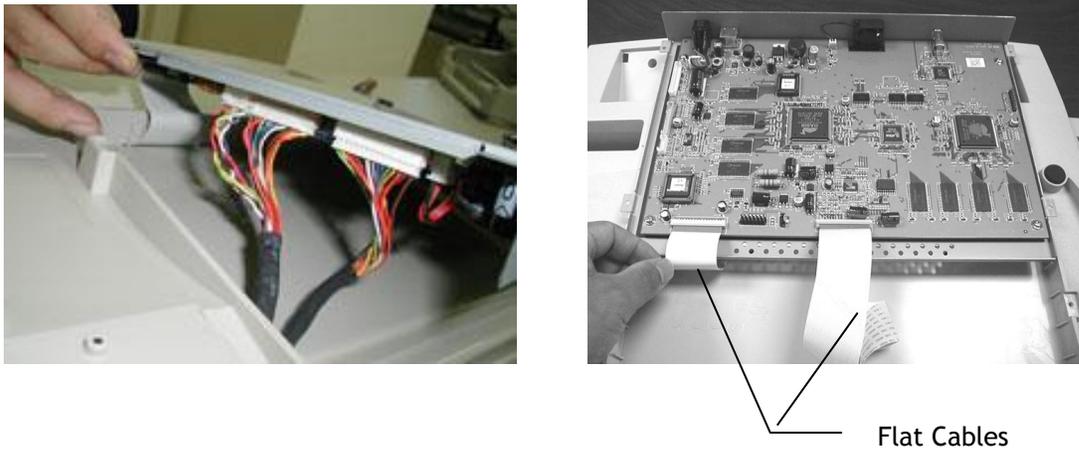


Figure 4.27 Disconnecting PCBA Cables

#### 4.4.16 LED & Sensor PCBA Replacement

1. Remove the ADF unit. (see subsection 4.5.5)
2. Disconnect all cables.

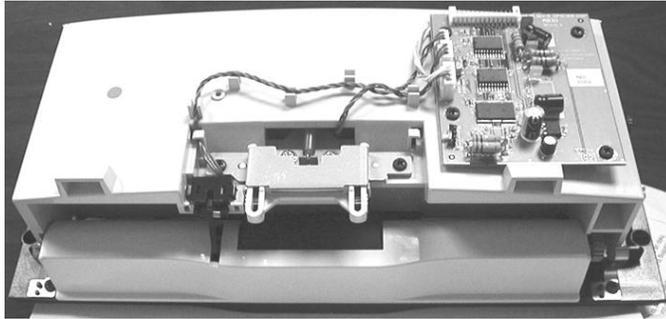


Figure 4.28 LED display PCBA replacement

## 4.5 PCBA Voltage Test

This chapter describes how to check parts for proper voltage levels.

### 4.5.1 Check power supply output voltage

Tool: DMM (Digital Multi Meter)

Procedure:

1. Loosen the screws on the main PCBA cover. Remove the metallic plate underneath the PCBA, but keep each cable connected.
2. Turn on the scanner.
3. Check the voltage level of each pin of J9 connector on right side of the main control PCBA. The specified voltage level for each pin of J9 is as follows:

Pin #14: +24VDC  
Pin #13: 24VGND  
Pin #4: +5VDC  
Pin #3: GND

### 4.5.2 Main control PCBA input power (+5V) failure check

Refer to the procedure above. (subsection 4.6.1)

### 4.5.3 LED display PCBA check

Tool: DMM (Digital Multi Meter)

Notice:

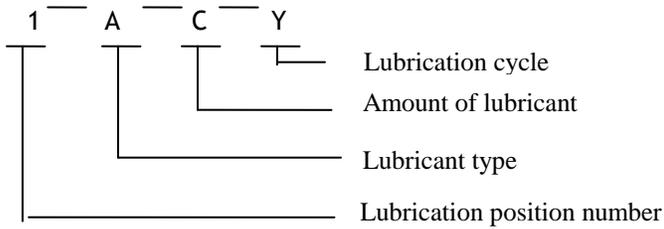
1. There is a 15-pin connector connects to the ADF motor board where there are three pins connected to the LED board as follows:  
Pin #14: 24VDC  
Pin #15: 24VGND  
Pin #2: Yellow LED  
Pin #1: Green LED

2. The turn-on method for each LED are listed below:  
The Yellow LED: Turn on the scanner.  
The Green LED: Turn on the scanner and wait for the scanner to get ready.  
The Red LED: Turn on the scanner and wait for the scanner to get ready. Then push the paper-in sensor on the ADF. Three seconds later the paper-in scanner will turn the ADF motor. Keep holding this sensor. A few minutes later the scanner will stop turning the ADF motor, and then the Jam LED will be on. Remember to keep holding the sensor.
3. As described above, if the corresponding LED remains off, follow the procedures below to locate the error.
  - i. Check the LED cable connection.
  - ii. Check the LED cable for any broken wires.
  - iii. Check the voltage level at the connector. The correct voltage levels for LED's ON/OFF are listed below:  
LED ON 2.4V  
LED OFF 5.0V
  - iv. If voltage levels are correct, replace the LED board.

## 4.6 Lubrication

### 4.6.1 Mechanical unit lubrication

This lubrication method in this manual is as follows:



1. Lubrication position number  
The position to be lubricated is indicated with a number.
2. Lubricant type  
A: Lubriplate 603-2  
B: LPS-1
3. Amount of lubricant  
C: Coat thinly, uniformly
4. Lubrication cycle  
6: Every 6 months  
Y: Every year

Table 4.3 shows the positions to be lubricated.

Lubrication Position	Lubricant Type	Lubricant Amount	Lubrication Cycle	Item	Ref. Drawing
1	B	C	Y	Sliding rod	Fig. 29
2	A	C	Y	Sliding guide	Fig. 29

Table 4.3

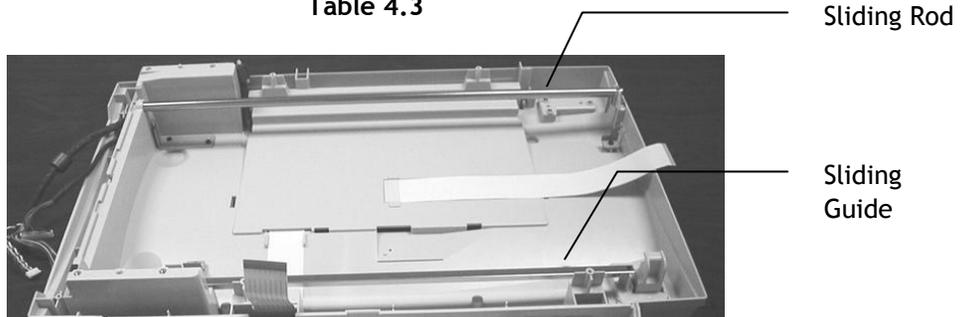
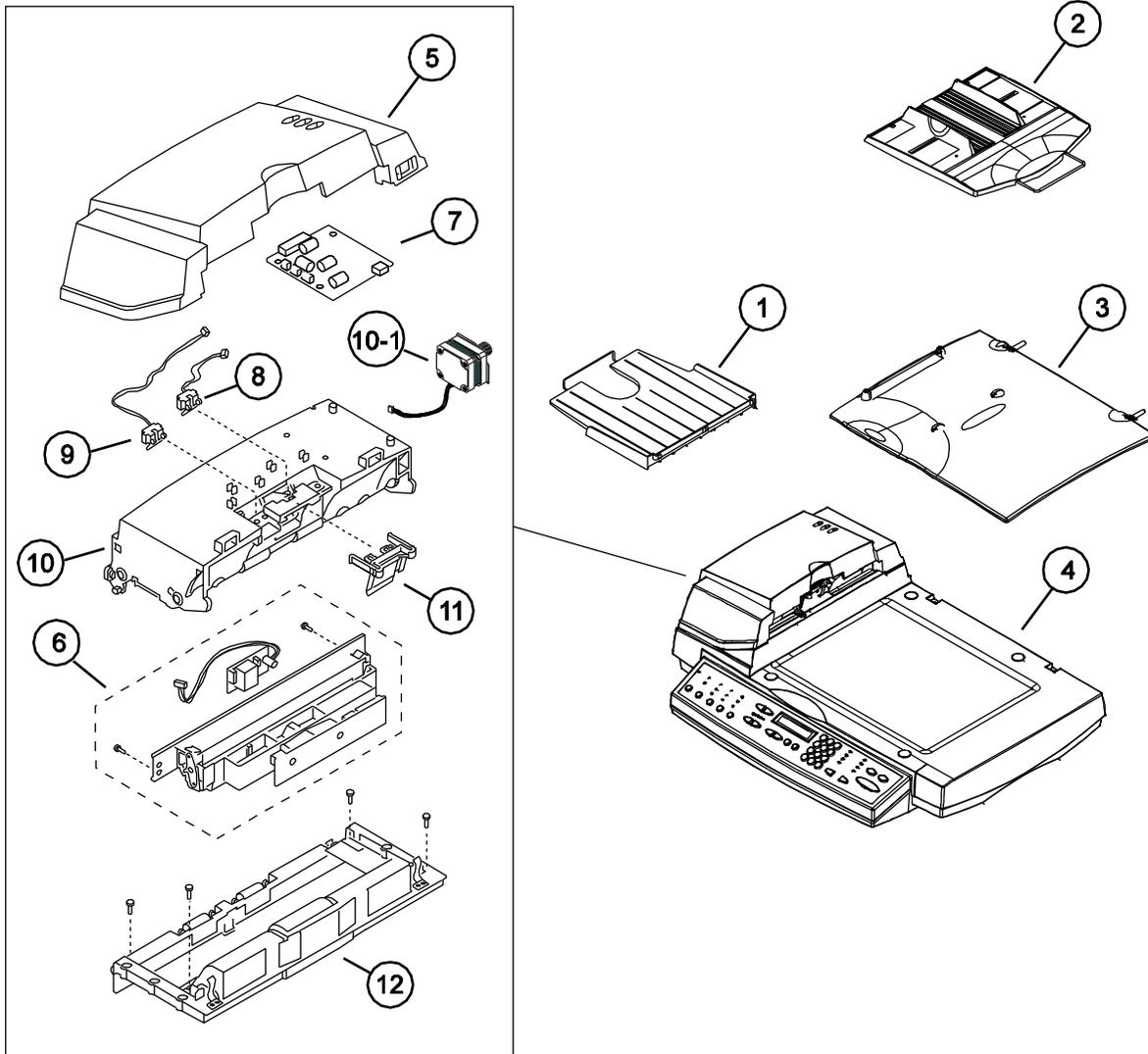
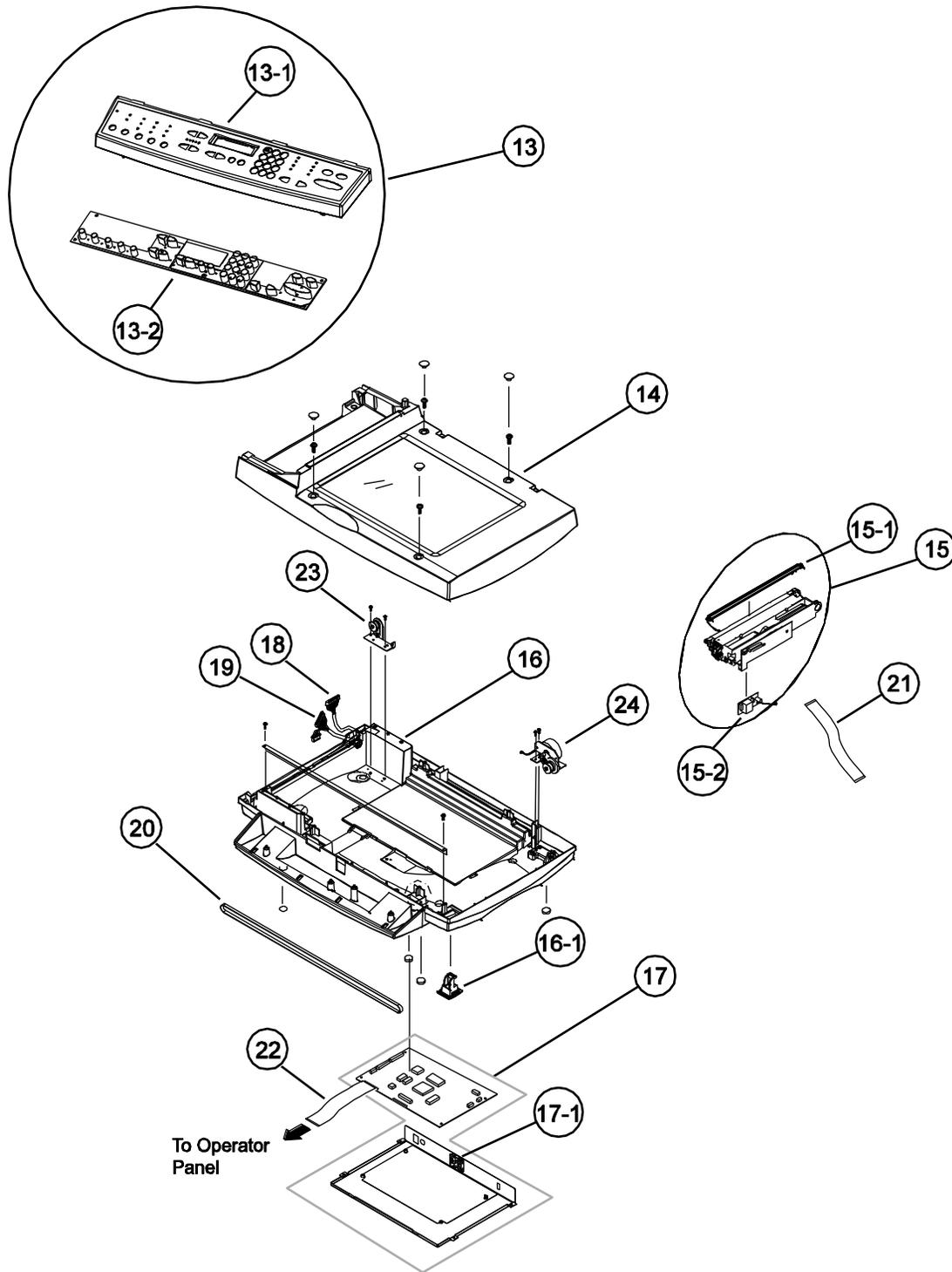


Figure 4.29 Positions to be lubricated

# 5. PARTS

## 5.1 Spare Parts and AFR







**Table 5.1 Spare Parts for 3200MFP**

Item	Avison P/N	LEXMARK FRU	ACCEPT ORDER QTY See note	DESCRIPTION
1	002-0905-0-SP	0056P0193	5	S-PARTS: ASS'Y, PAPER OUTPUT
2	002-1814-0-SP	0056P1732	5	S-PARTS: ASS'Y, PAPER GUIDE,
3	002-1137-0-SP	0056P0194	4	S-PARTS: ASS'Y, DOCUMENT COVER
4	003-5478-0-SP	0056P1731	1	S-PARTS: FLATBED MODULE,
5	002-0998-0-SP	0056P0019	3	S-PARTS: ADF COVER ASS'Y
6	002-1676-0-SP	0056P2387	6	S-PARTS: ASS'Y, ADF OPTICAL,
7	004-0685-0-SP	0056P2388	1	S-PARTS: PCBA, AB30
8	003-0255-0-SP	0056P0027	5	S-PARTS: ASS'Y, L/P SENSOR: ARM=24mm L=180mm
9	003-0926-0-SP	0056P2389	5	S-PARTS: ASS'Y, L/P, SENSOR: L=170
10	002-1675-0-SP	0056P2581	6	S-PARTS: ASS'Y, MAIN FRAME
10-1	002-1205-0-SP	0056P2390	1	S-PARTS: ASS'Y , MOTOR
11	002-1149-0-SP	0056P0079	4	S-PARTS: ASS'Y, PAD
12	002-1351-0-SP	0056P2391	6	S-PARTS: ASS'Y, ADF BASE
13	002-0987-0-SP	0056P0197	8	S-PARTS: CONTROL UNIT
13-1	002-0986-0-SP	0056P0198	8	S-PARTS: ASS'Y, CONTROL PANEL COVER
13-2	002-0999-0-SP	0056P0307	8	S-PARTS: PCBA, UI11
14	003-5265-0-SP	0056P2035	3	S-PARTS: UPPER HOUSING
15	002-1673-0-SP	0056P2392	6	S-PARTS: ASS'Y, CHASSIS, FLATBED
15-1	067-0034-0-SP	0056P1733	1	CCFL: 2.6x250x1, X=0.322, Y=0.344, TOA, FL-26250(CMW)-AV3, CKD, LONG LIFE/50000hrs
15-2	003-0937-0-SP	0056P2393	1	S-PARTS: INVERTER(CCFL-T), IBE20, 24Vdc,
16	003-5481-0-SP	0056P2394	3	S-PARTS: ASS'Y: BOTTOM:
16-1	051-0773-0-SP	0056P0312	1	S-PARTS: LOCK
17	002-1678-0-SP	0056P2395	5	S-PARTS: ASS'Y, MAIN BOARD
17-1	003-5544-0-SP	0056P2541	1	S-PARTS: ASS'Y, PCBA MOUNT WITH FAN (QUIET)
18	104-0186-0-SP	0056P0035	1	S-PARTS: ADF CABLE: 15P, P=2.0/2.0, #28, L=500mm(with core)
19	104-0211-0-SP	0056P2396	1	S-PARTS: ADF CCD CABLE: 6P+14P, P=2.0/2.0, #26/#28, L=580mm(with 2 EMI Core)
20	003-0361-0-SP	0056P2397	1	S-PARTS: ASS'Y, BELT, 555x4, t=1.25, MSL
21	104-0292-0-SP	0056P2398	1	S-PARTS: FFC CABLE: C TYPE (4/4/8/8), 32PIN , P=1.0mm , L=410mm
22	104-0150-0-SP	0056P2399	1	S-PARTS: FLEXIBLE FLAT CABLE, 32P, P=1.0, 300mm, DIFFER SIDE, AD TYPE,
23	002-0865-0-SP	0056P0033	1	S-PARTS: MOUNT PULLEY
24	002-1225-0-SP	0056P0034	1	S-PARTS: MOTOR MODULE
A	003-0297-0-SP	0056P0195	1	S-PARTS: POWER ADAPTOR, IEC-2pin, 24V/2A(60W), 100-240V
B	255-0535-0	N/A	1	LOCK/UNLOCK NOTICE CARD
C-1	072-0141-0	N/A	1	EPS FOAM, AF: 633x257x180
C-2	072-0142-0	N/A	1	EPS FOAM, B: 633x257x123
D	104-0363-0-SP	0056P1499	1	CABLE: IEEE 1394, L=180mm

Note: The minimum order quantity accepted by Avison.