

DM515

Service Manual

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1. INTRODUCTION

1.1 General Notes for Servicing

1.2 General Description

This manual is intended to be used by the maintenance engineers. It describes areas to be maintained, the detailed installation, the disassembly of optional ADF, 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 DM515 before serving the unit.

1.1 GENERAL NOTES FOR SERVICING

- (1) Before trying to disassemble the DM515, make sure the power supply cord of the DM515 is disconnected from the power outlet. Under any circumstance, do not remove or install the connectors on the DM515 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 DESCRIPTION

DM515 is a fantastic color USB scanner with an Automatic Document Feeder. The digital solution makes your reproduction exceedingly clear.

Without further leaning, you can get a scan image and link the image to a variety of applications, for example, the image-editing software, the OCR(Optical character recognition) software, to make your jobs done.

2. SPECIFICATION

2.1 Basic Specification

Product Name:	DM515
Type:	ADF/Flatbed scanner
Resolution:	up to 600 x 1200 dpi (1% increments)
Color Depth:	48-bit single pass color (R, G, B)
Image Type:	Black and White Gray Color
ADF Scan Speed: (at 200dpi B&W A4 size)	20 pages per minute
Scan Area:	Flatbed: up to European A4 (8.5" x 11.69") ADF: minimum: 4.5" x 5.5" ADF: maximum: up to legal size (8.5" x 14")
Paper Size:	A4, A5, Letter, Legal, B5, Business card 3.5" x 2.0" (Flatbed Mode)
Paper Thickness:	16 – 28 lbs/0.002" ~ 0.006"
Paper Input (ADF):	Up to 50 sheets
Physical Dimension:	Width: 445 mm Depth: 332 mm Height: 179 mm
Weight:	5.5kgs
Interface:	USB 2.0
Power Requirements	24Vdc, 1.25A
Power Consumption:	≤ 30 Watts

3. UNPACKING, INSTALLATION, AND TRANSPORTATION

- | |
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| <ul style="list-style-type: none">3.1 Precautions of Installation3.2 Unlocking the product3.3 Transportation |
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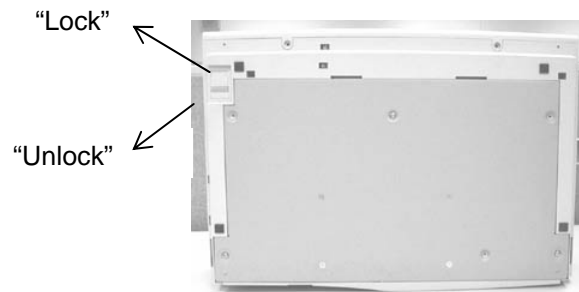
3.1 PRECAUTIONS OF INSTALLATION

Pay attention to the following matters before unpacking and installation.

- Do not install in a place where vibration may occur.
- Keep the DM515 out of direct sunlight. Do not install near a heat source.
- Do not place the DM515 around materials which 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 DM515 or the document holding pad with a clip or staple.
- 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 DM515 on a level surface.

3.2 UNLOCKING THE PRODUCT

Before you use DM515, be sure to unlock it by moving the lock switch under the DM515 to the "Unlock" position (See the following figure). The lock switch is designed to protect the scanning head in case of any damage during shipment.



Unlock DM515

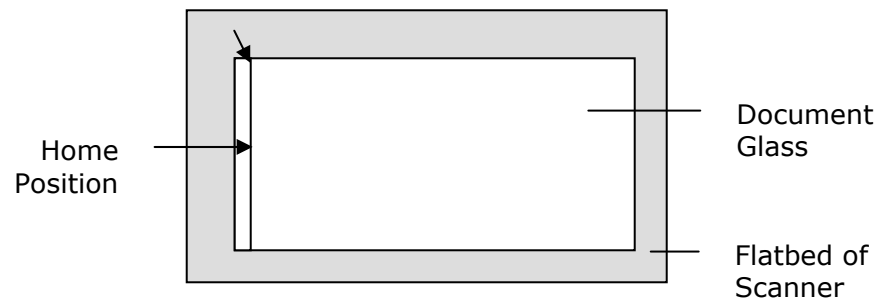
Note: If you need to transport DM515, be sure to first move the lock switch to the "Lock" position to prevent any damage during transportation.

3.3 TRANSPORTATION

To move the DM515 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 DM515.

If the scanning head is located at a place other than the home position, turn the DM515 on to return the scanning head to the home position. Before making sure the scanning head is returned to the home position, turn the power supply off.



- (2) Move the lock switch to the "lock" position.
- (3) Remove the power cable.
- (4) Put the DM515 in the packing case with the packing material.

4. THEORY OF OPERATION

- 4.1 Introduction
- 4.2 Main Control Unit

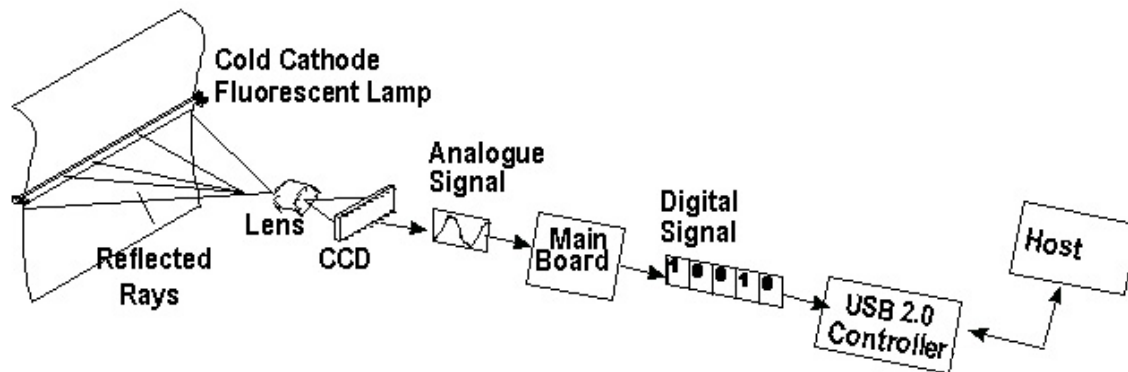


Figure 4.1 Theory of Operation

4.1 INTRODUCTION

The reflected rays of your original as shown in the above Figure 4.1 pass through the lens and create an image on the CCD (Charged 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 main board, where the signals are turned into digital signals. These digital signals flows to the image processor to store into a host computer acceptable format then goes to USB2.0 controller to transfer to a host computer.

4.2 MAIN CONTROL UNIT

4.2.1 SYSTEM DIAGRAM

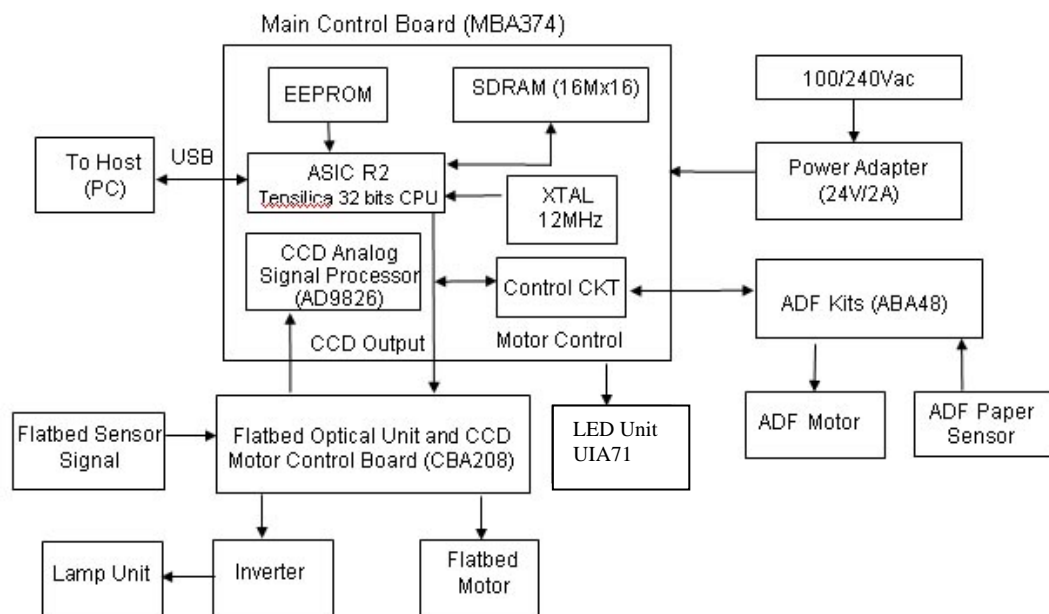


Figure 4.2 System block diagram

4.2.2 MAIN CONTROL CIRCUIT

This scanner is controlled by the tensilica 32 bits CPU. The CPU is configured with a 512-KB external ROM program area, a 32-MB external SDRAM work area, 2 timer / counters, 3 external interrupts.

Address Maps:

- ROM program area:

0000	512KB Program
7FFFF	

- External SDRAM working area:

00	32MB
1FFFFFF	Internal Registers

-

4.2.3 VIDEO CIRCUIT:

The video circuit of this scanner includes: 1. CCD driving circuit, 2. 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.

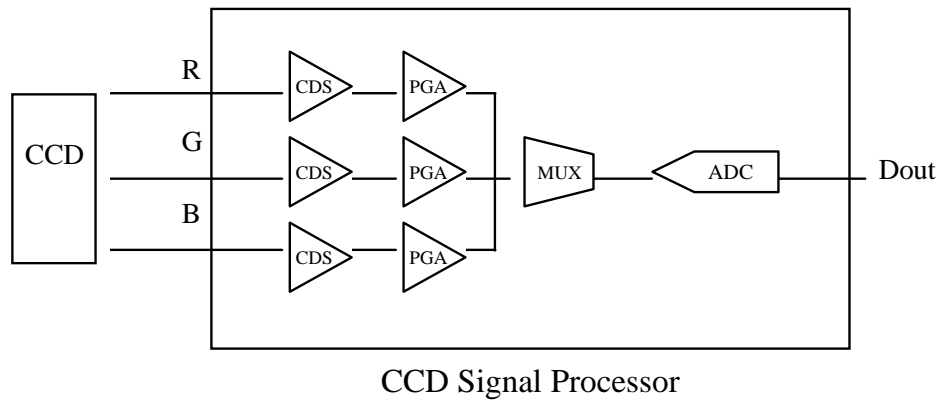
Signals for CCD:

Pin Assignment for CCD cable

Pin No.	Name	Function
1	INV_V	Inverter Power Supply
2	INV_V	Inverter Power Supply
3	MGND	Motor Ground
4	INVGND	Inverter Ground
5	24VM	Motor Driver Power Supply
6	24VM	Motor Driver Power Supply
7	3.3V	Digital 3.3V Power Supply
8	M_Vref2	Motor Driver Mixed Decay Setting
9	M_Vref1	Motor Driver Mixed Decay Setting
10	/Reset	Motor Driver Logic Input
11	/MTR_Sleep1	Motor Driver Logic Input
12	Step	Motor Driver Logic Input
13	Dir	Motor Driver Logic Input
14	MS2	Motor Driver Logic Input
15	MS1	Motor Driver Logic Input
16	12VC	CCD Power Supply
17	VOB	CCD Blue Channel Output Signal
18	AGND	Analog Ground
19	VOG	CCD Green Channel Output Signal
20	AGND	Analog Ground
21	VOR	CCD Red Channel Output Signal
22	AGND	Analog Ground

Pin No.	Name	Function
23	DGND	Digital Ground
24	5VD	Digital 5V Power Supply
25	RS	CCD RGB Channel Reset Gate
26	CP	CCD RGB Channel Clamp Gate
27	NC	No Connection
28	PH2A	CCD Clock Phase
29	PH1A	CCD Clock Phase
30	SH	CCD RGB Channel Shift Gate
31	HMSEN	Home Sensor Signal
32	DGND	Digital Ground

2. CCD signal processing circuit



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 bits analog to digital converter (ADC) quantizes the analog signal.

4.2.4 LED & BUTTON MODULE CIRCUIT

The circuit includes one bi-color LED, three buttons, and one 7-segment LED displayer.

Pin assignment of LED and Button module

Pin No.	Name	Function
1	5VD	Power Supply
2	GND	Ground
3	FUNC_BUT	Function Button
4	SEND_BUT	Send Button
5	SCAN_BUT	Scan Button
6	LEDG	LED Green
7	LEDR	LED Red
8	x	x
9	x	x
10	x	x
11	x	x
12	x	x
13	x	x
14	x	x
15	x	x
16	x	x

4.2.5 SENSOR INPUT

The sensor input includes home position sensor.

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.

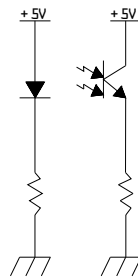
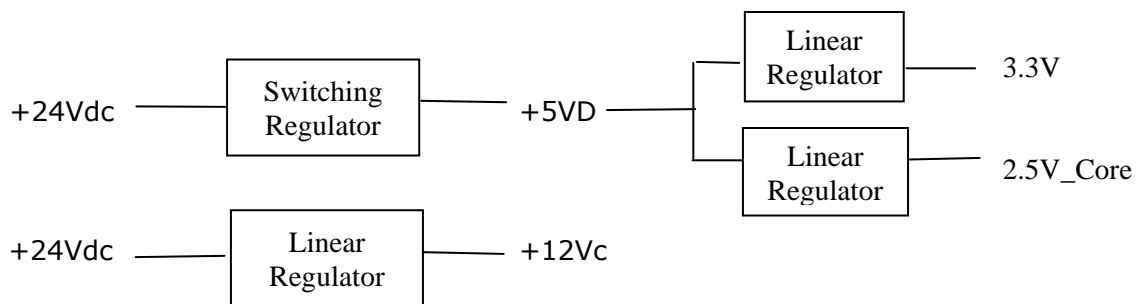


Figure 4.3 Home position sensor

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

4.2.6 SUB POWER SUPPLY CIRCUIT

The sub power supply circuit is provided for the internal analog circuit. Input is 24V and output is 5VD and +12VC. The circuit configuration is shown below:



The sub power supply is used for: CCD, A/D, and logic circuits.

4.2.7 POWER SUPPLY

In this system, there is only one type of power supply. Please see Table 4.1 for details.

Table 4.1 Power Adapter

Type Characteristic	Desk
Input voltage range	100-240V
Input current (max.)	0.95A (rms)
Input frequency	50-60Hz
Max. in-rush current(@230Vac, cold start)	70A
Output voltage	+24Vdc
Min. load current	1A
Max. load current	2A
Total Power	48W

5. PROBLEM SOLVING

5.1 Diagnostics 5.2 Troubleshooting

This chapter supplies two paths for dealing with operational problems. The first relies on the scanner'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 5.2 **Troubleshooting**.

5.1 DIAGNOSTICS

The scanner has internal diagnostics to help you determine the cause of operational problems. Some of the diagnostics function with the scanner online, while others are part of a separate offline diagnostics feature.

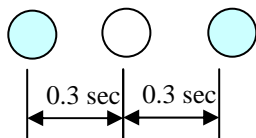
5.1.1 ONLINE DIAGNOSTICS

Determine operational problems by observing the display panel and check the LED. With the scanner online and operating normally, the LED is on. Other LED indications is described in the following table.

Double-colored LED – Green Light	Double-colored LED – Red Light	7-segment SDD	State
Short Blinking	Off	Circle Blinking	Power on diagnostics
Long Blinking	Off	Off	Sleeping Mode
Off	Blinking	Refer to table 5-2	Group Error

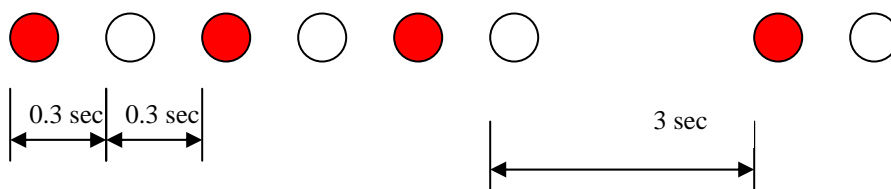
Table 5.1 Online diagnostics

When the machine starts, the Blue LED blinks. The frequency is shown below:

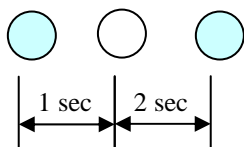


If there is a problem, the red LED blinks. The LED blinks in turn to indicate various error codes, which one can use to debug the machine. The 7-segment LEDs also indicate error codes, as shown below:

For example: Error code 3
The Red LED indicates:



The Blue LED blinks longer during the sleeping mode.



5.1.2 OFFLINE DIAGNOSTICS

To run the offline diagnostics, and turn the power back on. When you first turn the scanner back on, the LED light will blink, indicating that the diagnostics are in progress. Observe the front panel LED closely. In a short time, the LED indicates the results of the offline diagnostics as explained in the table below.

Double-colored LED – Blue Light	Double-colored LED – Red Light	Error indication
OFF	1 blinks	DRAM FAILURE. Refer to Table 5.8 (Replace the M/B).
OFF	2 blinks	NVRAM RD/WR failure. Refer to Table 5.8 (Replace the M/B).
OFF	3 blinks	AFE Test error. Refer to Table 5.8 (Replace the M/B).
OFF	4 blinks	USB Test error. Refer to Table 5.8 (Replace the M/B).
OFF	5 blinks	Group 2 error(Home Sensor Test error)
OFF	6 blinks	Light Check failure. Refer to Table 5.5 (Replace the CB243).
OFF	8 blinks	Group 3 error (Paper Jam Error)
OFF	9 blinks	Chassis locked. Refer to Table 5.4 (Replace the PCBA).

Table 5.2 Offline diagnostics results

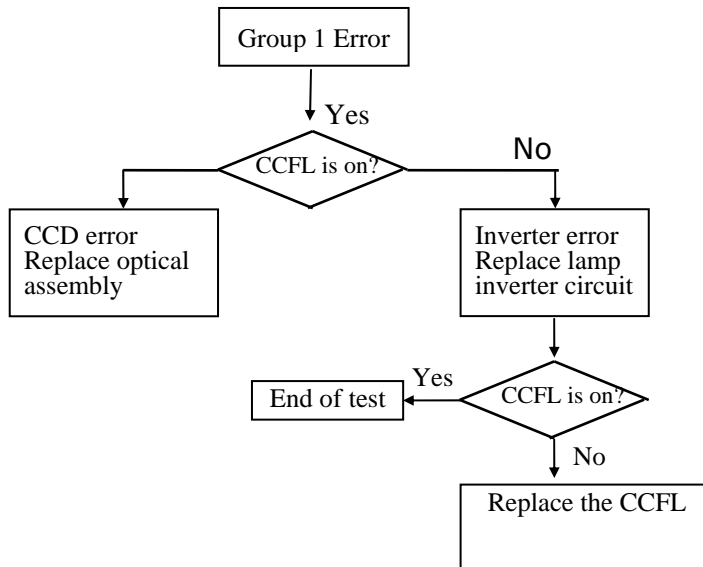
To return the scanner to online operation, turn off the scanner, turn the scanner back on.

5.1.3 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 6 for parts replacement.

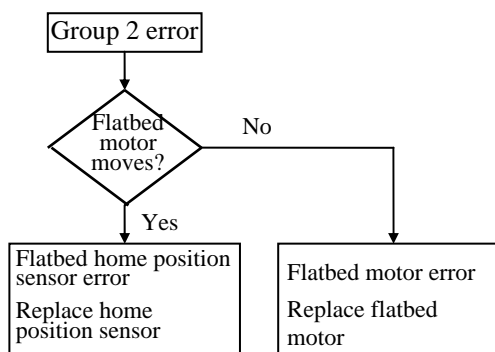
5.1.3.1 Group 1 error flowchart (CCFL assembly)

This flowchart applies when the Check LED blinks 6 times the same while, with the scanner offline.



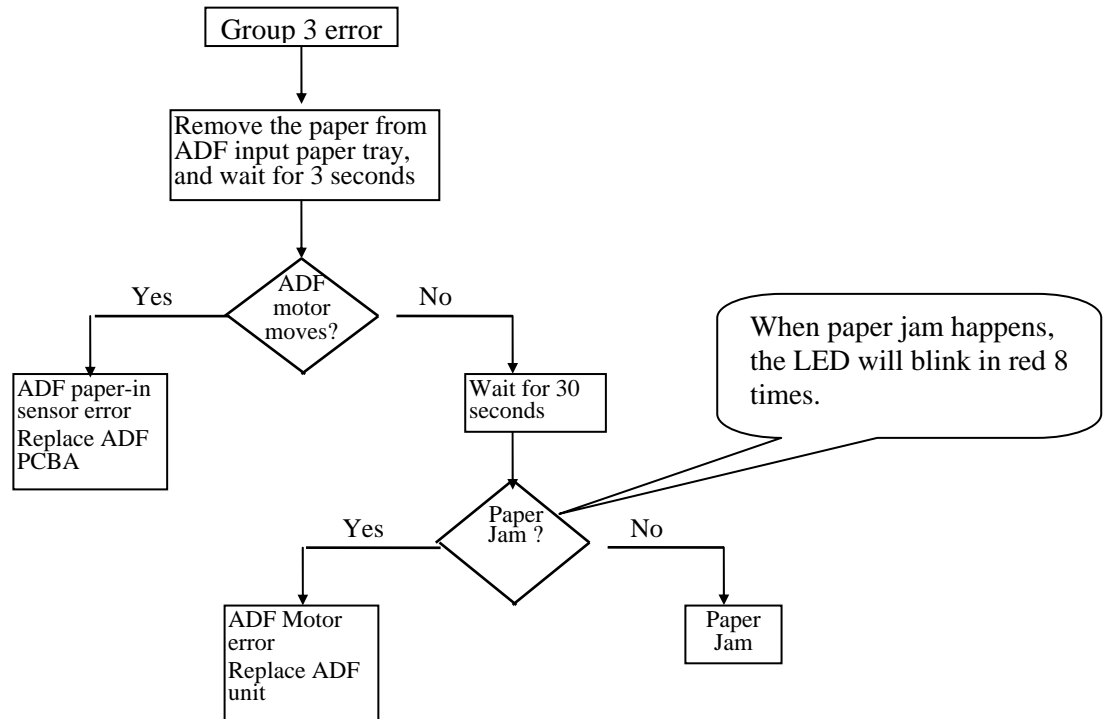
5.1.3.2 Group 2 error flowchart (Flatbed motor)

This flowchart applies when the offline diagnostics error indication is the simultaneous blinking 5 times of the Check LED.



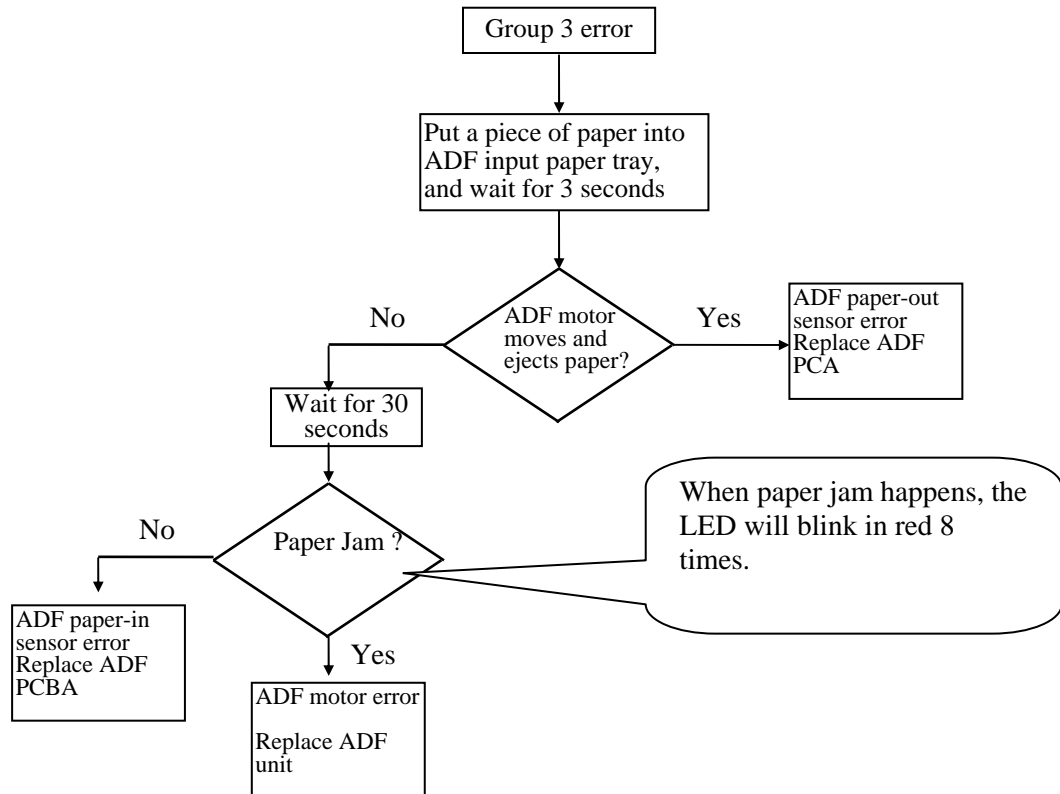
5.1.3.3 Group 3 error flowchart (paper in ADF paper tray)

This flowchart applies when the Check LED blinks 8 times the same while with the scanner online, and there is paper in the ADF paper tray.



5.1.3.4 Group 3 error flowchart (no paper in ADF paper tray)

This flowchart applies when the Check LED blinks 8 times the same while with the scanner online, and there is no paper in the ADF paper tray.



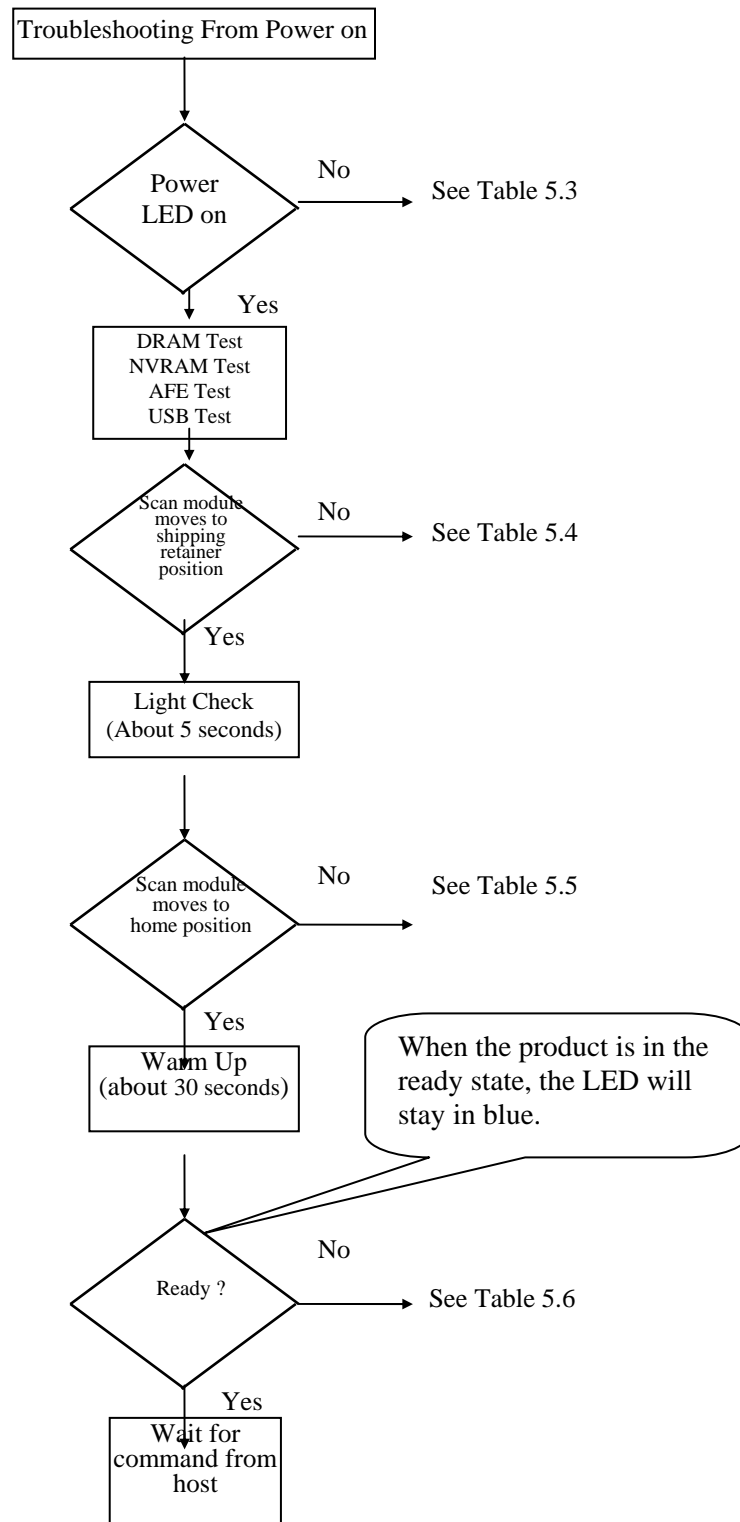
5.2 TROUBLESHOOTING

Refer first to the applicable troubleshooting flowchart in the following three sections. The flowcharts refer you to the appropriate table for detailed troubleshooting.

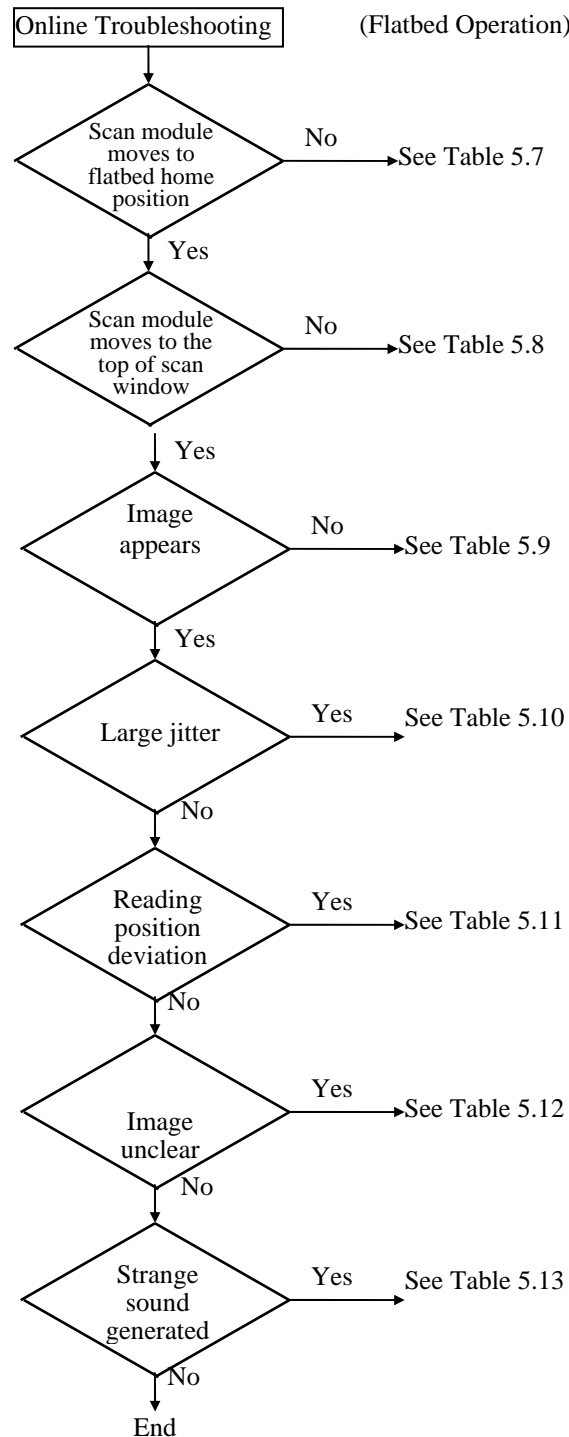
5.2.1 FLOWCHARTS

This section provides the following troubleshooting flowcharts:

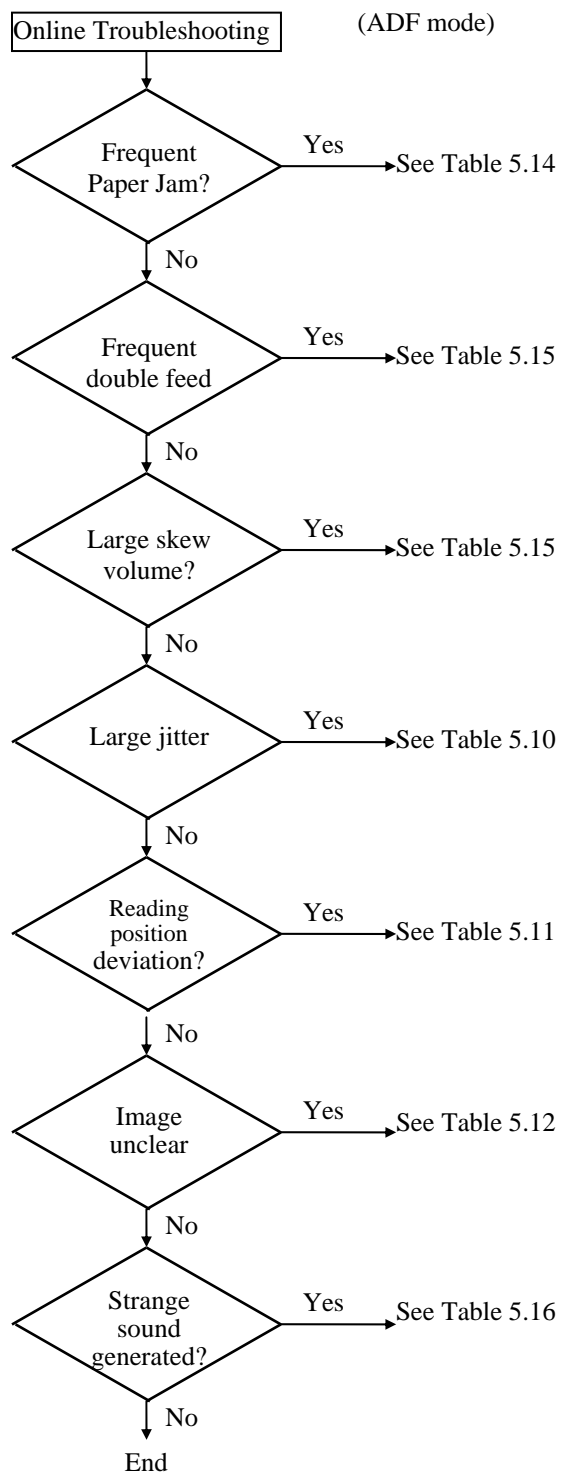
- Troubleshooting from power on to scanner ready
- Online troubleshooting (flatbed operation)
- Online troubleshooting (ADF operation)
- Offline troubleshooting (flatbed operation)

5.2.1.1 Troubleshooting flowchart: power on to scanner ready.

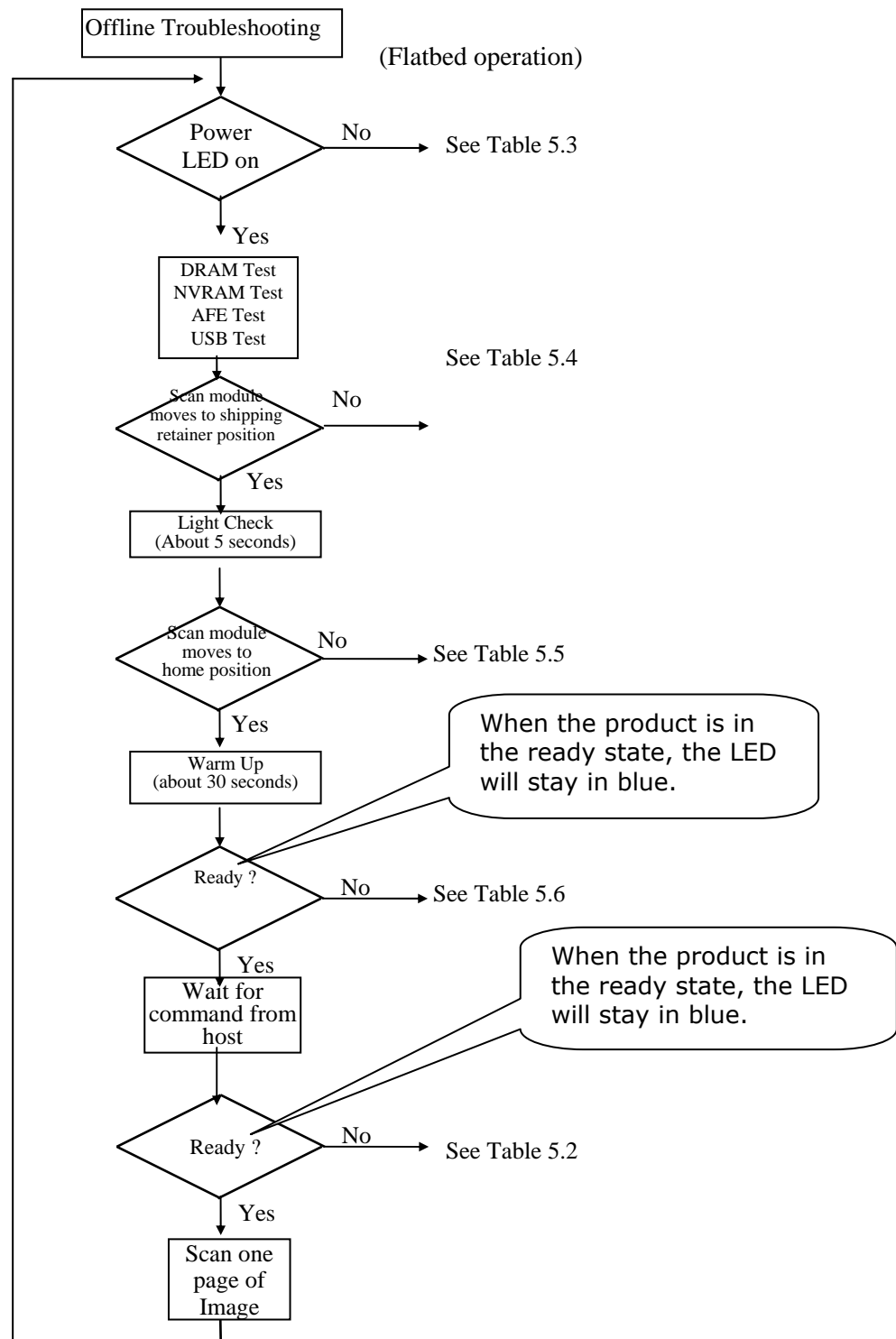
5.2.1.2 Troubleshooting flowchart: online flatbed operation



5.2.1.3 Troubleshooting flowchart: online ADF operation



5.2.1.4 Troubleshooting flowchart: Offline flatbed operation



5.2.2 TABLES

The tables in this section provide detailed troubleshooting information.

5.2.2.1 *The Power LED does not go on*

Cause	Relevant Unit	Check Method	Maintenance Method
Unplugged from outlet	None	Visual check	Insert the AC plug into the outlet.
AC power unplugged at unit	None	Visual check	Insert the AC cable into unit.
Power switch is OFF	None	Visual check	Turn the power switch on.
AC voltage failure	None	AC outlet voltage check	None
Power unit AC input connector disconnected	None	Visual check	Connect the connector.
Power switch connector disconnected	None	Visual check	Connect the connector.
Power unit-main PCBA connection failure	None	Visual check	Connect the connector.
Power unit output voltage failure	Power unit	Output voltage (+15V) check	Replace the power unit
PCBA Failure	main control PCBA LED board	Tester check (+24V, GND)	Remove the cause or replace the PCBA.
LED board-main PCBA connection failure	None	Visual check	Connect the connector

Table 5.3

5.2.2.2 Scan module does not move to shipping retainer position

Cause	Relevant Unit	Check Method	Maintenance Method
Sensor board-main control PCBA connection failure	None	Visual check	Connect the connector.
Home position sensor board-main control PCBA cable failure.	Sensor board-main control PCBA cable	Tester or visual check	Replace the home position cable.
Home position sensor board failure	Home position sensor PCBA	Tester check	Replace the PCBA
Motor-main control PCBA connection failure	None	Visual check	Connect the connector.
Motor failure	Motor	Visual check	Replace the motor.

Table 5.4

5.2.2.3 Scan module does not move to the home position

Cause	Relevant Unit	Check Method	Maintenance Method
Home position sensor board-main control PCBA connection failure	None	Visual check	Connect the connector.
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.
Home position sensor board failure	Sensor board	Tester check	Replace the PCBA.
Lamp failure	Lamp	Visual check	Replace the lamp.
Inverter failure	Inverter	Visual check	Replace the inverter.
CCD board-main control board connection failure	None	Visual check	Connect the connector
CCD board fails	CCD board	Tester check	Replace the optical unit

Table 5.5

5.2.2.4 Ready and Power LED does not light on

Cause	Relevant Unit	Check Method	Maintenance Method
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.
Home position sensor board failure	Sensor board	Tester check	Replace the PCBA.

Table 5.6**5.2.2.5 Scan module does not move to the flatbed position**

Cause	Relevant Unit	Check Method	Maintenance Method
Motor-main control PCBA connection failure	None	Visual check	Connect the connector.
Motor failure	Motor	Visual check	Replace the motor module.

Table 5.7

5.2.2.6 Scan module does not move to the top of the scan window

Cause	Relevant Unit	Check Method	Maintenance Method
CCD board-main control board connection failure	None	Visual check	Connect the connector.
CCD board fails	CCD Board	Visual check	Replace the optical unit.

Table 5.8**5.2.2.7 Image does not appear**

Cause	Relevant Unit	Check Method	Maintenance Method
CCD board-main control board connection failure	None	Visual check	Connect the connector.
CCD board fails.	CCD Board	Visual check	Replace the optical unit.

Table 5.9

5.2.2.8 *Large jitter*

Cause	Relevant Unit	Check Method	Maintenance Method
Motor-main control PCBA connection failure	None	Visual check	Connect the connector.
Motor failure	Motor	Visual check	Replace the motor.

Table 5.10

5.2.2.9 *Reading position deviation*

Cause	Relevant Unit	Check Method	Maintenance Method
Home position sensor board-main control PCBA cable failure	None	Visual check	Connect the connector
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
Home position sensor board failure	Sensor board	Tester check	Replace the PCBA.

Table 5.11

5.2.2.10 Image unclear

Cause	Relevant Unit	Check Method	Maintenance Method
Lamp too dark	Lamp	Visual check	Replace with a new lamp.
Dirt on calibration reference plate	Calibration reference plate	Visual check	Clean the flatbed glass with isopropyl alcohol.
Dirt on calibration reference plate	Calibration reference plate	Visual check	Clean the calibration reference plate with isopropyl alcohol.
Dirt on the mirrors	Mirrors	Visual check	Clean the mirrors with an air compressor. If the problem still exists, replace the optical unit.
Dirt on the lens	Lens	Visual check	Clean the mirrors with an air compressor. If the problem still exists, replace the optical unit.

Table 5.12

5.2.2.11 Strange sound generated (flatbed)

Cause	Relevant Unit	Check Method	Maintenance Method
Motor unit failure	Motor unit	Replace the motor unit.	Replace the motor unit.
Main control PCBA failure	Main control PCBA	Replace the main control PCBA.	Replace the main control PCBA.
Scanning module failure	Scanning module	Check if scanning module is loose.	Replace the optical unit.
Dirt on rail	None	Visual check	Clean the rail with isopropyl alcohol
Gears not smooth	Gears	Gears	Clean the gears with oil or change the gears

Table 5.13

5.2.2.12 Frequent paper jam

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

Table 5.14

5.2.2.13 Frequent double feed and skew

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

Table 5.15

5.2.2.14 Strange sound generated (ADF)

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

Table 5.16

6. DISASSEMBLY

- 6.1 Service Tools**
- 6.2 Lubricants**
- 6.3 Procedure for Disassembly and Reassembly**

6.1 SERVICE TOOLS

The following table describes the maintenance tools necessary for the maintenance of this equipment.

No	Name	Description
1	Minus 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

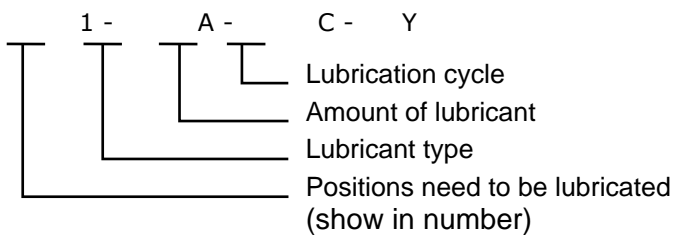
Maintenance tools

6.2 LUBRICANTS

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

6.2.1 MECHANICAL UNIT LUBRICATION

This lubrication method:

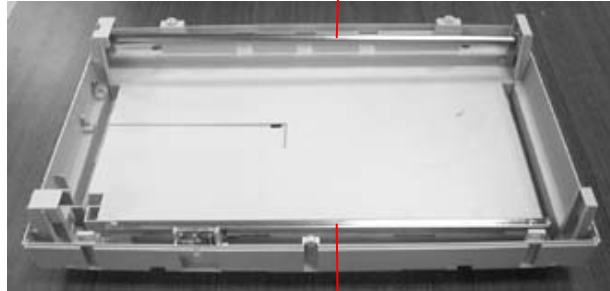


1. Positions need to be lubricated:
The positions need to be lubricated is indicated in numbers.
2. Lubricant type:
A: Shell Alvania Grease No. 2
B: Shell Terrace Oil 46
3. Amount of lubricant:
C: Coat thinly uniformly
4. Lubrication cycle:
Y: Every year

The following table 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 frame

2 Sliding Rod



1 Sliding Guide

Lubricated Position

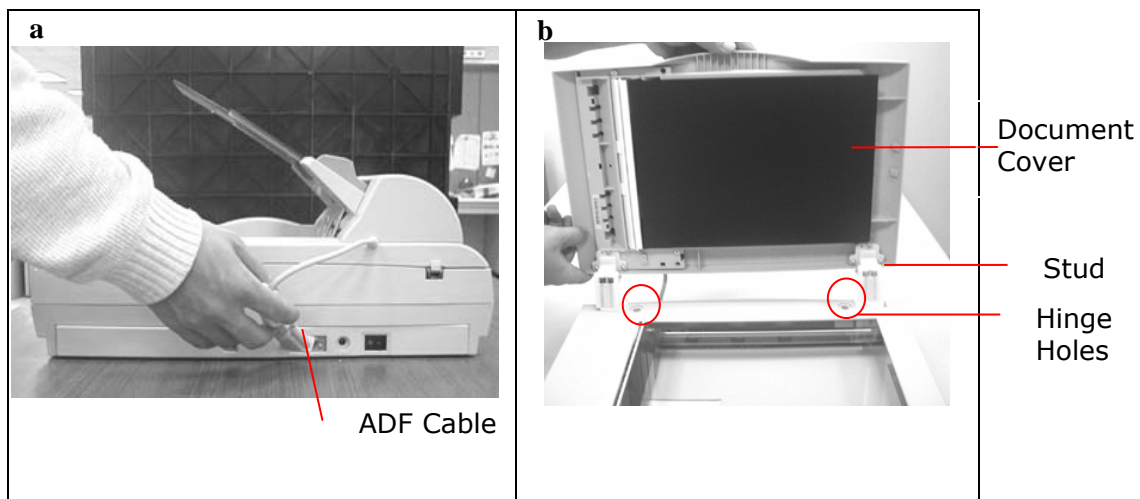
6.3 PROCEDURE FOR DISASSEMBLY AND REASSEMBLY

6.3.1 NOTES ON DISASSEMBLY

- (1) Clean the disassembly and assembly location.
- (2) Disconnect the power cable and remove the AC 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.

6.3.2 DOCUMENT COVER REMOVAL

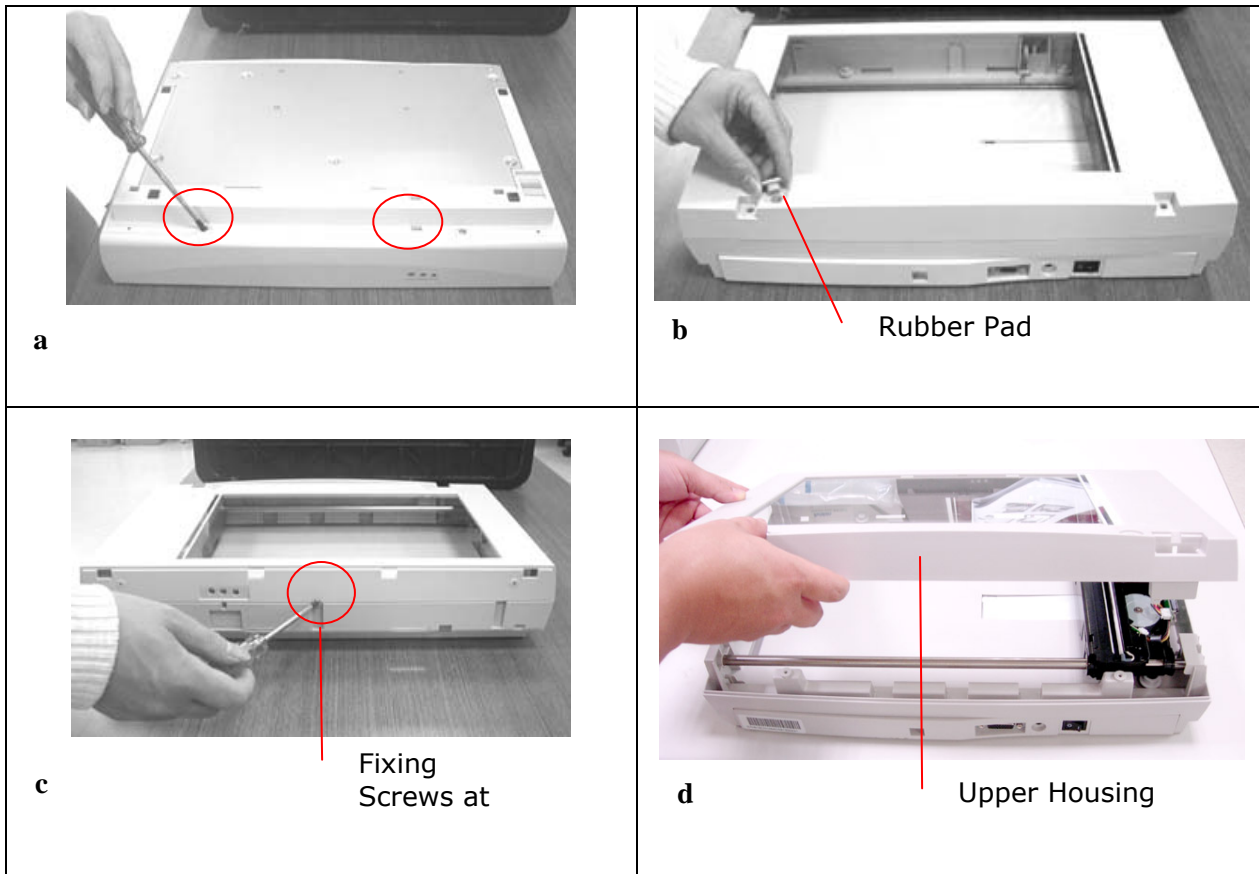
As shown in the figure below, unplug the ADF cable, and then lift the document cover to remove the studs from the hinge holes. The studs are loosely attached to the hinge holes in the purpose to cover your original when it is a few inches high.



Document Cover Removal

6.3.3 UPPER HOUSING REMOVAL

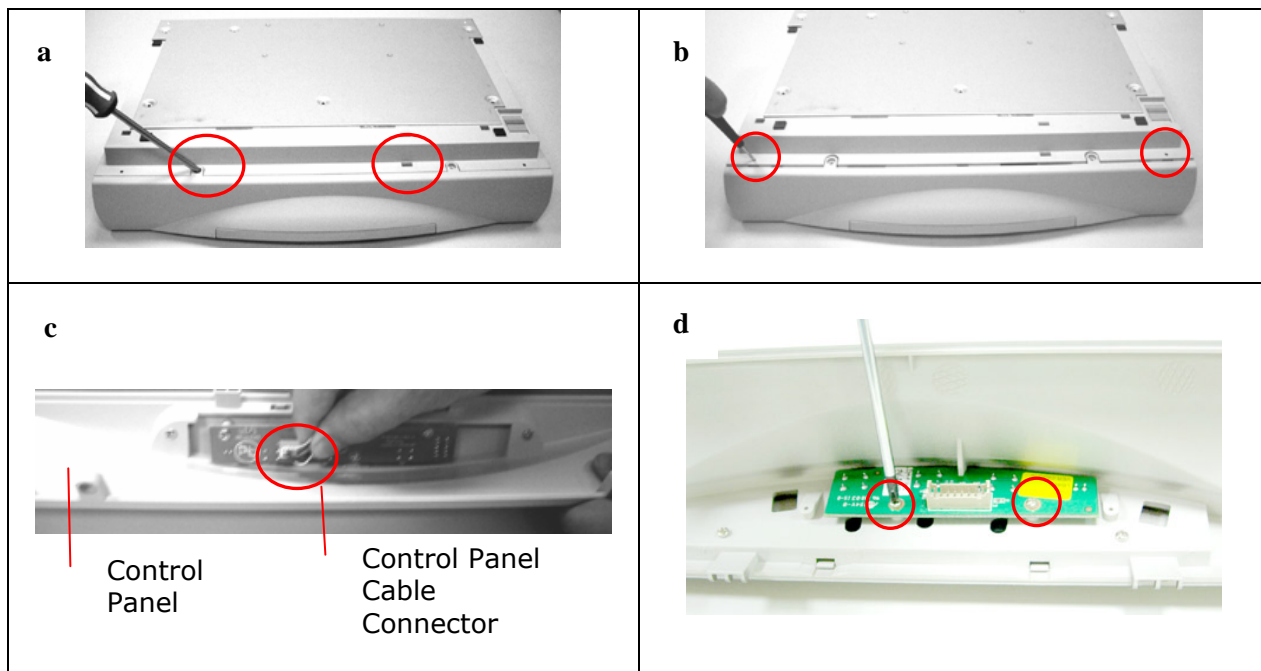
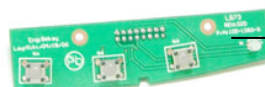
- (1) Remove the document cover as described in section 6.3.2.
- (2) Turn the machine over and loosen the fixing screws with a screwdriver as illustrated.
- (3) Turn the machine to its normal position and remove the rubber pads (x 2 pcs) as illustrated.
- (4) Remove the fixing screw at the front as illustrated.
- (5) Remove the upper housing by lifting it gently.



Upper Housing Removal

6.3.4 CONTROL PANEL PCBA REMOVAL

- (1) Remove the document cover as described in section 6.3.3.
- (2) Turn the machine over as illustrated and loosen the fixing screws (x 4 pcs) at the front of the scanner.
- (3) Loosen the control panel and unplug the cable as illustrated.
- (4) Loosen the fixing screw on the PCBA of the control panel.
- (5) Remove the board of the control panel by lifting it gently.

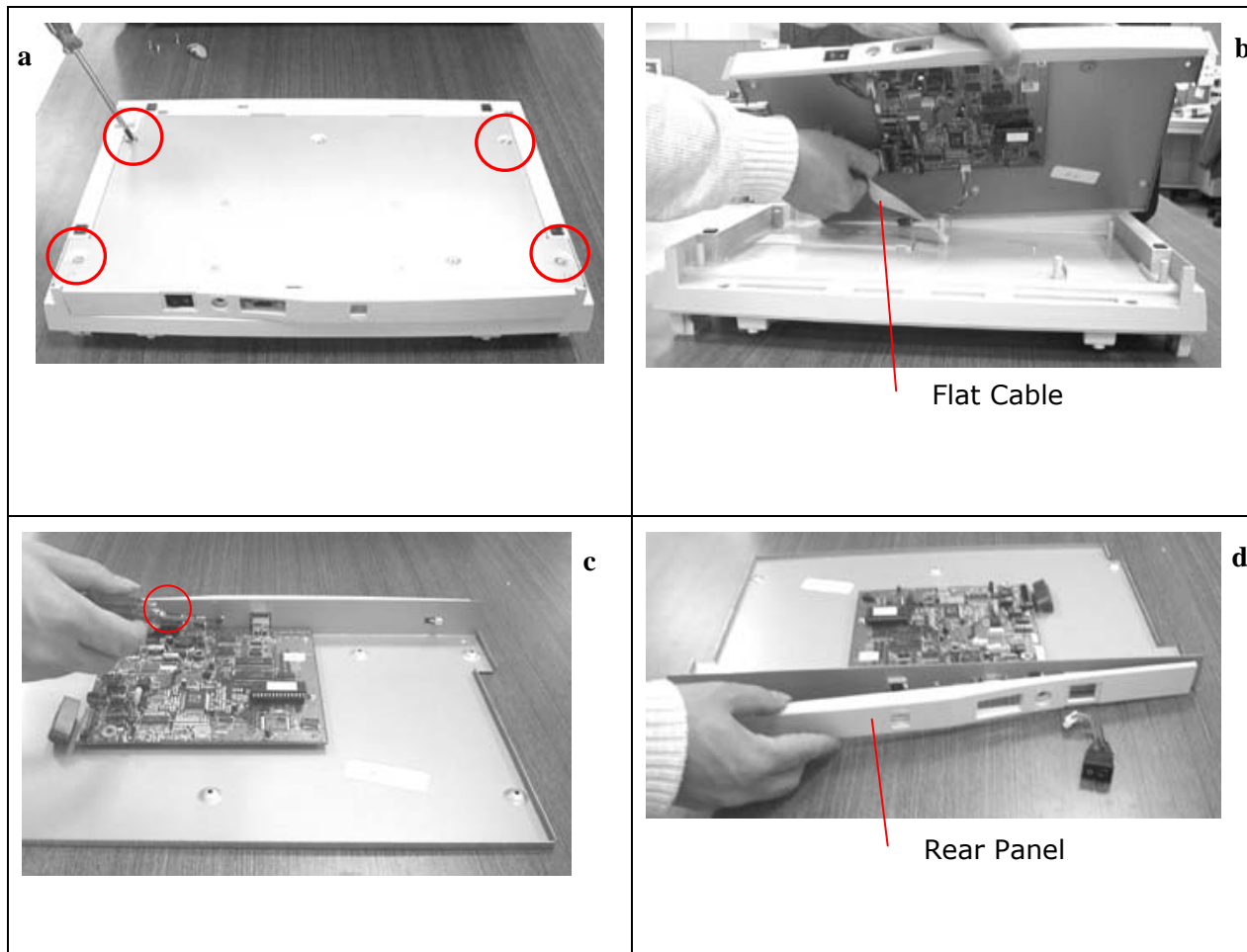
**e**

PCBA of
Control Panel

Control Panel PCBA Removal

6.3.5 MAIN CONTROL BOARD REMOVAL

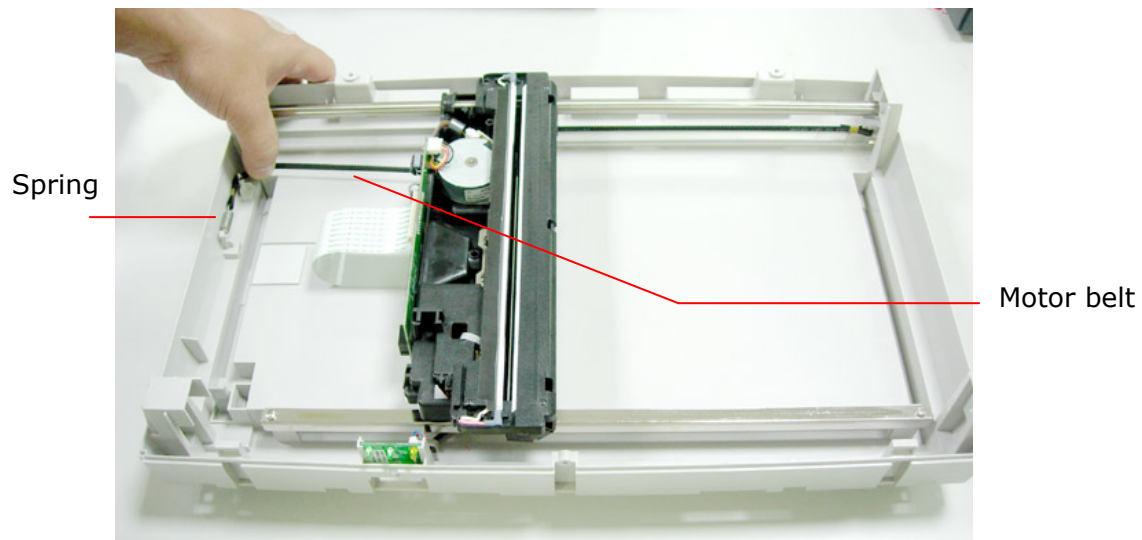
- (1) Turn the machine over and loosen the fixing screws (x 4 pcs) of the metal cover as shown in the figure below.
- (2) Lift the metal cover and disconnect the flat cable as illustrated.
- (3) Loosen the screws fixed on the rear panel, and remove the rear panel.



Main Control PCBA Removal

6.3.6 MOTOR BELT REMOVAL

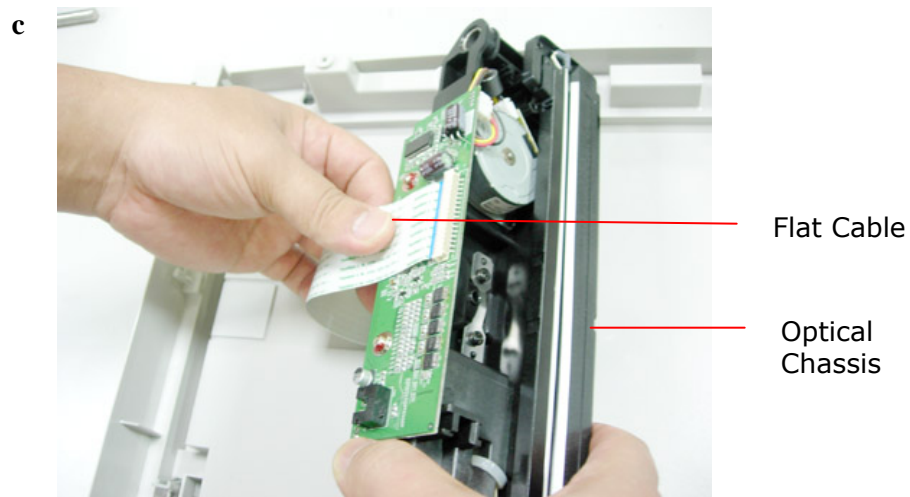
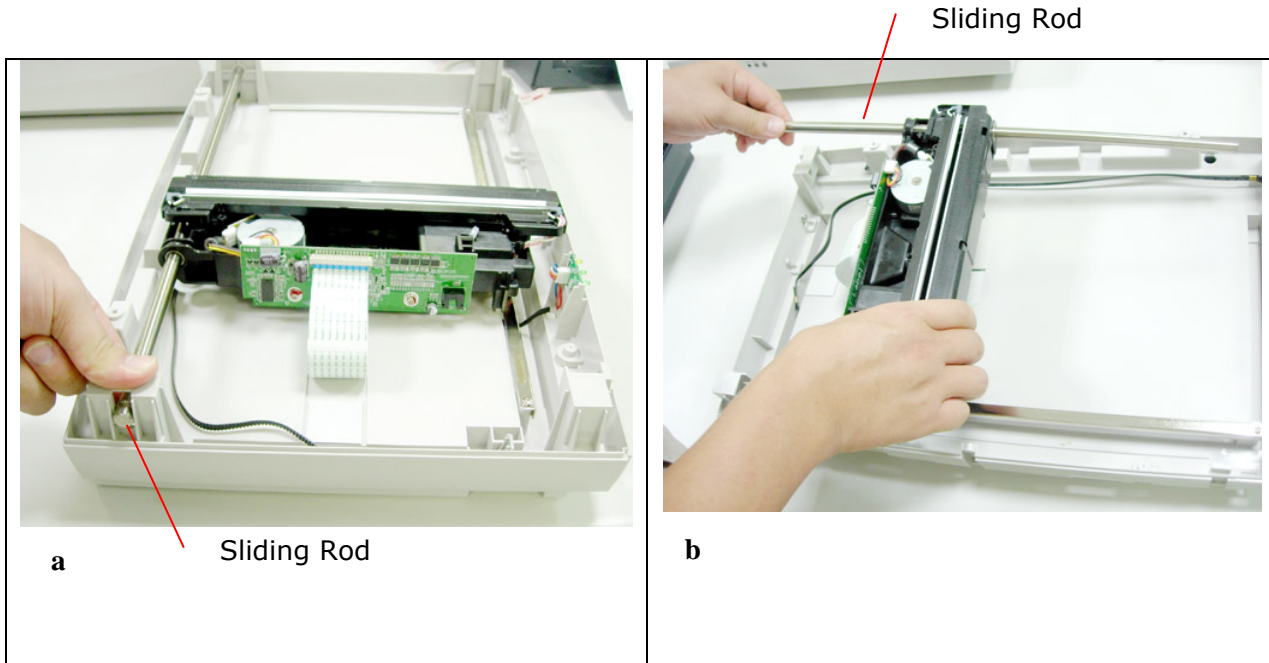
- (1) Remove upper housing and main control PCBA as described in section 6.3.3 and 6.3.5.
- (2) Remove the motor belt by detaching the belt spring.



Belt Removal

6.3.7 OPTICAL CHASSIS REMOVAL

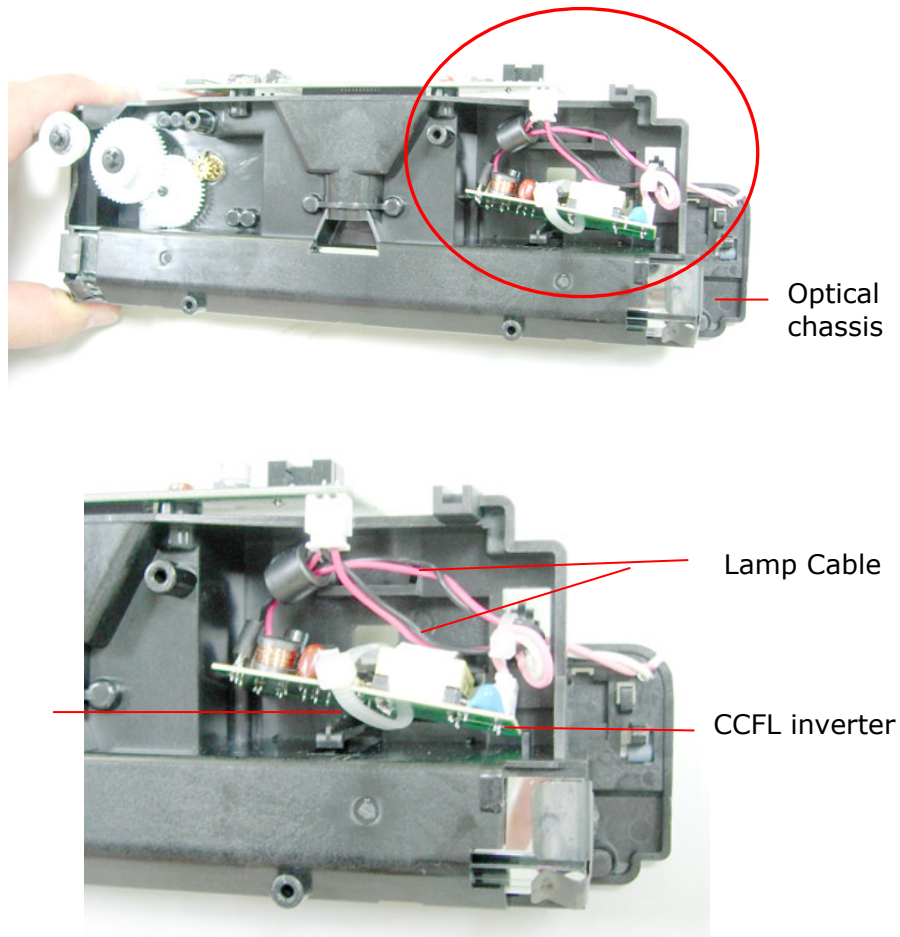
- (1) Remove upper housing as described in section 6.3.3.
- (2) Lift the end of the sliding rod and pull it out from the hole of the optical chassis.
- (3) Disconnect the flat cable of the optical chassis.



Optical Chassis Removal

6.3.8 CCFL INVERTER PCBA REMOVAL

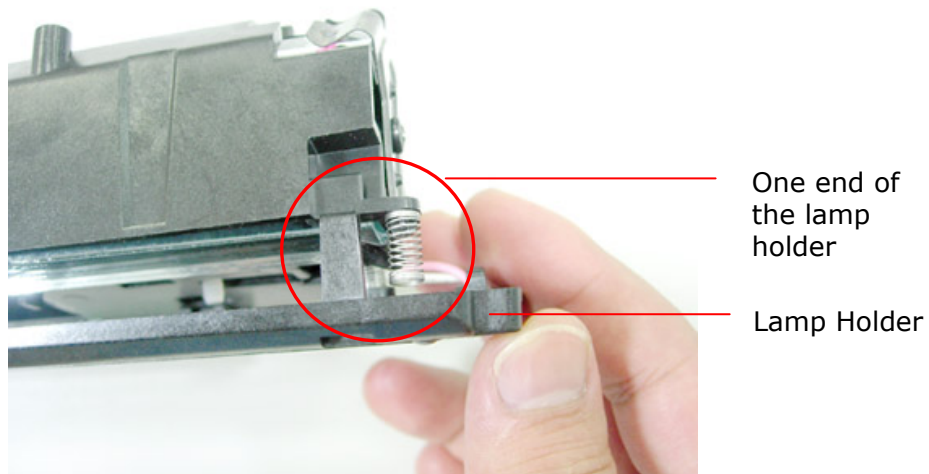
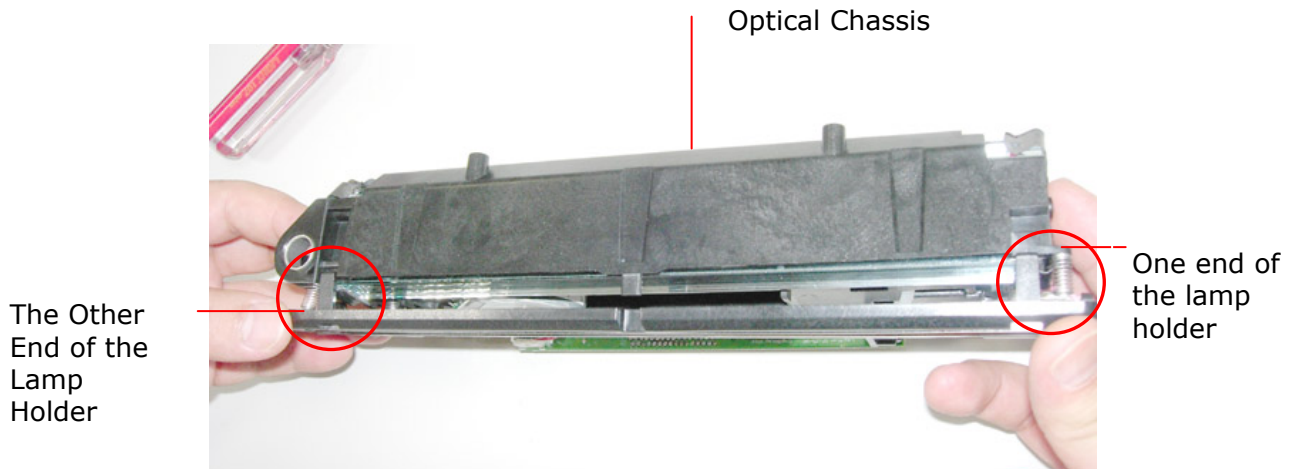
- (1) Remove optical chassis as described in section 6.3.7.
- (2) Remove the cable bandage of the CCFL inverter PCBA.
- (3) Disconnect the CCFL inverter cable and CCFL inverter PCBA cable.



Inverter PCBA Removal

6.3.9 LAMP ASSEMBLY REMOVAL

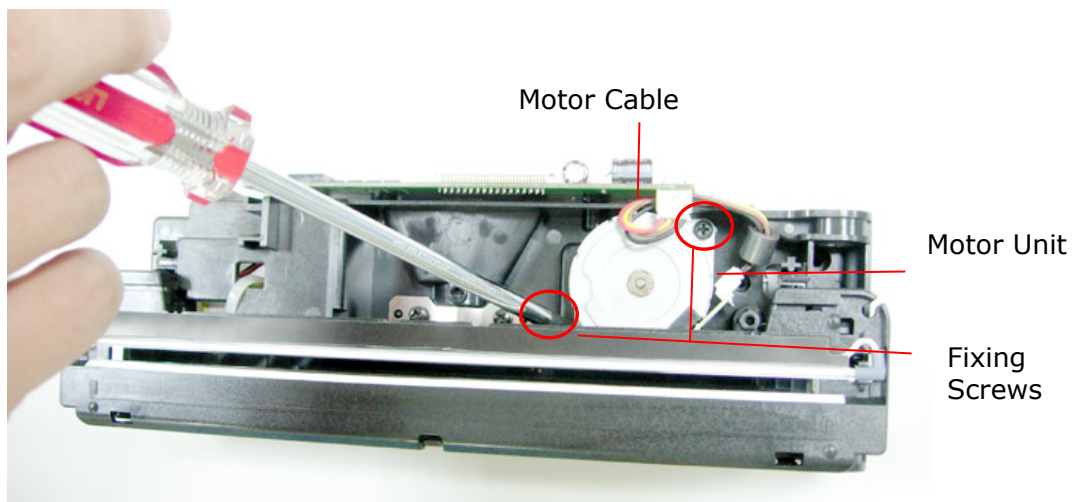
- (1) Remove the CCFC inverter as described in section 6.3.8.
- (2) Pull one end of the lamp holder and remove it from the optical chassis as illustrated.
- (3) Pull the other end of the lamp holder and remove it from the optical chassis.
- (4) Remove the lamp assembly.



Lamp Assembly Removal

6.3.10 MOTOR UNIT REMOVAL

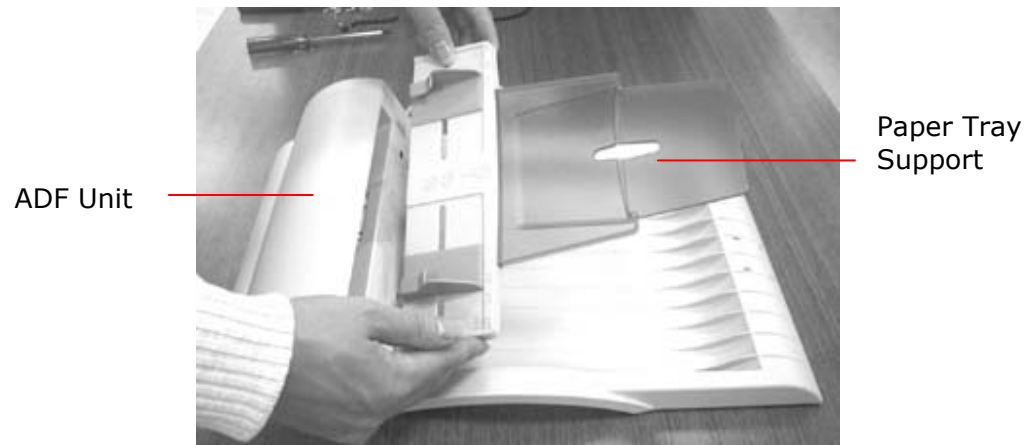
- (1) Remove the optical chassis and the CCFL inverter PCBA as described in section 6.3.7 and section 6.3.8.
- (2) Remove the lamp assembly as described in section 6.3.9.
- (3) Loosen the fixing screws (2 pcs) as shown in the figure below.
- (4) Disconnect the motor cable.
- (5) Remove the motor from the optical chassis.



Motor Removal

6.3.11 ADF PAPER-TRAY REMOVAL

Move the adjusting guides to the medium place, and then remove the paper tray support.

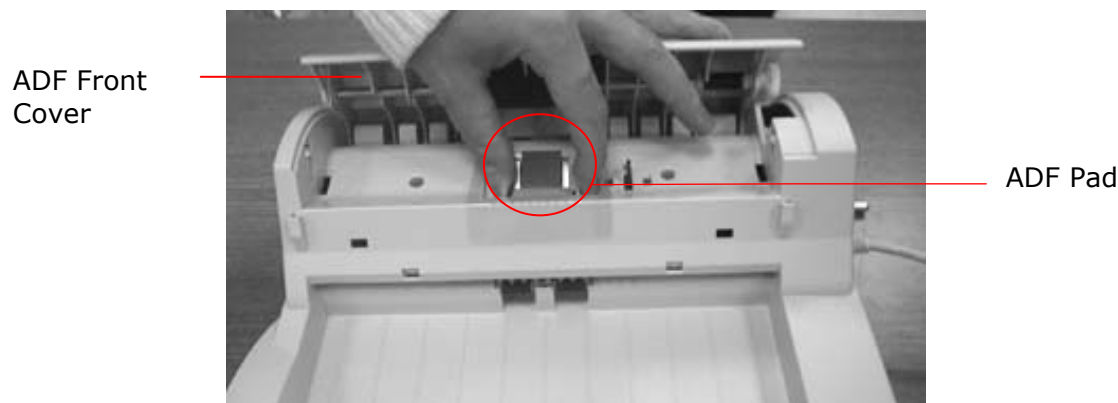


ADF Paper-tray Removal

6.3.12 ADF SNAP-IN PAD REMOVAL

After scanning approximately 20,000 pages through the ADF, the pad may be worn out and you may experience problems with document feeding. In this case, it is highly recommended that you replace the pad module with a new one. To order a pad module, please consult your nearest dealer and follow the procedure below to replace it.

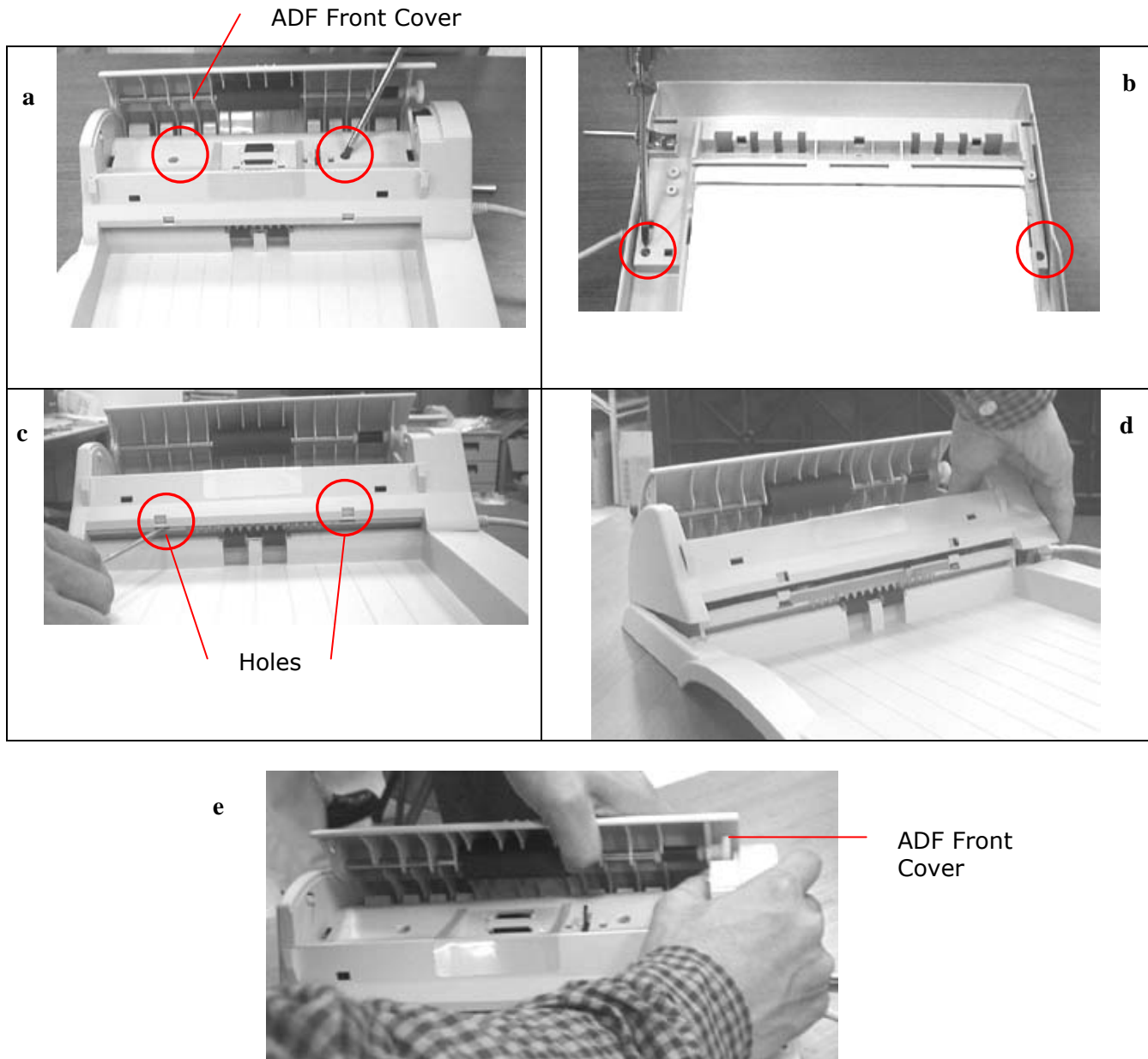
- (1). Gently open the ADF front cover to the left.
- (2). Press both arms of the ADF snap-in pad module inwardly with your fingers to pull out the ADF snap-in pad module.



ADF Snap-in Pad Removal

6.3.13 ADF FRONT COVER REMOVAL

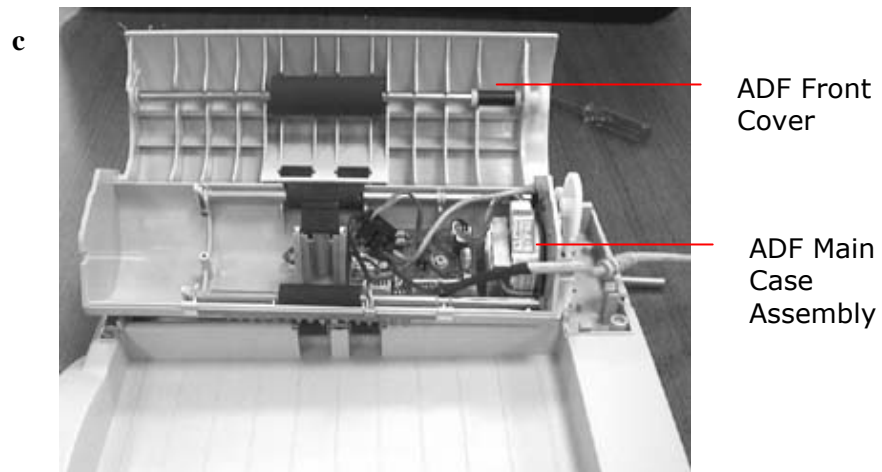
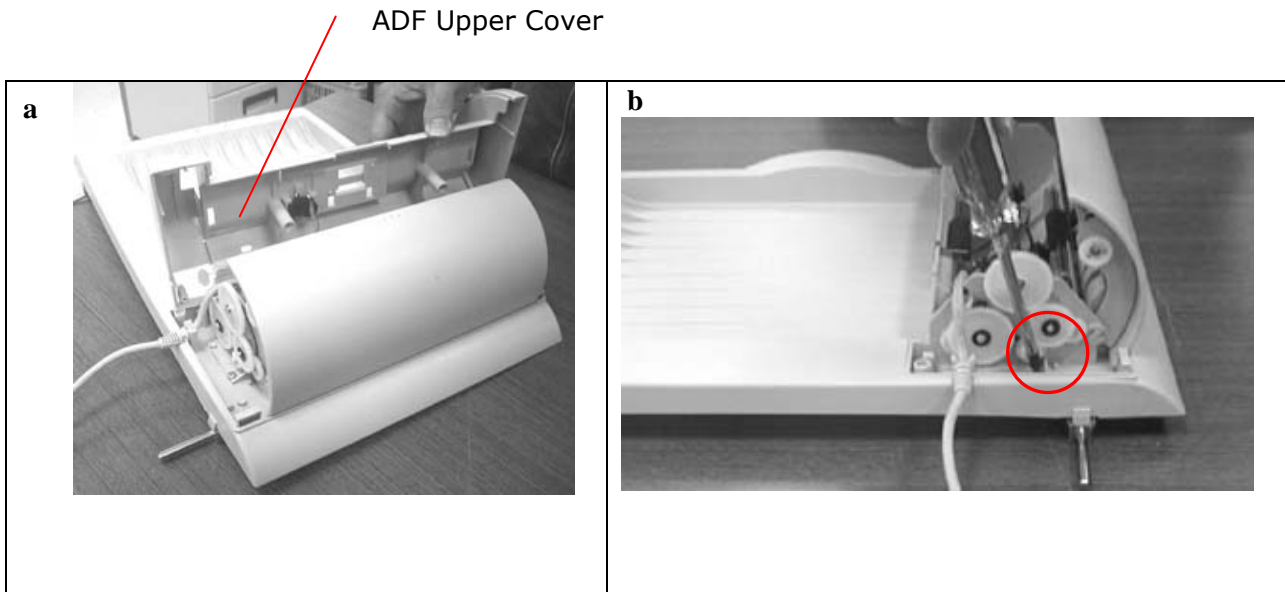
- (1). Move the front cover to the left as illustrated.
- (2). Loosen the fixing screws (2 pcs) as illustrated.
- (3). Turn the ADF cover upside down and loosen the fixing screws (2 pcs) on both sides as illustrated.
- (4). Insert a flat screwdriver into the two indicated holes to release the ADF cover.
- (5). Hold one side to lift the ADF front cover assembly.



ADF Front Cover Removal

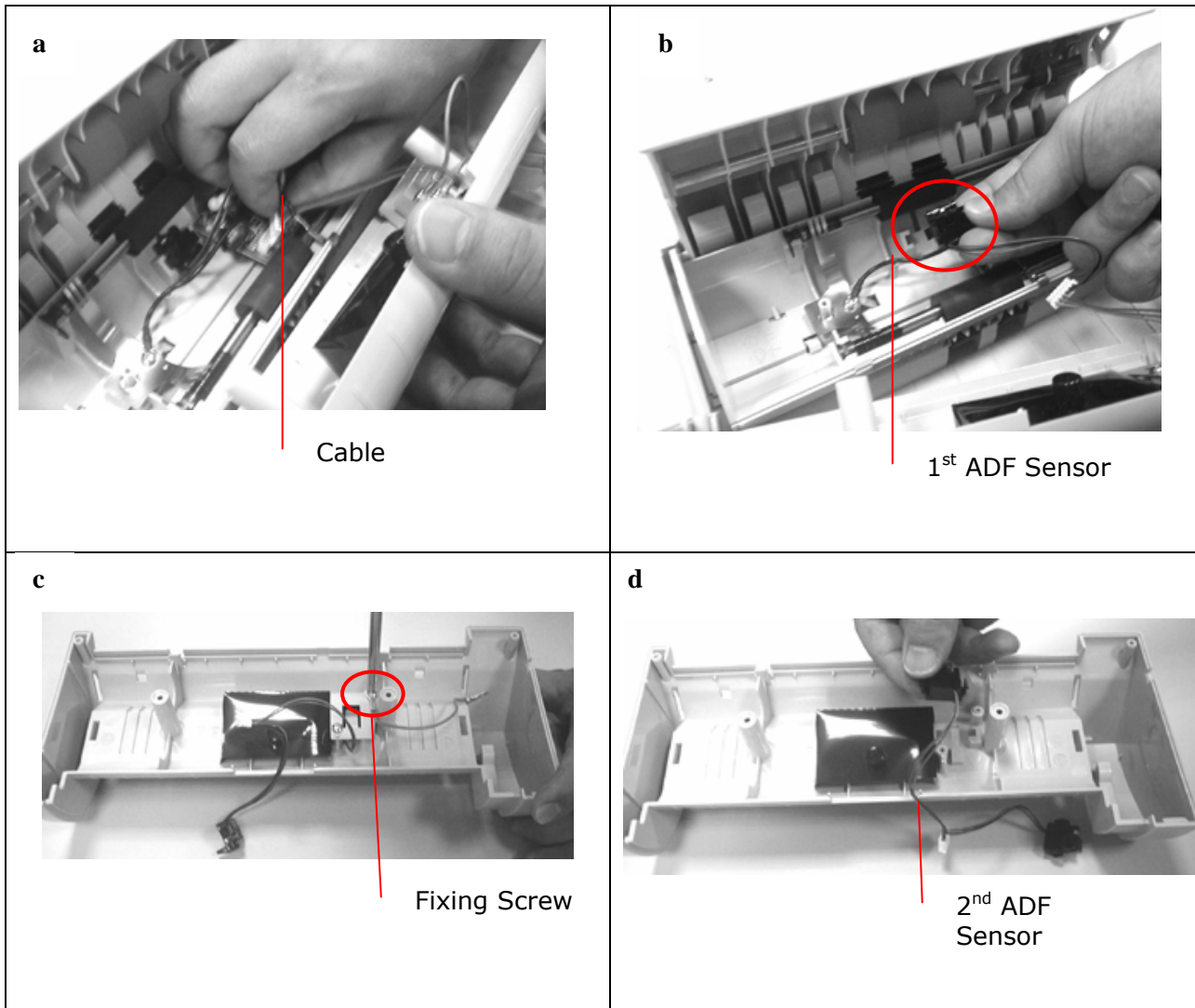
6.3.14 ADF MAIN CASE REMOVAL

- (1). Remove ADF front cover as described in section 6.3.13.
- (2). Remove the ADF upper cover.
- (3). Loosen the fixing screws (2 pcs) on both sides as indicated.



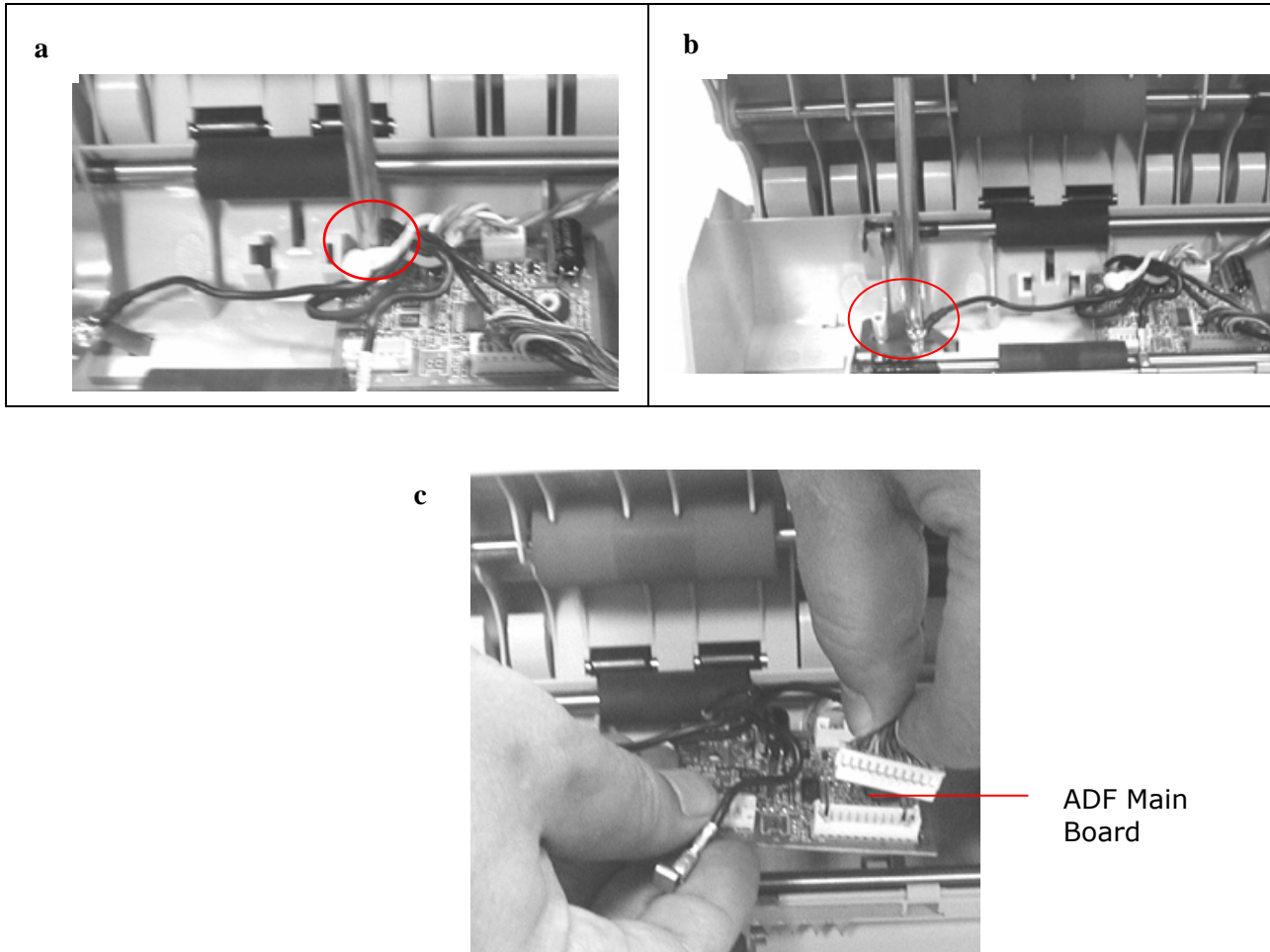
6.3.15 ADF SENSOR REMOVAL

- (1). Remove ADF front cover assembly as described in section 6.3.14.
- (2). Unplug the cable as shown below.
- (3). Remove the first sensor as illustrated.
- (4). Loosen the screw as illustrated.
- (5). Remove the second sensor as illustrated.



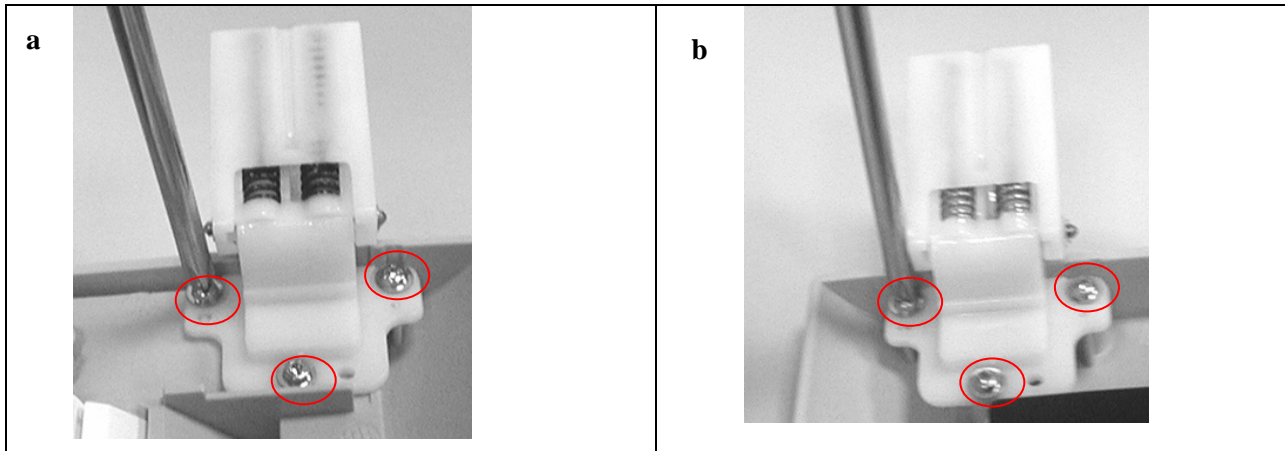
6.3.16 AB BOARD REMOVAL

- (1). Loosen the screws as shown below.
- (2). Unplug all cable to remove the ADF main board as indicated.



6.3.17 DOCUMENT HINGES REMOVAL

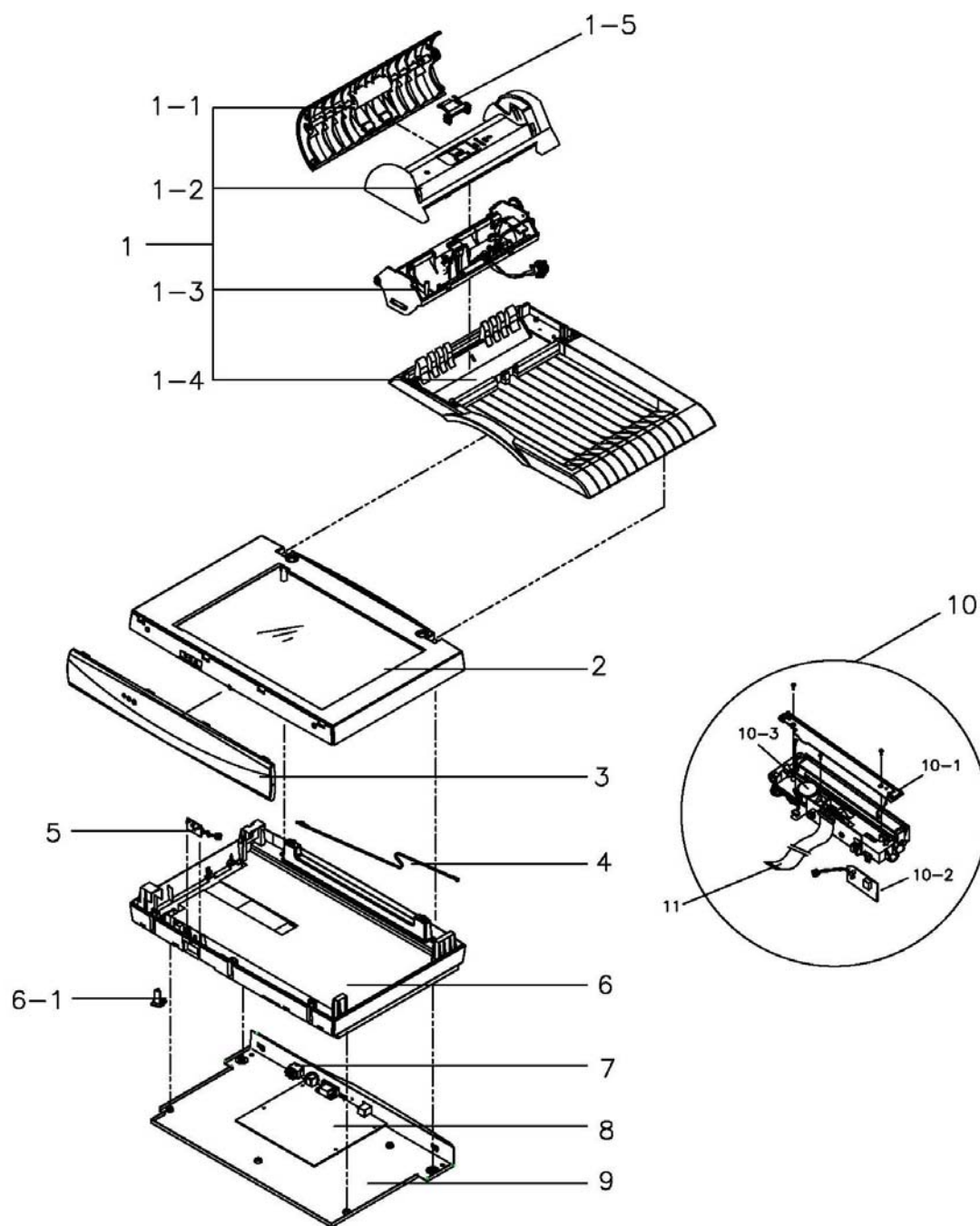
Loosen all screws to remove two hinges located on both side of the document cover as illustrated below.

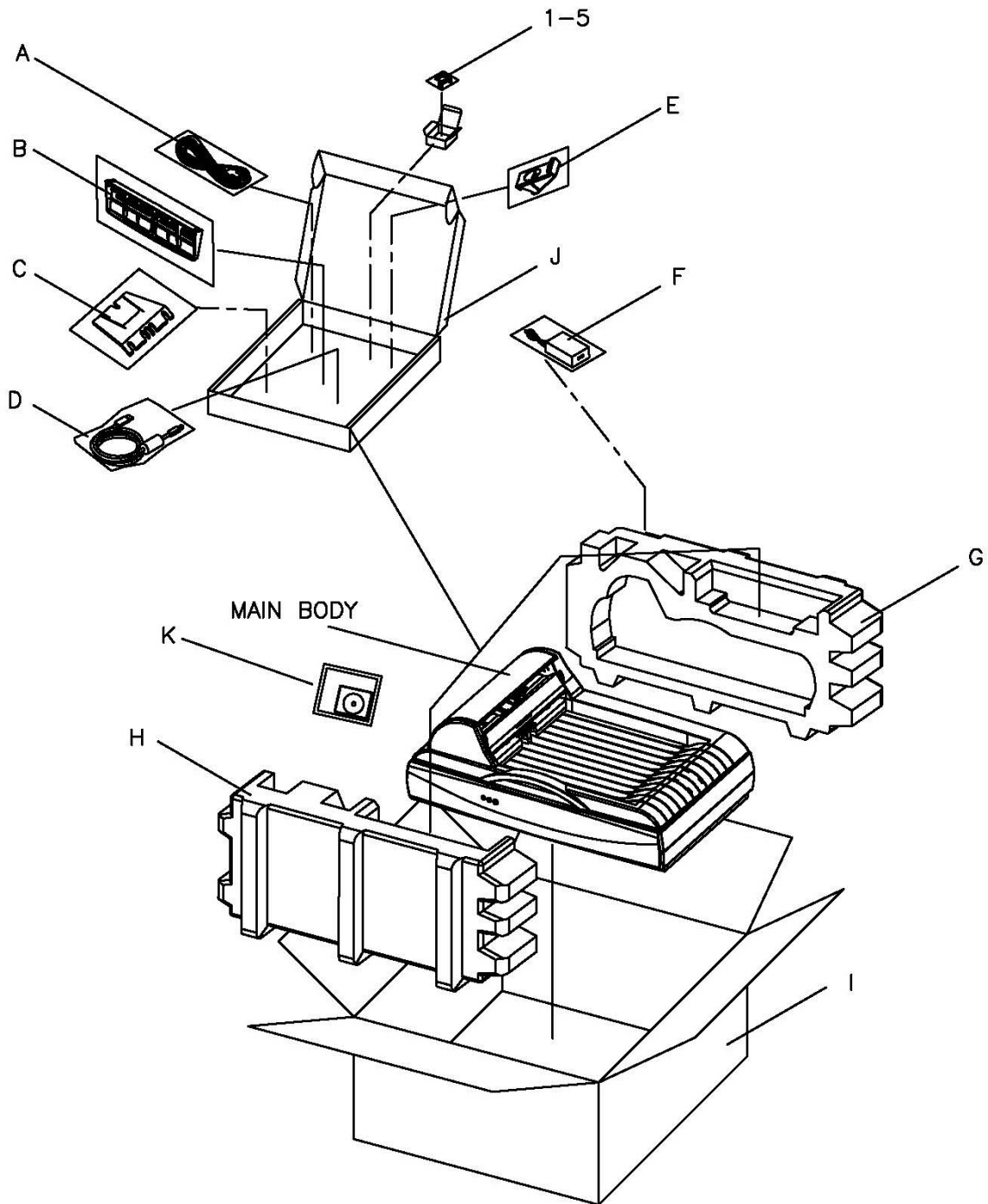


7. PARTS

<h3>7.1 Spare Part Diagram/Table</h3>

7.1 SPARE PART DIAGRAM





ITEM	P/N	DESCRIPTION	REV.
ADF MODULE			
1	002-3518-0-SP	S-PARTS:ASS'Y,ADF MODULE,RoHS	100
1-1	002-2975-0-SP	S-PARTS:ASS'Y,FRONT CASE,RoHS	100
1-2	051-2870-0-SP	S-PARTS:COVER,UPPER:PC,2.5t,272x117x66,RoHS	100
1-3	002-3516-0-SP	S-PARTS:ASS'Y,MAIN CASE,RoHS	100
1-4	002-4104-0-SP	S-PARTS:ASS'Y,DOCUMENT COVER,XEROXDM515,VISIONEER,RoHS	100
1-5	002-1193-0-SP	S-PARTS: ASS'Y, ADF PAD,RoHS	500
FLATBED SCANNER			
2	002-2982-0-SP	S-PARTS:ASS'Y,UPPER HOUSING,RoHS	100
3	002-3513-0-SP	S-PARTS:ASS'Y,FRONT COVER,RoHS	100
4	003-2178-0-SP	S-PARTS: ASS'Y, BELT	500
5	004-1582-9-SP	S-PARTS:PCBA:LBA89,RoHS	100
6	003-6400-0-SP	S-PARTS:HOUSING LOWER: 447x292x60, ABS, BLACK,RoHS	100
6-1	051-1035-0-SP	S-PARTS: LOCK: 24x20x30mm, PC, GRAY	400
7	008-0144-09-SP	S-PARTS:ASS'Y, POWER S/W,DWA-003, 5P,P=2.5mm,L=50mm,W/TUBE,RoHS	100
8	003-6399-0-SP	S-PARTS:PCBA,MBA423+F/W,XEROX DM515,RoHS	100
9	054-0366-0-SP	S-PARTS: MOUNT, PCBA-U, 232x413x32.5, SECC, MB169, ADF26P	100
10	002-3505-0-SP	S-PARTS:ASS'Y,OPTICAL:600 GEAR RATION,RoHS	200
10-1	002-3508-0-SP	S-PARTS:ASS'Y,LAMP:RoHS	200

10-2	005-0000-09-SP	S-PARTS: INVERTER,24V,7mA,50KHz,01-B118-0014,COTEK,FOR 1 CCFL,Lead Free,W/FUSE,RoHS	300
10-3	065-0088-09-SP	S-PARTS:MOTOR:STEPIING BIPOLAR,24V,0.62A,3.75°,4Phase,6Ω,MITSUMI ,M42SP-4N,RoHS	300
11	104-5051-09-SP	S-PARTS:FFC CABLE,32P,P=1.0mm,L=400mm,F14D32A,Tenn Rich, ,RoHS	100
ACCESSORY			
A-1	104-8007-09-SP	S-PARTS:AC POWER CORD:US,3P,10A/125V,L=1800mm,3C*18AWG ,BLACK,PH8B2EDJF0A-05B,RoHS	400
A-2	104-8006-09-SP	S-PARTS:AC POWER CORD,EUR.(CEE),2P+G. BASE,16A/250V,L=1800mm,3C*0.75mm2,BLACK,PG8B9CIJG0A-05B,RoHS	300
A-3	104-8011-09-SP	S-PARTS:AC POWER CORD,UK(BS/PSB),3P,3A/250V,L=1800mm,3C *0.75mm2,BLACK,PG8B9X3JG0A-05B	100
B	002-2971-0-SP	S-PARTS:ASS'Y,PAPER TRAY	100
C	002-2964-0-SP	S-PARTS:ASS'Y,PAPER SUPPORTRoHS	100
D	104-0285-09-SP	S-PARTS:USB2.0 CABLE,L=1850mm,C041-370448-A,28AWG,W/CORE,PANTONE 432C(BLACK),RoHS	100
E	002-1583-0-SP	S-PARTS: ASS'Y, STOPPERRoHS	200
F	005-3025-09-SP	S-PARTS:ADAPTER:DESK-TOP,IEC 320-C6,3P,100~240Vac,24Vdc,1A,24W,HEG42-240100-7L(A) LF,HITRON ,CLASS I,W/2 CORE:R5 RH 12x20x5.6 & FH21.2x7.7x14.4,ENERGY STAR & RoHS	100
G	072-0493-0	FOAM, EPS,L:575x250x100,62.5,RoHS	100
H	072-0494-0	FOAM, EPS,R:575x250x100,62.5,RoHS	100
I	073-1580-0	CARTON:592x400x285mm,AB/F,RoHS	100
J	073-0590-0	ACCESSORY BOX : 280x245x48 , B/F,RoHS	300
K	003-2863-0	S/W PACKAGE:UNIVERSAL,RoHS	200
K-1	256-0387-0	CD	100
K-2	251-0600-0	QUICK GUIDE	200
K-3	255-0739-0	TECHNICAL SUPPORT CARD	500