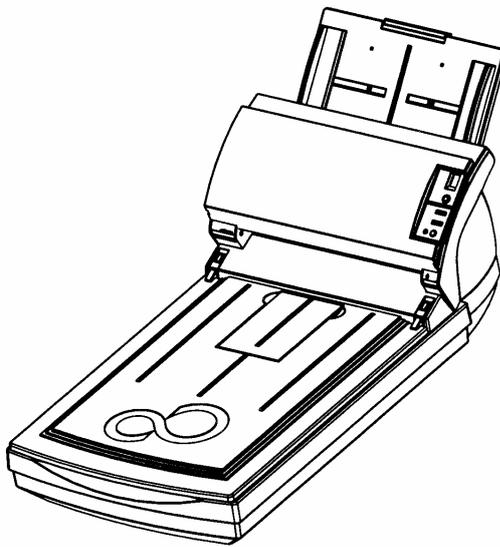


fi-5220C Image Scanner Maintenance Manual



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02	February 20, 2006	P72: Belt tension adjustment P122, 134, 135: "AC Cordset UK" added. P122, 130: For RoHS compliance, etc.
03	April 4, 2006	P122, 134, 135: Model names added.
04	July 28, 2006	P134: AC Adapter photo changed.
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07	March 18, 2008	P56: Troubleshooting procedure added. P100, 123, 136: "CR Frame" added.
08	June 5, 2009	P63, 99-102: FB Belt adjustment and Belt tension checking is added.

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Preface

This manual provides the technical information such as maintenance, trouble shooting procedure and parts replacement procedure for field Engineers on fi-5220C image scanner.

This manual is for use as a maintenance tool only.

For information that is not contained in this manual, refer to the following manuals:

Item	Manuals	P/N *	Remarks
1	fi-5120C/fi-5220C Image Scanner Operator's Guide	P3PC-1322-xxEN	Attached to fi-5120C/fi-5220C (CD-ROM)
2	fi-5120C/fi-5220C Getting Started	P3PC-1312-xxEN	Attached to fi-5120C/fi-5220C (booklet)
3	fi-5220C Illustrated Parts Catalog	P4PA03484-B50X/6	

* xx represents revision number of the manuals.

Convention

Special information, such as warnings, cautions, is indicated as follows:

WARNING

This indication alerts operators to an operation that, if not strictly observed, may result in severe injury or death.

CAUTION

This indication alerts operators to an operation that, if not strictly observed, may result in safety hazards to personnel or damage to equipment.

NOTICE

NOTICE provides 'how-to' tips or suggestions to help you perform a procedure correctly.

General note:

Be careful not to power off the scanner while communicating with the host computer. In case that the scanner is accidentally powered off during communication with the host, follow the procedure below:

1. Power off the host computer
2. Power on the scanner.
3. Power on the host computer.

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References to operating systems (OS) and applications are indicated as follows:

Windows 95: Microsoft® Windows® 95 operating system.

Windows 98: Microsoft® Windows® 98 operating system.

Windows Me: Microsoft® Windows® Millennium Edition operating system.

Windows 2000: Microsoft® Windows® 2000 Professional operating system.

Windows XP: Microsoft® Windows® XP Professional operating system,
Microsoft® Windows® XP Home Edition operating system.

Windows NT 4.0: Microsoft® Windows NT® Server operating system Version 4.0
Microsoft® Windows NT® Workstation operating system Version 4.0

Where there is no distinction between the different versions of the above operating system, the general term “Windows” is used.

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Chapter 1 Overview

1.1 Specifications

The fi-5220C (hereinafter called “the scanner”) offers high-speed color/gray/monochrome scanning with 600 dpi of optical resolution, up to A4 size (Legal size for ADF scanning). It supports two interfaces, SCSI interface and USB interface, either of which can be used at a time.

The following points have been improved for the scanner compared to the previous type (fi-4220C2).

- (1) Improvement of cooler scanning speed
By changing the CCD, color scanning speed (A4 Portrait 200dpi) is improved from 16 ppm to 25 ppm.
- (2) Ultrasonic multi feed sensor
The previous model has the optical sensor which detects the length of documents and transmitted light to detect the multi feed. This scanner introduces ultrasonic sensor in order to perform very reliable multi feed detection.
- (3) Prevention of image chipping at overscan
Adding the electromagnetic Clutch to ADF enables to control the gap between documents. This results in extending overscan width, so that the image will not be chipped even when the document is skewed.
- (4) Card transportation with emboss available
This becomes available by widening the ADF transportation path.
- (5) Specified number of scanned pages ejected to the stacker
Adding the electromagnetic Clutch to ADF provides Pre-pick operation. When Pre-pick and the number of documents to be scanned are specified, this function becomes available.

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1-1-1 Scanner Specifications

No.	Items	Specifications		
		This model	Previous models (fi-4220C2 for reference)	
1	Operating method	Automatic Document Feeder (ADF) + Flatbed (FB)		
2	Optical resolution	600 dpi		
3	Output resolution	Binary: 50 – 600dpi Gray: 50 – 600 dpi Color: 50 – 600 dpi		
4	Bit depth	Color: 24 bit, Gray: 8 bit, Binary: 1 bit		
5	Scanning speed	Binary (200 dpi, A4 Portrait)	Simplex: 25 ppm Duplex: 50 ipm	
		Color (200 dpi, A4 Portrait)	Simplex: 25 ppm Duplex: 50 ipm	
6	Document	Size	ADF	Maximum: A4 or Legal, 210 x 356 mm / 8.27x 14 in (Portrait) 216 x 864 mm / 8.50 x 34 in (Long page scanning) Minimum: A8, 52 x 74 mm (Portrait and Landscape)
			FB	Maximum: A4 or Legal, 210 x 356 mm / 8.27x 14 in (Portrait) 216 x 864 mm / 8.50 x 34 in (Long page scanning) Minimum: No limit
		Thickness (ADF)	52 to 127 g/m ² (14 to 34 lbs)	
		Card Transport (ADF)	Available (85.6 x 53.98mm, 0.76mm thick)	
7	Capacity of ADF	50 sheets (80g/m ² or 20lb, A4)		
8	Optical system	Lens and mirrors in use		
9	Light source	White cold cathode fluorescent lamp x3		
10	Multi feed detection	Ultrasonic sensor	Optical sensor	
11	Interface	Ultra SCSI and USB 2.0/1.1 (one each)		
12	Attached driver	FJ TWAIN / ISIS		
13	Operator panel	Switch: Scan, Send To, Function Lamp: Power (LED), Scanner status (Function No. Display)		
14	Background	ADF: Selectable (black or white) for Front/Back sides FB: White		
15	Dropout color	R, G, B, Non-dropout *		
16	Paper size detection	Available	Available **	

* The speed for color scanning is applied when non-dropout is selected.

** A part of the image may be chipped for the document larger than A4.

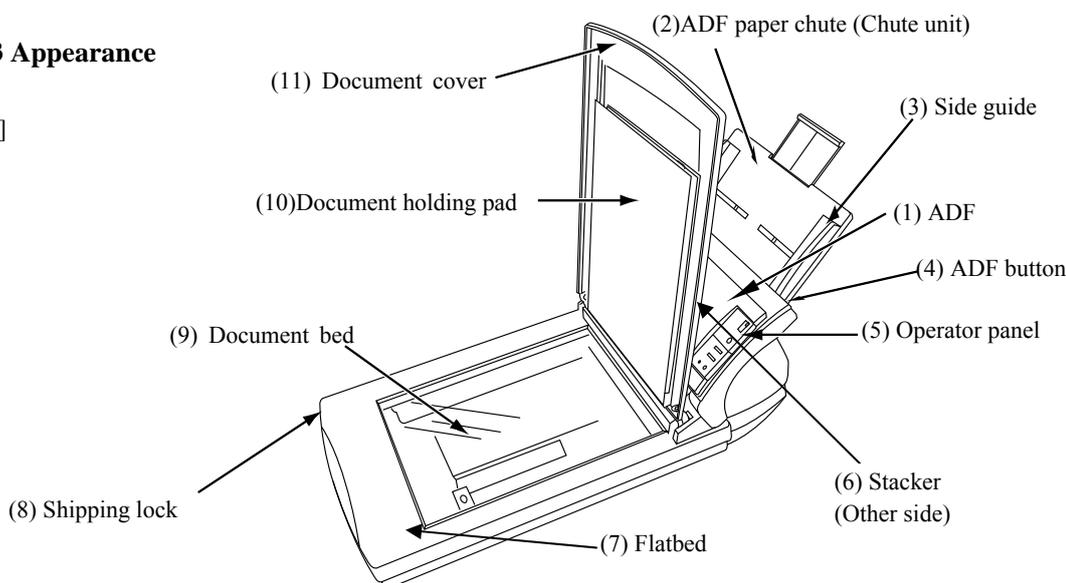
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1-1-2 Environmental Specifications

No.	Items		Specifications	
			This model	Previous models (fi-4220C2 for reference)
1	Input power	Voltage	100 to 120 VAC \pm 10% 220 to 240 VAC \pm 10%	
		Frequency	50/60 \pm 3 Hz	
2	Power consumption		38W or less (Rated power)	34 W or less (Rated power)
3	Noise		50 dB or less (excluding operator's area)	
4	Outer dimensions		Excluding Chute and Stacker Unit: 302 (W) x 569 (D) x 229 (H) mm 11.9 (W) x 22.4 (D) x 9.0 (H) in	
5	Installation space		400 (W) x 800 (D) x 450 (H) mm 15.8 (W) x 31.5 (D) x 17.8 (H) in	
6	Weight		8.4 kg (18.54 lb)	8 kg (17.64 lb)
7	Ambient condition	Temperature	5 to 35 °C / 41 to 95 °F (Operating) -20 to 60 °C / -4 to 140 °F (Not operating)	
		Humidity	20 to 80 % (Operating) 8 to 95 % (Not operating)	
8	Calorific value		32.78kcal/H or less	29.3kcal/H or less
9	Shipping weight		12.5kg / 27.59 lb	11.5kg / 25.39 lb

1-1-3 Appearance

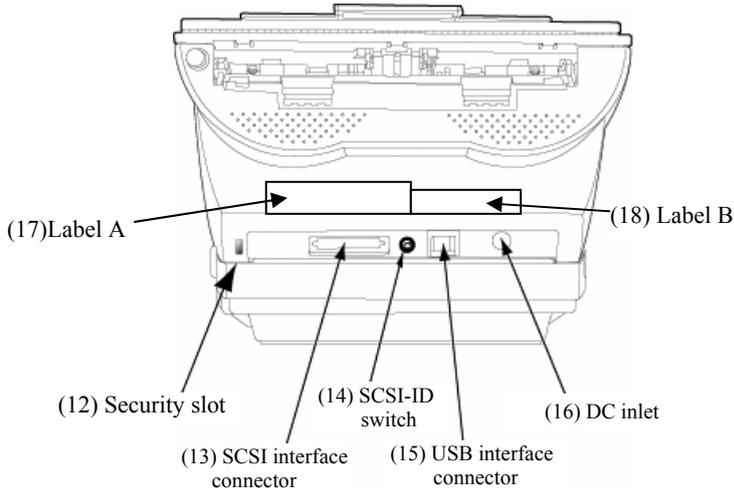
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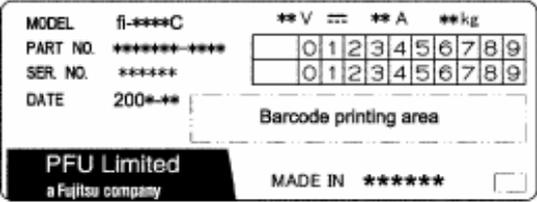


No.	Parts name	Function
1	ADF (Automatic Document Feeder)	Automatically feeds documents into the scanner.
2	ADF paper chute (Chute Unit)	Used when scanning documents on the ADF.
3	Side Guide	Adjust the side guides to match the width of the documents to prevent the document from skewing.
4	ADF button	Press this button to open the ADF cover, for example, to remove jammed documents in the ADF.
5	Operator panel	Used for operating the scanner. The scanner status is indicated on the Function No. Display Panel.
6	Stacker	Documents are stacked here after they are scanned.
7	Flatbed	Used when reading one manuscript at a time.
8	Shipping lock (located on base)	Lock the Carrier unit in the Flatbed when shipping.
9	Document bed	The document is placed here at flatbed scanning.
10	Document holding pad	Presses the document to fix it.
11	Document cover	The document set on the document bed is fixed when closed.

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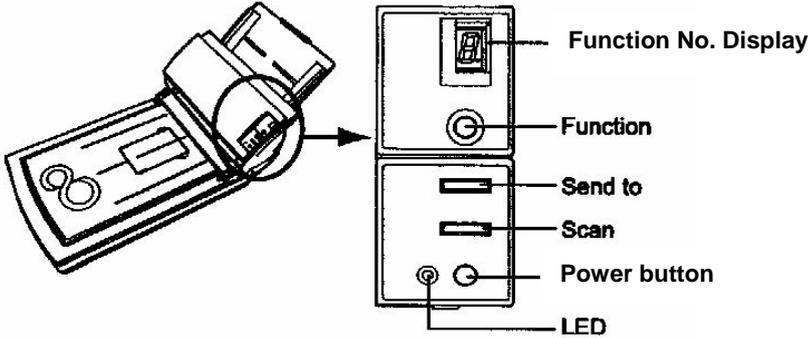
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No.	Parts name	Function
12	Security slot	Attaches the antitheft chain
13	SCSI interface connector	Connects the SCSI interface cable from the host PC or Computer here.
14	SCSI ID switch	Sets the SCSI-ID. (Set to "5" before the scanner is shipped from the factory.)
15	USB interface connector	Connects the USB interface cable from the host PC or Computer here.
16	DC inlet	Connects the AC Adapter here.
17	Label A	Manufacturing label (example) 
18	Label B	Authorizing label (example) 

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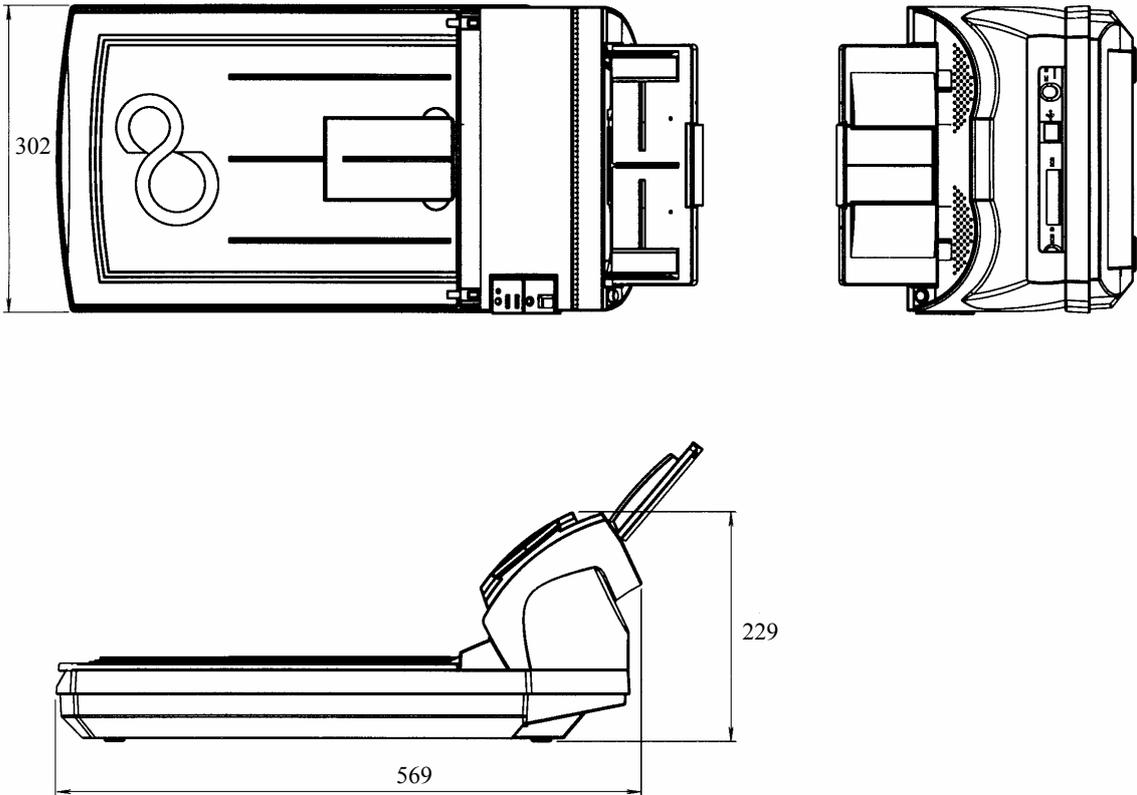
[Operator Panel]



Name		Function
Function No.	Display	Indicates the function number and Error status.
Button	Function	Changes the Function activated by the [Send to] button.
	Send to	Launches the linked application software (*).
	Scan	Launches the linked application software (*).
	Power button	Turns the scanner ON and OFF.
LED	-	Lights when the scanner is turned ON.

(*): About the setting on the launcher, refer to FUJITSU TWAIN 32 scanner driver help in the Setup CD-ROM.

[Outer dimensions]



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1-1-4 Document Specifications

- Document Type

The following paper types are recommended for document use:

- Woodfree paper
- Wood containing paper

When using documents of paper type other than the above, check whether or not the document can be scanned by test-scanning a few sheets before executing the actual document.

- Document Thickness

Paper thickness is expressed by “paper weight”. The following shows the paper weights that can be used on this scanner:

52 g/m² to 127 g/m²
 Only paper weight of 127 g/m² is acceptable for A8-size documents.

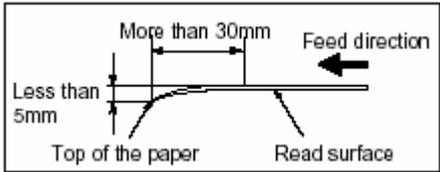
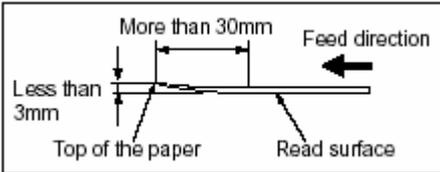
- Precautions

The following documents may not be scanned successfully.

- Documents of non-uniform thickness (e.g. envelopes)
- Wrinkled or curled documents (See right figure)
- Folded or torn documents
- Tracing paper
- Coated paper
- Carbon paper
- Carbonless paper
- Photosensitive paper
- Perforated or punched documents
- Documents that are not square or rectangular
- Very thin documents

Do not use the following documents:

- Paper-clipped or stapled documents
- Documents on which the ink is still wet
- Documents smaller than A8 (Portrait) in size
- Documents wider than A3 or Letter size (216mm)
- Documents other than paper such as fabric, metal foil or transparencies



Note: - When scanning semi-transparent documents, slide the [Brightness] bar to light to avoid bleed through.
 - To prevent the rollers from becoming dirty, avoid scanning documents containing large areas written or filled in pencil. If scanning of such document is unavoidable, clean the rollers more frequently.

Note: - Carbonless paper contains chemical substances that may damage the Pad ASSY or rollers (e.g. Pick roller) when documents are fed. Pay attention to the following:
Cleaning: If pick errors occur frequently, clean the Pad ASSY and Pick rollers, by referring Section 1-6-2.
Replacement parts: The service life of the Pad ASSY and the Pick rollers is sometimes shortened when scanning medium-grade paper documents.
 - When the manuscript of Wood containing paper is read, the life of a Pad ASSY and a Pick roller may become short compared with the case where the manuscript of Woodfree paper is read.

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1-1-5 Multi feed Detection Condition

One of the following method of multi feed detection is selected by the driver.

- Check overlapping
- Check length
- Check overlapping and length

The following condition is required for each selection:

1) Check overlapping

- Paper weight: 52g/m² - 127g/m²
- Punched holes are not allowed within 35 mm (1.4 in) of the vertical centerline of the document.
- Other paper shall not be glued within 35 mm (1.4 in) of the vertical centerline of the document.

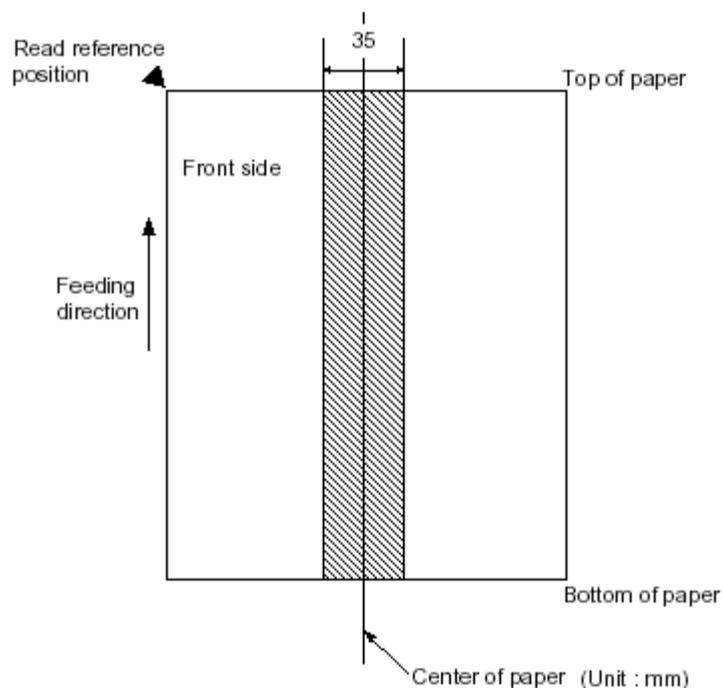
2) Check length

- Document length deviation: 1 % or less
- Punched holes are not allowed within 35 mm (1.4 in) of the vertical centerline of the document.

3) Check overlapping and length

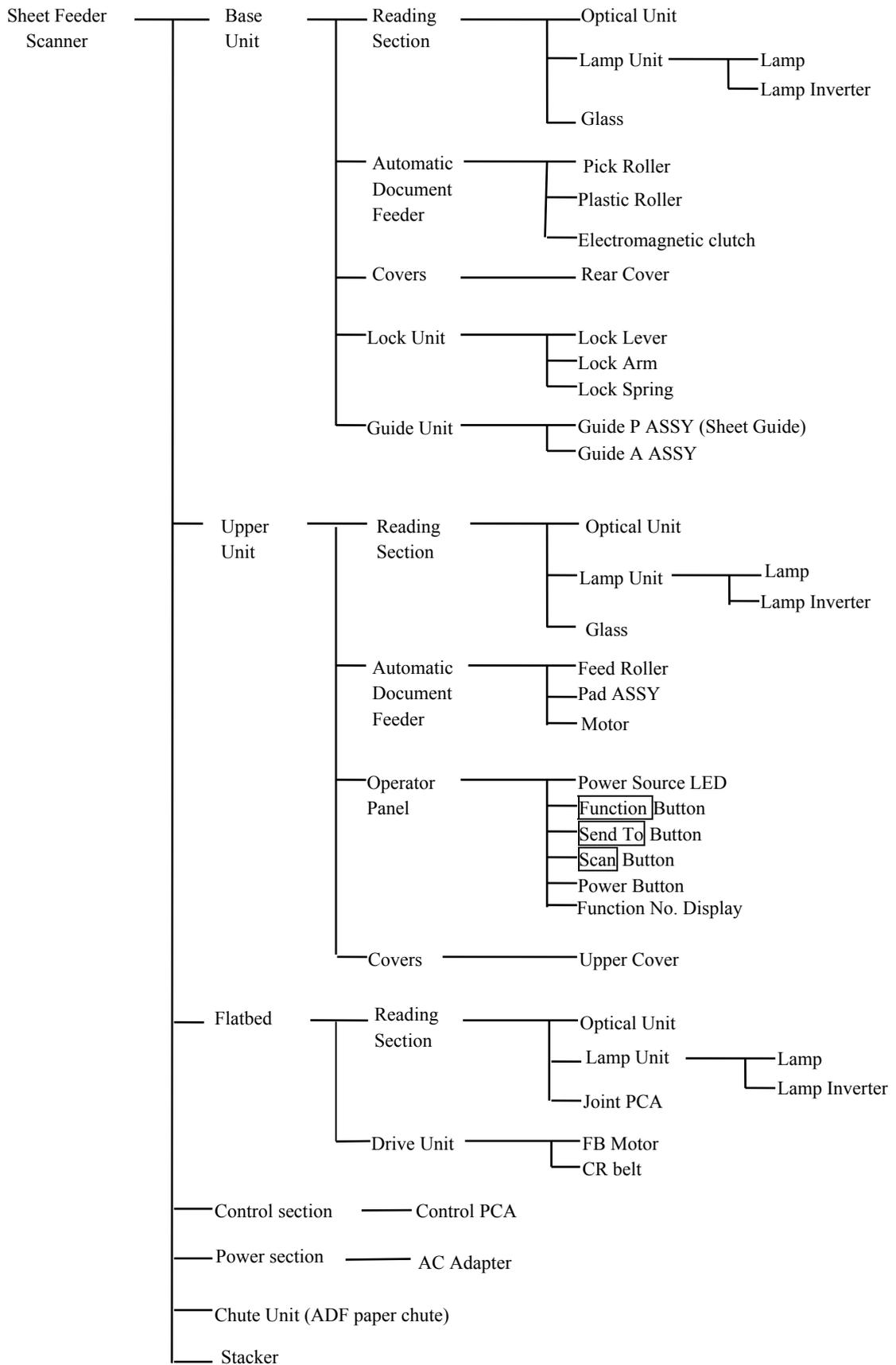
- Paper weight: 52g/m² - 127g/m²
- Document length deviation: 1 % or less
- Punched holes are not allowed within 35 mm (1.4 in) of the vertical centerline of the document.
- Other paper shall not be glued within 35 mm (1.4 in) of the vertical centerline of the document.

When the overlapping check is specified, the papers which contact closely each other, such as glued paper or electro-statically charged paper, can result in the miss-detection of multi feed.



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1-2 System Configuration



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1-3 Unpacking the Scanner

Follow the procedure below to unpack the scanner package. Make sure that all the accessories are included in the package.

1. Remove the tape to open the package box.
2. Take out the CD tray and other accessories.
3. Take out the scanner and cushions. And remove the cushioning materials.
4. Open the polyethylene bag to take out the scanner.
5. Take out all the accessories and remove the tape protecting the scanner.

The following table lists the packaging configuration.

No.	Items	Quantity
1	Package box	1
2	CD tray (including accessories)	1
3	Cushion R	1
4	Cushion L	1
5	ADF paper chute (Chute Unit) and other accessories	1
6	Scanner in Polyethylene bag	1

Table 1-3 Packaging list

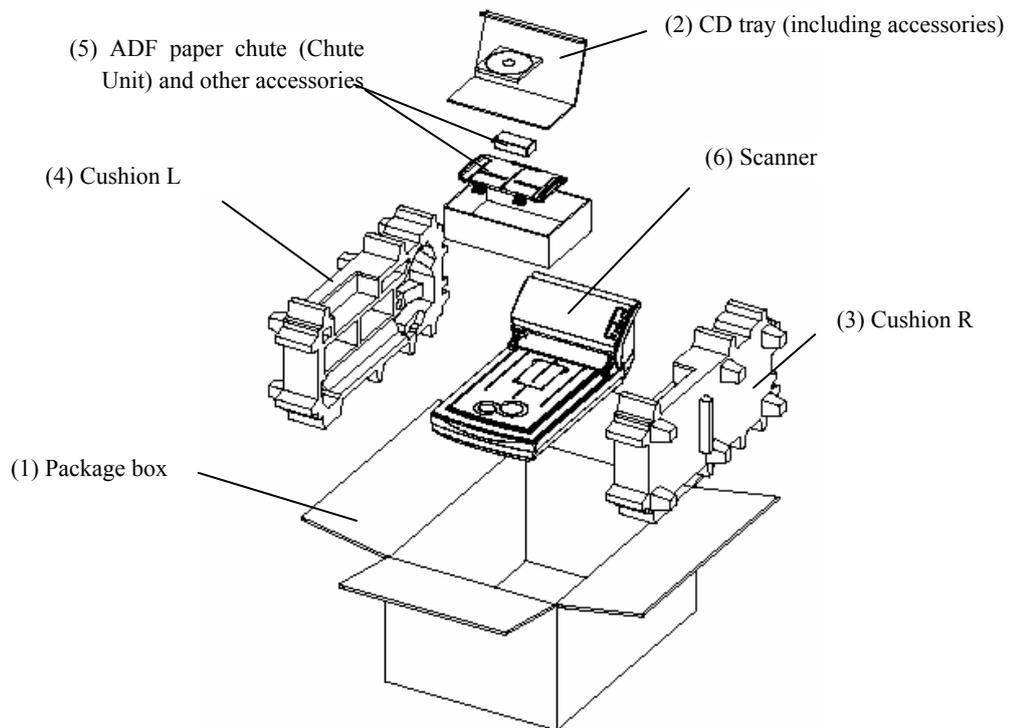


Figure 1-3 Packaging Configuration

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1-4 Installing the Scanner

1-4-1 For safety installation

Before installing the scanner, read the following cautions carefully to avoid scanner trouble.
Refer to [Section 1-1-2 “Environmental Specifications”](#) for information of power source and scanner dimensions.

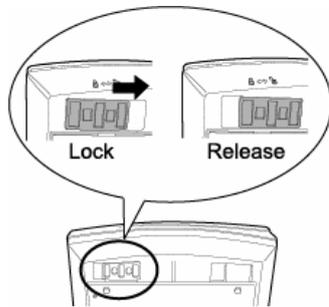
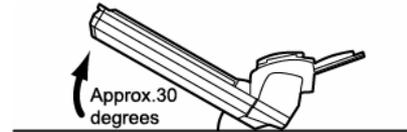
- Install the scanner away from strong magnetic fields and other sources of noise.
- Do not install the scanner near heating apparatus or in the direct sunlight.
- Install the scanner in a location which is level and subject to minimal vibration.
- Do not install the scanner in locations subject to humidity and dust.
- Do not block the ventilation ports.
- Protect the scanner from static electricity.
- Use proper AC voltage.
- Make sure the rubber pads on the bottom of the scanner grounds evenly.

1-4-2 Installation

(1) Place the scanner at its installation site.

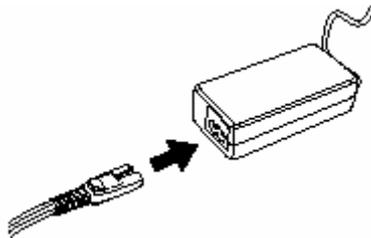
(2) Unlock the Shipping lock.

The carrier unit inside the scanner is fixed in place by the shipping lock to prevent the scanner from becoming damaged during transportation from the factory. After transporting and placing the scanner, tilt the scanner (approx.30 degrees) and release the Shipping lock on the bottom of the scanner.



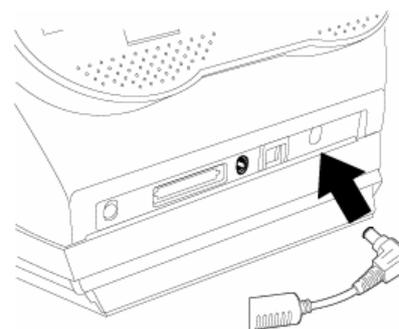
(3) Install the ADF paper chute (Chute Unit) by referring to Section 4-6-1.

(4) Connect the AC cable to the AC Adapter (picture below).



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- (5) Connect the AC Adapter connector to the scanner's DC inlet (picture on the right).
- (6) Plug the AC cable into the outlet.
Note: The Function No. Display and the LED may flash for an instant when plugging the AC cable into the outlet.
- (7) Connect the USB cable or the SCSI cable to the scanner. Connect the other end of the cable to the PC.



- Note 1: Connect only one of the USB or SCSI interface cables.
- When running Windows 95 or Windows NT 4.0, connect the SCSI interface cable. These operating systems do not support USB interface.
- When running Windows 98, Windows Me, Windows 2000, or Windows XP, connect either the USB interface cable or the SCSI interface cable.
- Note 2: Be sure to use the USB cable which comes as an accessory with this scanner. Scanning operation with commercially available cables is not guaranteed.
- Note 3: When connecting to a USB hub, use the first stage USB hub that is closest to the computer. If you use the second or later hub stages, the scanner may not operate correctly.
- Note 4: If you connect the scanner with USB 2.0, it is required that the USB port and Hub are compliant with USB 2.0. The scanning speed may slow down if it is connected with USB 1.1.
- Note 5: When using the scanner with a SCSI interface, a commercially available SCSI interface cable and SCSI card must be purchased in addition.

- SCSI interface cable:

Use a connector which complies with Ultra SCSI. A 50 Pin Contact Shielded High-Density SCSI Device Connector is required.

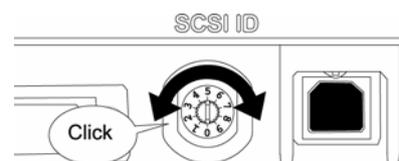
- SCSI card:

Find the recommended SCSI card information in the Fujitsu web site (FAQ).

<http://imagescanner.fujitsu.com/>

- Note 6: When connecting the SCSI interface cable, turn the scanner off. Be sure to first connect the SCSI interface cable and, then turn on the power of the scanner and the PC.
- Note 7: In a SCSI daisy chain formation, connect the scanner so that it is the terminated device.

- (8) The factory default setting for SCSI ID is "5". If the SCSI ID or another SCSI device is set to the same ID, change either the scanner's SCSI ID or SCSI ID of the other SCSI device. Set the SCSI ID using the SCSI ID switch on the back of the scanner.



- (9) Press the Power button to turn ON the scanner.
- (10) Turn ON your PC and log on to Windows.

- (11) Install the software.

The following scanner drivers and application software are included with the scanner.

Scanner drivers:

- FUJITSU TWAIN 32 Scanner driver
- FUJITSU ISIS Scanner driver

Application software:

- ScandAll 21 (For FUJITSU TWAIN 21)
- QuickScan Pro™ (FUJITSU ISIS)

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1-5 Basic Operation

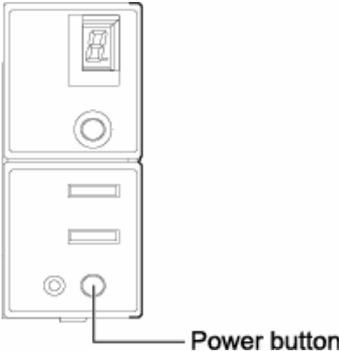
1-5-1 Turn ON/OFF the scanner

(1) Turning ON the scanner

Press the power button on the Operator panel.
 The scanner is turned ON, and the green LED on the Operator panel lights.
 Also, while the scanner is being initialized, the indication of the Function No. Display changes as follows.
 “8” → “P” → “0” → “1”
 The indication “1” means that the Operator panel is in the ready status.

(2) Turning OFF the scanner

Hold the power button down for at least two seconds.

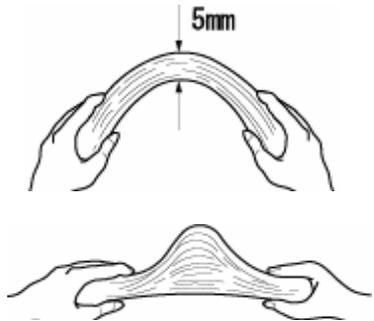


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1-5-2 Loading documents on the ADF for scanning

1. Align the edges of the documents.
 - 1) Confirm that all the documents have the same width.
 - 2) Check the number of sheets in the document stack.
 The standard number of sheets that can be loaded on the scanner is as follows:
 - A4-size paper or smaller that makes a document stack of 5mm or less
 - Maximum 50 sheets at A4, 20 lb., or 80 g/m²

2. Fan the documents as follows:
 - 1) Lightly grip both ends of the document with both hands, and bend the document as follows.

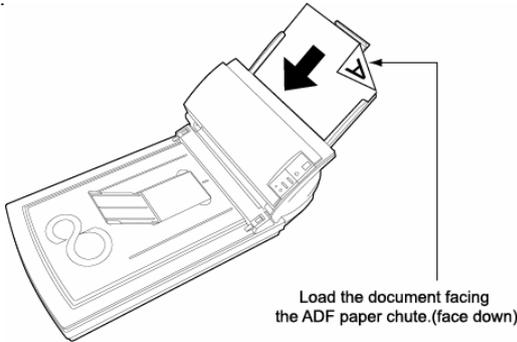


- 2) Firmly holding the document with both ends, bend back the document as follows so that the bent section rises up in the middle of the document as follows.
- 3) Repeat steps 1) to 2) a few times.
- 4) Rotate the document 90 degrees, and fan again.

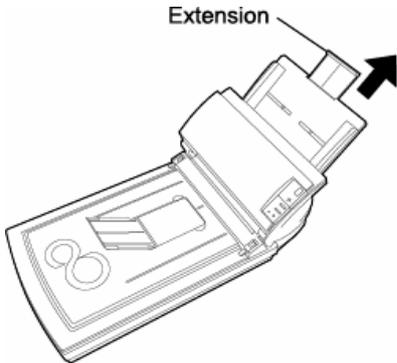
3. Align the top of the documents.



4. Load the document on the ADF paper chute (Chute Unit).
 Set the documents face-down in the ADF paper chute (Chute Unit) (so that the side to be scanned faces towards the ADF paper chute (Chute Unit)).



Before loading A4-size documents, pull out the ADF paper chute (Chute Unit) extension.

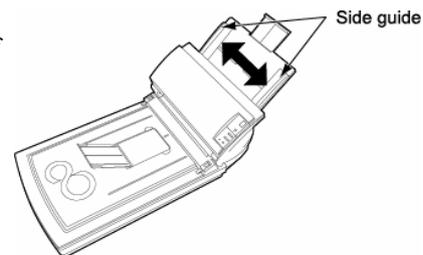


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5. Adjust the side guides to the width of the documents.

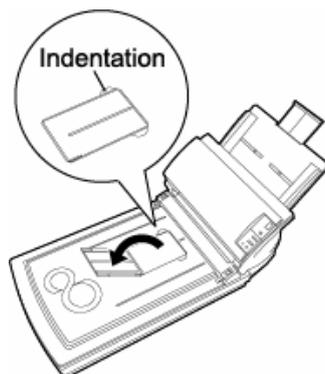
Move the side guides so that they touch both sides of the documents.

If there is any space between the side guides and the edges of documents, the scanned image may be skewed.



The stacker prevents document sheets from dropping after they are scanned.

Lift the paper stop and swing forward by inserting your fingertips into the indentation on the scanner as shown in figure below.



6. Start up the scanner application, and scan the document.

The following is an example of how to scan documents using the ScandAll application.

1) Start up ScandAll 21.

Select [Start] – [Program] – [Scanner Utility for Microsoft Windows] – [ScandAll 21].

→ This starts up ScandAll 21.

2) Select [Select Source] from the [Scan] menu.

3) Select “FUJITSU fi-5220Cdj (for Windows 95 and Windows NT 4.0, select “FUJITSU TWAIN 32”) and click the [Select] menu.

4) Click the [Scan to View] button on the tool bar.

→ The [TWAIN Driver] dialog box (screen for setting the scan conditions) appears.

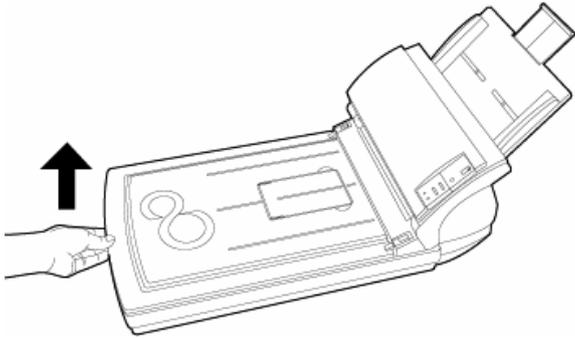
5) Set the scan resolution, paper size and other scan conditions, and click the [Scan] button.

The document is scanned, and an image of the scanned document appears on the ScandAll 21 screen. For details on ScandAll 21 functions and operations, refer to ScandAll 21 Help.

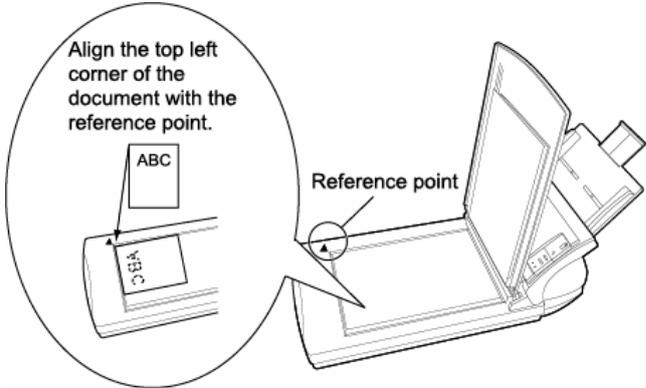
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1-5-3 Loading documents on the Flatbed for scanning

1. Lift up the Document Cover.



2. Load the document on the document bed with the scanning face down and the top left corner aligned with the reference point.



3. Gently close the Document Cover.

4. Start up the scanner application, and scan the document.

For details on how to scan documents using the ScandAll application, refer to the previous page.

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1-6 Daily Care

CAUTION

The glass surface of the ADF glass becomes hot during the operation of the scanner. Before you start to clean inner parts of the scanner, turn off its power and unplug the AC Adapter from the outlet. Wait for at least 15 minutes. Do not turn off the scanner when you clean the Feed rollers.

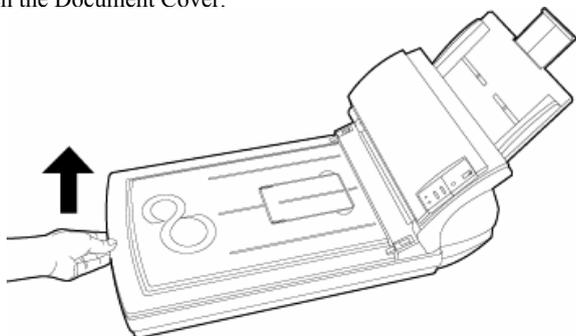
Cycle for cleaning is every 1,000 sheets. The scanner must be cleaned more frequently when the following documents are used.

- Documents of coated paper
- Documents with printed text or graphics covering almost the entire surface
- Chemically treated documents such as carbonless paper
- Documents containing a large amount of calcium carbonate
- Documents with Handwritten documents

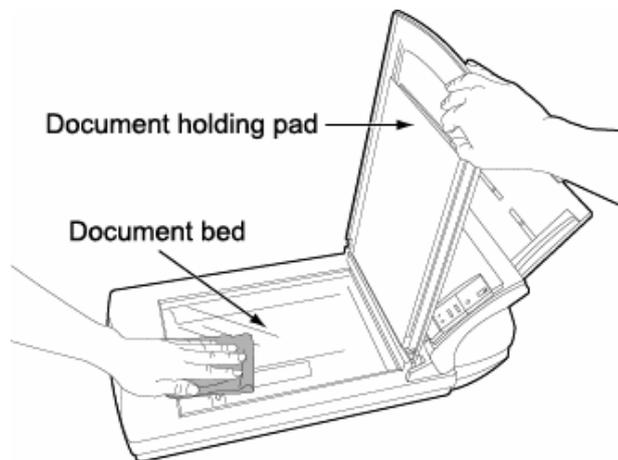
1-6-1 Cleaning the Flatbed

How to clean:

- (1) Open the Document Cover.



- (2) Clean the following locations using a soft, dry cloth or a cloth moistened with cleaning fluid (ethyl alcohol or isopropyl alcohol).



- Document holding pad
Wipe gently.

- Document bed
Wipe lightly.

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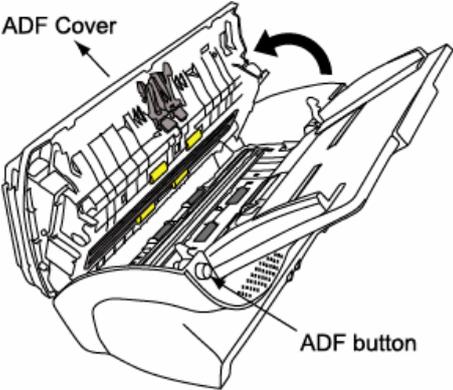
1-6-2 Cleaning the ADF

How to clean:

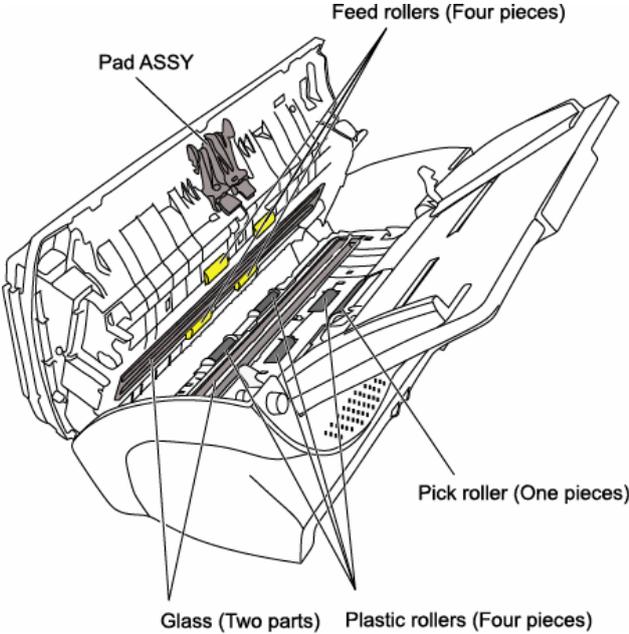
- (3) Open the ADF by pushing on the ADF button and turning the ADF cover to the front.

CAUTION

Be careful, the ADF cover may close and pinch your finger.



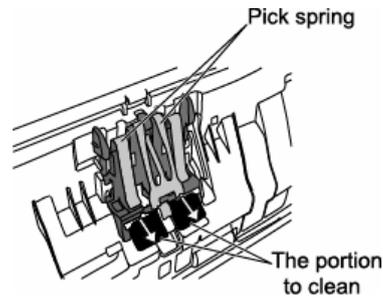
- (4) Clean the following locations with a soft, dry cloth or a cloth moistened with cleaning fluid (ethyl alcohol or isopropyl alcohol).



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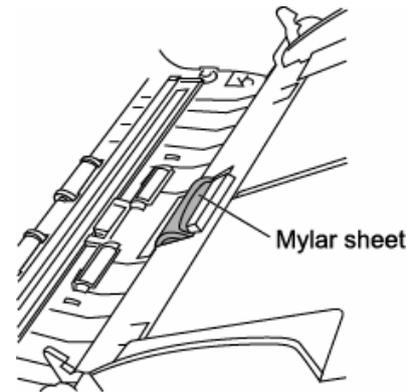
- Pad ASY

Clean the Pad ASSY (rubber surface) downwards (direction of arrow). Take care not to catch the pick springs to avoid bending.



- Pick roller

Lightly clean the Pick rollers taking care not to scratch the roller surfaces and the Mylar sheet. Take particular care in cleaning this roller as black debris on it adversely affects the pickup performance.



- Feed rollers

- 1) Open the ADF by pushing on the ADF button.

If you open the ADF cover when the indication of the Function No. Display is "P" or "0", the Feed rollers do not rotate even you perform the operation of step 2) below. So open the ADF cover when the indication is not "P" or "0".

- 2) Simultaneously hold down the **Send to** and **Scan** buttons on the operator panel. The Feed rollers start to rotate slowly.

⚠ CAUTION

All the feed rollers turn at the same time. When cleaning the Feed rollers positioned in the lower part of the ADF, be careful not to touch the other Feed rollers.

- 3) Hold a soft, dry cloth moistened with cleaning fluid against the surface of the rotating Feed rollers so that it lightly cleans the surface of the rollers. Take particular care when cleaning these rollers as black debris on these rollers affects document pick performance.

As a guideline, seven presses of the Send to and Scan buttons make the Feed rollers to rotate one full turn.

- Plastic roller

Clean lightly the surface of these rollers to avoid damaging it. Take particular care when cleaning these rollers as black debris on it affects document pick performance. Be careful not to damage the sponges beside the rollers.

- Glass

Clean lightly.

If the glass is dirty, vertical black streaks may appear in the scanned images.

- (3) Press down on the center of the ADF to return it to its original position until the ADF button locks.

Note: When the ADF has returned to its original position, make sure that it is completely closed. Paper jams or feeding errors may occur if the ADF is not closed completely.

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1-7 Replacing the Consumables

1-7-1 Consumables

The scanner has the following consumables which users need to replace at the following intervals when the screen on the right appears. To check the number of scanned documents, go to Maintenance mode (Section 5-1-6) or the Properties of [Scanners and Cameras] on the Control panel (Appendix A).

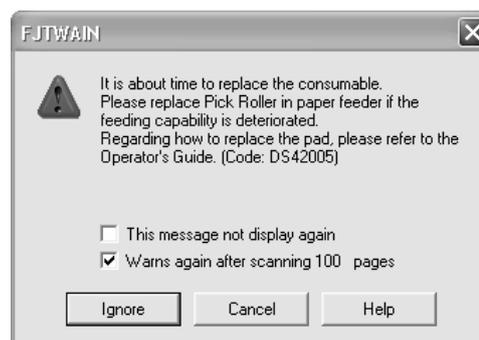


Table 1-7-1

No.	Part name	Specifications	Standard replacement cycle	How to check the number of scanned documents	How to replace
1	Pad ASSY	PA03289-0111	50,000 sheets or one year	See Section 5-1-6 .	See Section 1-7-2 .
2	Pick roller	PA03289-0001	100,000 sheets or one year		See Section 1-7-3 .

The replacement cycles above are rough guidelines for the case of using A4/Letter woodfree or wood containing paper 64g/m² (17lb). This cycle varies according to the type of the used paper and how frequently the scanner is used and cleaned.

CAUTION

The glass surface of the ADF glass becomes hot during the operation of the scanner. Before you start to clean inner parts of the scanner, turn off its power and unplug the AC Adapter from the outlet. Wait for at least 15 minutes. Do not turn off the scanner when you clean the Feed rollers.

1-7-2 Pad ASSY replacement

Refer to [Section 1-7-1](#) for the specification of the Pad ASSY.

(1) Remove any documents on the ADF paper chute (Chute Unit).

(2) Open the ADF by pushing the ADF button.

CAUTION

Be careful, the ADF cover may close and pinch your finger.

(3) Press the knobs on both end of the Pad ASSY, and pull the Pad ASSY upwards and towards you.

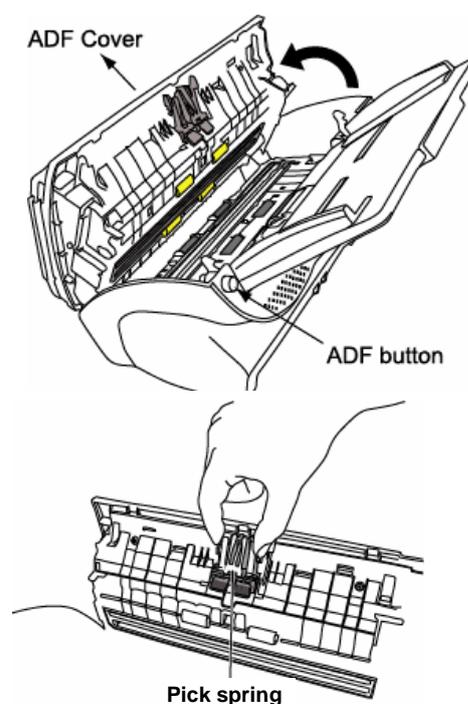
When doing this, take care not to catch the pick spring.

(4) Hold both ends of the new Pad ASSY and attach it to its installation location.

When doing this, take care not to catch the pick spring.

(5) Press down on the center of the ADF to return it into its original position and lock the ADF button.

(6) Reset the pad counter. (Refer to [Section 1-7-4](#))



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1-7-3 Pick roller replacement

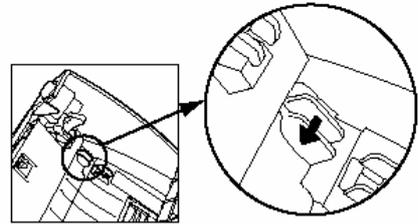
Refer to [Section 1-7-1](#) for the specification of the Pick roller.

- (1) Remove any documents on the ADF paper chute (Chute Unit) and remove the ADF paper chute (Chute Unit).
- (2) Open the Imprinter area if the optional Imprinter is installed. Open the ADF by pushing the ADF button.

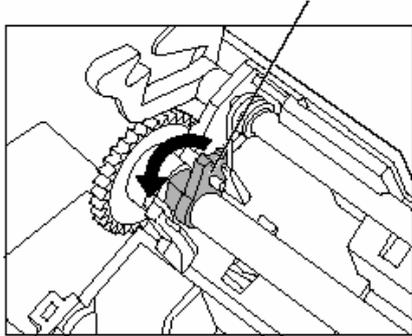
CAUTION

Be careful, the ADF cover may close and pinch your finger.

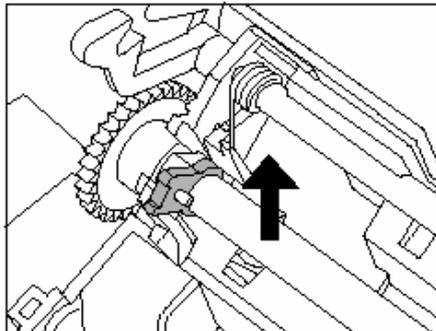
- (3) Grip the knobs on the sheet guide (Guide P ASSY) with your fingers, and lift it up to remove.
- (4) Rotate the Pick roller bushing in the direction of the arrow.



Pick roller bushing



- (5) Remove the Pick roller while lifting up in the direction of the arrow.

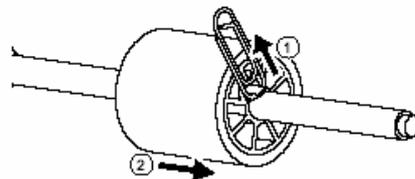
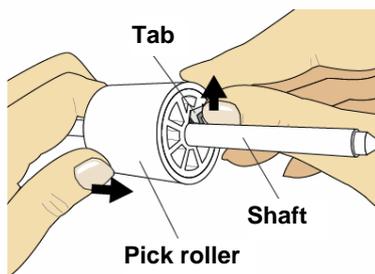


CAUTION

The Pick roller bushing is hard. Do not turn this bearing with your fingernails.

Use a paper clip for turning the roller bushing if you cannot rotate it with your finger.

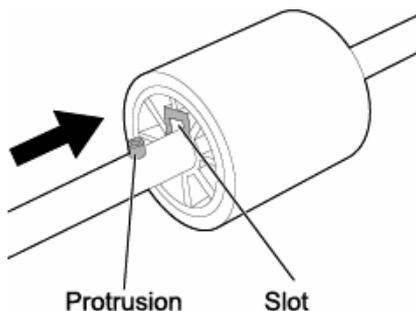
- (6) Remove the Pick roller from its shaft.



If you push up the pick roller tab using your fingernail, it may hurt or get chipped your fingernail. If you worry about that, you push up the pick roller tab using a paper grip.

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- (7) Attach the new Pick roller.
Insert the new Pick roller aligning the protrusion on the shaft with the slot for the screw in the Pick roller.



Note: Make sure that the Pick roller is completely attached. An incompletely attached Pick roller might cause document jams or other feed errors. When attaching the Pick roller, make sure that the roller clicks in to place.

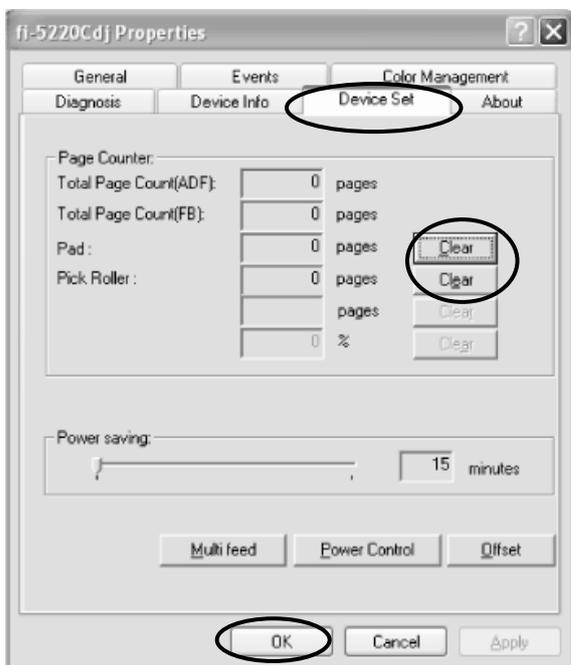
- (8) Attach the Pick roller to the scanner in reverse procedure for removing.
- (9) Press down the center of the ADF to return it to its original position and lock the ADF button and attach the ADF paper chute (Chute Unit).
- (10) Reset the Pick counter. (Refer to [Section 1-7-4.](#))

1-7-4 Resetting Consumable Counters

For Windows 98 / Windows Me / Windows 2000 / Windows XP (example)

Note: For Windows 95 / Windows NT 4.0, perform it on the FUJITSU Scanner Control Center.

- 1) When turning ON the power, check that the scanner is connected to your PC.
 - 2) Open the [Scanners and Cameras] from the control panel of your PC.
 - 3) Open the [Properties] of [fi-5220Cdj] from the [Scanners and Cameras].
 - 4) The [fi-5220Cdj Properties] dialog box appears.
 - 5) Click the “Device Set” tab.
- The following screen is displayed.



- 6) After clicking the [Clear] button beside “Pad” or “Pick Roller” in “Page Counter”, click the [OK] button.

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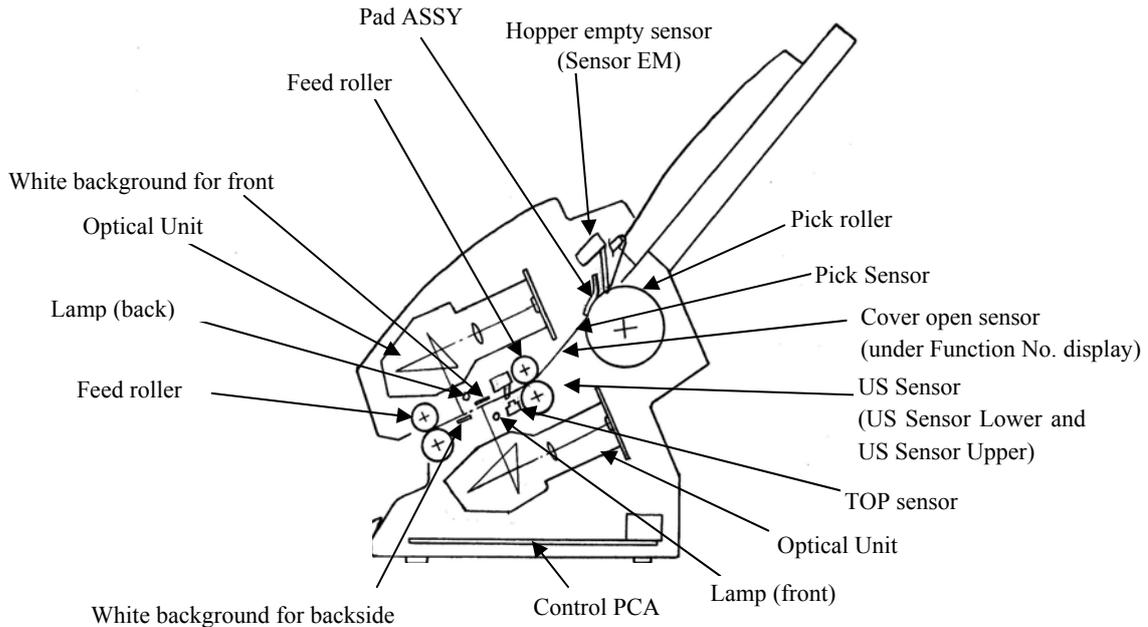
Chapter 2 Description of scanner operation

2-1 ADF Unit

(1) Paper separation

When scanning with the ADF, documents loaded on the ADF paper chute (Chute Unit) are separated respectively by the pick roller and Pad ASY and fed into the ADF. Separated documents are transported by the feed rollers at the speed that corresponds to specified reading resolution until they are ejected to the stacker.

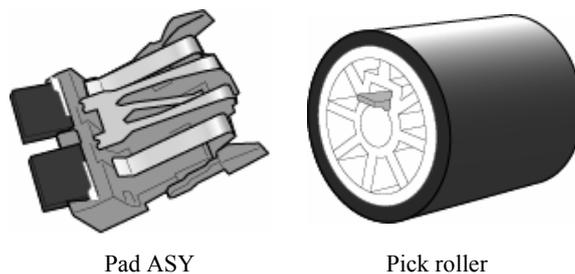
Paper feeding unit includes Hopper empty sensor (Sensor EM), TOP sensor, Multi feed sensor (US Sensor) and Cover open sensor.



(2) Consumables

The pick roller and Pad ASY are consumables and need to be replaced by a user. (Refer to [Section 1-7](#) for detail)

The scanner supports two consumable counters, pad counter and pick counter, which indicate the number of sheets that have been scanned so far. Users can check the counters from the driver screen or scanner built-in Maintenance mode, and reset the counter after replacing the consumables. (See [Section 5-1-6](#) for details.)



Pad ASY

Pick roller

(3) Drive unit

The pick roller and feed rollers are turned by the ADF Motor. The Pick roller rotation can be stopped by the electromagnetic Clutch during the feed rollers rotation. This can widen the gap between documents and extend the amount of overscan while overscanning.

The motor drive circuit and motor fuse are located in the Control PCA. If abnormal electric current runs through the motor drive circuit, the current is cut off by the motor fuse. The motor fuse of the ADF Motor is the same as that of the FB.

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2-2 Reading Station

(1) ADF optical system

Documents are set in the ADF paper chute (Chute Unit) facing front side down. The front side of a document is read by the Optical Unit inside the Base Unit, and the backside of a document is read by the Optical Unit inside the Upper Unit. These two Optical Units have the same parts number.

An image on a document is projected to a color CCD through lens and mirror system and converted to signals with 10 bit per pixel at 600 dpi resolution.

(2) FB optical system

When FB scanning is specified, a document set on the document bed is read by the Optical Unit of the Carrier unit, with the carrier unit moving in the direction of sub scanning.

The carrier unit also includes the Lamp and the Lamp Inverter to illuminate the document. The Optical Unit, Lamp and Lamp Inverter used in FB are the same type as those used in ADF.

(3) FB reading control

During initial processing immediately after power-on, the Carrier unit moves to home position (the opposite side of ADF). When FB scanning is specified, the scanner moves the Carrier unit to read the white reference in FB and adjust the gain of CCD amplifier. At that time, if the CCD output does not reach the standard level even after increasing the gain to the maximum level, an optical alarm occurs.

After successful gain adjustment, the scanner reads the specified length of the document while shifting the Carrier unit in the sub scanning direction at the speed that corresponds to the specified reading resolution. If abnormal electric current runs through the FB Motor, the current is cut off by the motor fuse (the same type as that used in ADF) in Control PCA.

(4) Light source

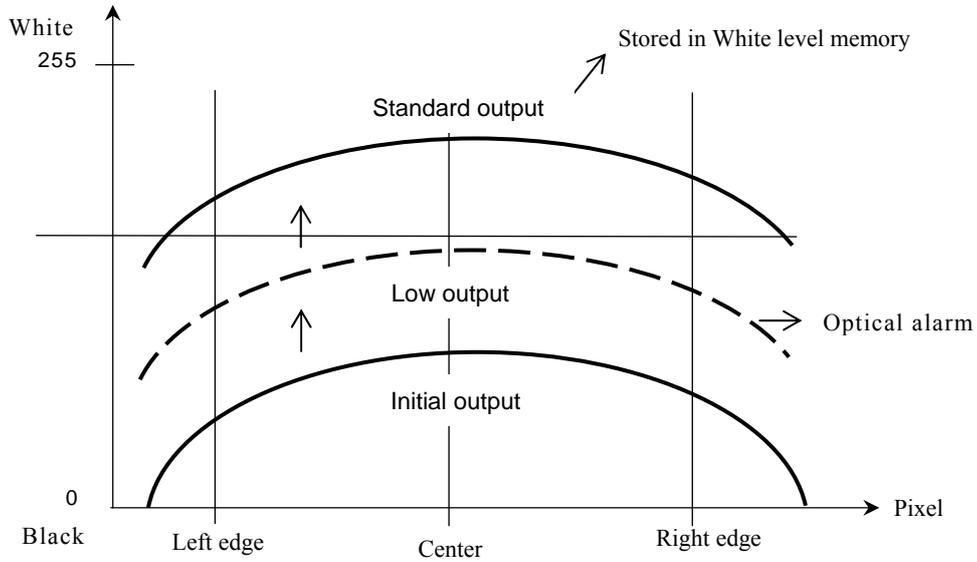
The scanner uses two lamps (Incandescent fluorescent lamp) which lights the scanning area of front and back side where the Optical Unit reads in order to get sufficient CCD output. The Lamp is turned ON or OFF by Lamp Inverter that is controlled by the Control PCA.

The life of Lamp is about 10000 hours, which means Lamp lasts during the life of device. So the Lamp is not a consumable.

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(5) Scan controller

Before scanning a document, the scanner reads white background of the reading position and adjusts the gain of CCD amplifier. If the CCD output does not reach a certain level after the gain adjustment, Optical alarm is issued.



When the gain adjustment finishes successfully, the scanner feeds the document to the reading position at the speed that corresponds to specified reading resolution. Then the leading edge of the document is detected by the TOP sensor in front of the reading position. After the document is fed from TOP sensor by some defined length for front and back side scanning (the length which determines sub-scanning offset), the scanner starts reading image. The scanner terminates scan operation when the length specified from the host is scanned (Fixed size scanning) or when the TOP sensor detects the trailing edge of a document (Page end detection scanning).

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2-3 Controller

(1) Control PCA

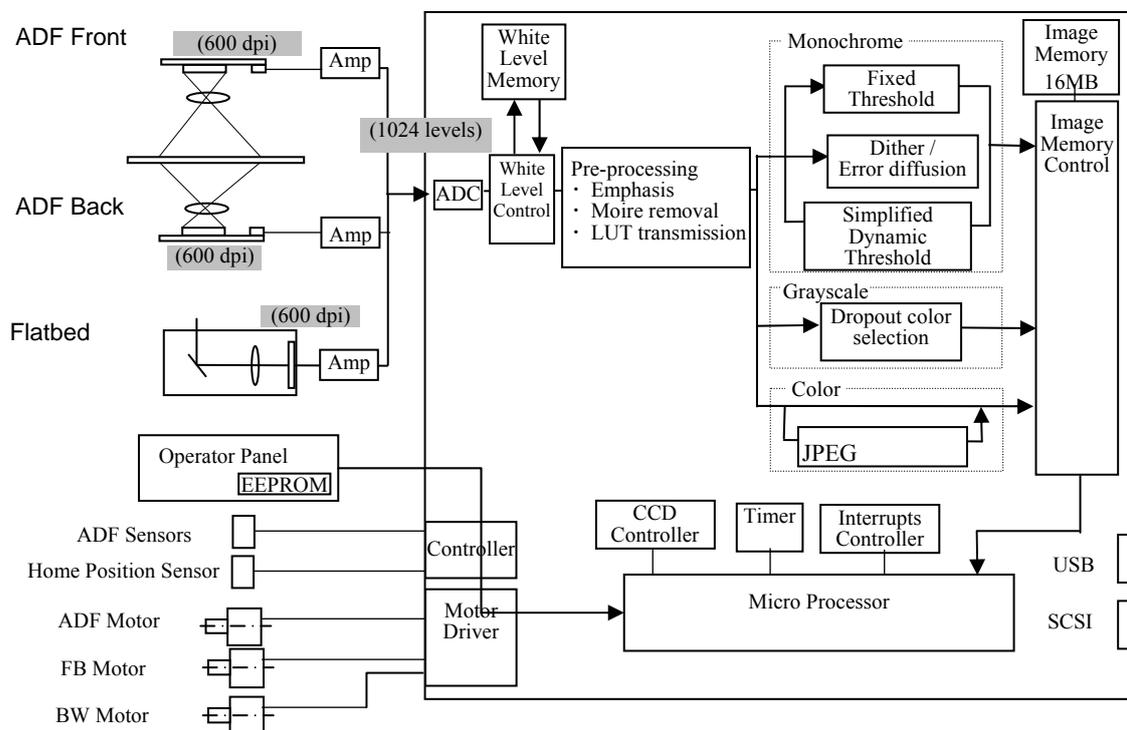
Control PCA controls the units shown in the figure below. It includes the following connectors and a switch.

- SCSI connector
- USB connector
- DC voltage input connector
- SCSI ID setting rotary switch

If both SCSI and USB cables are connected,

- SCSI is selected when selection phase is recognized first.
- USB is selected when H level VBUS signal is detected first.

The firmware can be updated through a SCSI/USB interface using firmware update tool.



(2) Panel PCA

The Panel PCA in operator panel includes not only the switch and operator panel described in [Section 1-1-3](#), but also EEPROM that records the information below. When replacing the Panel PCA with new one, you need to move all data stored in the EEPROM to the Control PCA, and then return the data from the Control PCA to the new Panel PCA.

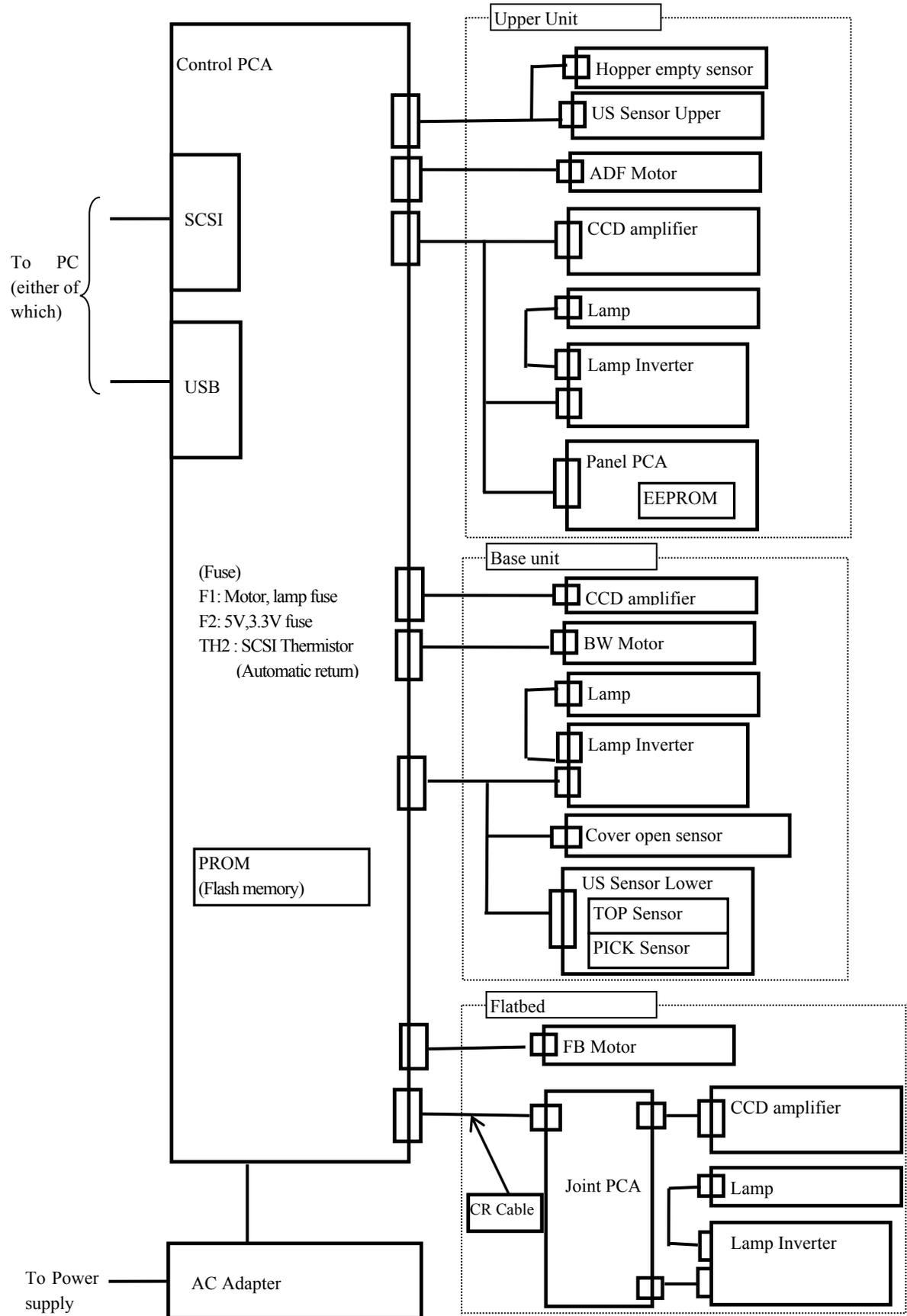
- Magnification correction value for main/sub scanning direction
- Offset correction value for main/sub scanning direction
- White level correction value
- Values of Pad counter and Pick counter
- First date of the scanner operation, ADF scanned number of documents, FB scanned number of documents

(3) Joint PCA

This is a PCA installed in carrier unit (a unit including Optical Unit, Lamp, Lamp Inverter) of flatbed and used to convert the connector interface among CR Cable, the cable from Optical Unit and Lamp Inverter.

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2-4 Electric Component Block Diagram



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Chapter 3 Troubleshooting

3-1 Self-diagnosis Function

3-1-1 Scanner status display and self-diagnostics at power-on

(1) Operator panel display sequence at power-on

The following display is shown during initial processing.

Function No. Display	Power LED	Description
	ON	Displays "8" without blinking. Immediately after power-on, scanner turns all the segments ON.

When the initial processing starts, the following display is shown.

Function No. Display	Power LED	Description
	ON	Displays "P" without blinking. It indicates scanner is currently in initial processing.

When the lamp intensity is getting close to the standard value, the following display is shown.

Function No. Display	Power LED	Description
	ON	Displays "0" without blinking. It indicates the lamp intensity is getting close to the standard value.

When the initial processing terminates properly, the following display is shown.

Function No. Display	Power LED	Description
	ON	Displays default Function No. without blinking. It indicates that scanner is in ready state.

The Function No. is incremented by 1 every time the Function button is pressed. After Function No. 9 is displayed, the number changes to "C" and then returns to "0".

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(2) Self-diagnostics

The scanner checks the following items at power-on and displays error or alarm if any.

No.	Check items		Error display		Remarks
			Scanner display	TWAIN display	
1	ROM sum check		F	None	
2	SPC check		Ed	None	
3	RAM, LSI check		Ec	None	
4	Image SDRAM check		E9	None	
5	EEPROM check		E7	None	
6	Mechanical initial check	Detects home position of Carrier unit (FB).	U0	The running system is abnormal. Please confirm the carrier lock has come off.	
		Ejects any documents on TOP sensor	None	None (*1)	
		Performs driving test for rollers if no sensor in the ADF detects any paper.	E4	See (*2)	
7	Motor fuse check		E4	See (*2)	
	SCSI fuse check		E8	None	

(*1): There is no error display immediately after power-on. The error "Paper jam" is displayed when the driver sends Reading command to the scanner.

(*2): Irregular status is detected in scanner. If this status recurs after power cycling, please give following Sense key and ASC code to your service provider.

If ASC code is the following, please confirm following status before power cycling?

- When ASC=0x580, confirm if the shipping lock (if any) is set at "Release" position.
- When ASC=0x680, clean the sheet guide (white part) in ADF.

(Code DS42001)

3-1-2 Online self-diagnostics**(1) Self-diagnostics when receiving Load Command**

The scanner checks the following items when receiving Load Command (to feed paper) and displays the result if any error or alarm is detected.

No.	Check items		Error display		Remarks
			Scanner display	TWAIN display	
1	Motor fuse check		E4	See (*1).	
2	Paper jam check		UI	"Paper jammed in ADF."	

(*1): Irregular status is detected in scanner. If this status recurs after power cycling, please give following Sense key and ASC code to your service provider.

If ASC code is the following, please confirm following status before power cycling?

- When ASC=0x580, confirm if the shipping lock (if any) is set at "Release" position.
- When ASC=0x680, clean the sheet guide (white part) in ADF.

(Code DS42001)

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(2) Self-diagnostics when receiving Read Command

The scanner checks the following items when receiving Read Command (to start scanning) and displays the result if any error or alarm is detected.

No.	Check items	Error display		Remarks
		Scanner display	TWAIN display	
1	Light intensity check (gain adjustment for CCD amplifier)	E1	See (*1).	
		E2	See (*1).	
		E3	See (*1).	
2	Motor fuse check	E4	See (*1).	
3	Paper jam check	U1	Paper jammed in ADF.	
4	Multi feed detection	U2	A multi feed is detected.	When multi feed is enabled.

(*1): Irregular status is detected in scanner. If this status recurs after power cycling, please give following Sense key and ASC code to your service provider.

If ASC code is the following, please confirm following status before power cycling?

- When ASC=0x580, confirm if the shipping lock (if any) is set at "Release" position.
- When ASC=0x680, clean the sheet guide (white part) in ADF.

(Code DS42001)

3-1-3 Self-diagnostics in Maintenance mode

The scanner checks the following items during maintenance mode #1, #2, #3 or #4 and displays the result if any error or alarm is detected.

No.	Check items	Maintenance mode			Error display		Remarks
		At power on	#1 *2	#2 ~ #4	Scanner display	TWAIN display	
1	ROM sum check	√			F	None	
2	RAM, LSI check	√			Ec	None	
3	Image SDRAM check	√			E9	None	
4	EEPROM check	√			E7	None	
5	Mechanical check Detects home position of Carrier unit (FB) Eject any documents on TOP sensor. Performs driving test for rollers if no sensor in the ADF detects any paper.	√			U0	None	
		√			None	None	
		√			E4	None	
6	5V and 3.3V fuse check (*3)	√			- (*1)	None	
	Motor fuse check	√	√		E4	None	
	SCSI fuse check	√			E8	None	
7	Light intensity check (gain adjustment for CCD amplifier)		√	√	E1	None	
			√	√	E2		
			√	√	E3		
8	Paper jam check		√		U1	None	

(*1): In this case, scanner does not power on.

(*2): Maintenance mode #1 does not detect multi feeding.

(*3): When 5V, 3.3V fuse is blown, the scanner does not turn on.

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3-2 Temporary Errors and Alarm Detection Algorithm

3-2-1 Temporary errors

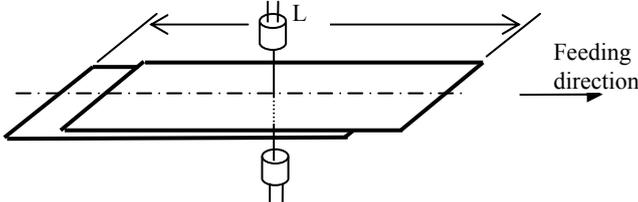
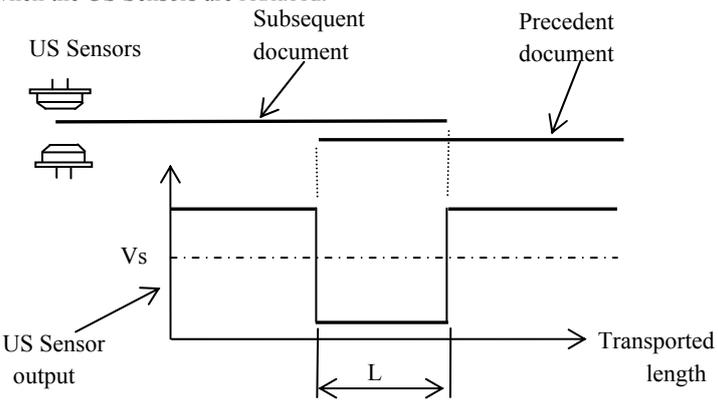
Temporary errors occur during scanning operation and can be remedied by an operator. The temporary errors are displayed on the PC screen through the driver and/or on the operator panel.

The display and detection algorithm of the temporary errors are described below.

(1) Temporary errors and detection algorithm

No.	Error display		Detection algorithm and action to recover						
	Scanner display	TWAIN display							
1	U0	The running system is abnormal. Please confirm the carrier lock has come off.	<p>Shipping lock confirmation error This error occurs when the scanner fails to detect home position of carrier unit at power on. Once CR initial processing is completed successfully after power on, this error is treated as a hardware error.</p> <p>How to recover: Slide the shipping lock to unlock.</p>						
2	U1	Paper jammed in the ADF (Code DS32002)	<p>Paper jam This error is detected when one of the followings occurs:</p> <ol style="list-style-type: none"> 1) A document does not reach the TOP sensor while the scanner has transported the document about 250 mm to pick. (The scanner performs retry operation.) 2) The trailing edge of a document does not reach the TOP sensor after the scanner transports the document by the length (L) below. (The document may have slipped on the rollers) <table border="1"> <tr> <td>Scan condition</td> <td>Transported length (L) before jam</td> </tr> <tr> <td>ADF fixed size scanning</td> <td>Approximately 450 mm</td> </tr> <tr> <td>Long paper scanning</td> <td>1.2 times of the specified value</td> </tr> </table> <p>How to recover: Remove the jammed document and close the ADF. When the error frequently occurs, refer to Section 3-3-13.</p>	Scan condition	Transported length (L) before jam	ADF fixed size scanning	Approximately 450 mm	Long paper scanning	1.2 times of the specified value
Scan condition	Transported length (L) before jam								
ADF fixed size scanning	Approximately 450 mm								
Long paper scanning	1.2 times of the specified value								
3	None	No paper on ADF paper chute or Hopper (Code DS32003)	<p>No papers on the ADF paper chute (Chute Unit) This error occurs when the Hopper empty sensor detects no paper loaded on the ADF paper chute (Chute Unit) at the receipt of a Feed command.</p> <p>How to recover: Load documents on the ADF paper chute (Chute Unit). When the error frequently occurs, replace Sensor EM by referring to Section 4-9-7.</p>						

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No.	Error display		Error detection algorithm and action to recover
	Scanner display	TWAIN display	
4	U2	The multi feed is detected. (Code DS32006)	<p>Multi feed</p> <p>Two methods are used to detect this error, either/both of which can be selected by the command. Both methods are set to OFF at default.</p> <p>1) Multi feed detection by paper length</p> <p>Using the TOP sensor, the scanner measures the length of the document transported for the first time after the hopper empty error. The measured length is used as a standard length to be compared with the length of subsequent documents to be scanned.</p> <p>If the second document is shorter than the first one, it means the multi feed occurred at the first document.</p> <p>The scanner detects a multi feed when the detected paper length is larger or smaller than the standard value by $\pm 10\text{mm}$, $\pm 15\text{mm}$ or $\pm 20\text{mm}$ which is specified by the command. Immediately after a multi feed error is detected, the feeding operation stops.</p>  <p style="text-align: center;">L - paper length $> \pm 10, \pm 15, \pm 20$ (selectable)</p> <p>2) Double feed detection by ultrasonic sensors (US Sensors)</p> <p>The ultrasonic sensors (US Sensor, see Section 2-1) are located above and below the document transporting section. The ultrasonic wave emitted from the transmitter goes through the document and is read at the receiver. When two sheets exist between the ultrasonic sensors, the output at the receiver is lower compared to when one sheet exists. When sensor output is consistently lower by 3mm than the specified slice level (V_s), a double feed is detected. (See Section 1-1-5 for document condition.)</p> <p>The specified slice level needs to be set by referring to Section 5-1-2 when the US Sensors are replaced.</p>  <p style="text-align: center;">$L > 3 \text{ mm: Double feed}$</p> <p>How to recover:</p> <p>Remove the document and close the ADF. When the error frequently occurs, refer to Section 3-3-16.</p>

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No.	Error display		Error detection algorithm and action to recover
	Scanner display	TWAIN display	
5	U4	The hopper is open. Close the ADF... (Code DS32005)	<p>ADF cover open</p> <p>This error occurs when the Cover open sensor detects that the ADF is not closed at the receipt of a Feed command.</p> <p>How to recover:</p> <p>Close the ADF. When the error frequently occurs, replace Base Unit by referring to Section 4-8.</p>

(2) Temporary error scanner display

When a temporary error occurs, the scanner displays the following:

Function No. Display	Power LED	Description (supplement)
	ON	<p>Displays “U” and the error No. (0~8) alternately.</p> <p>Example) When error “U0” occurs, the scanner displays the following:</p> <p>“U”→“0”</p>

When **Scan** or **Send to** button is pressed while the alarm is displayed, the scanner returns to the “Ready” display (Function number display).

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3-2-2 Alarms

Alarms require the maintenance conducted by an authorized service person. The following table shows the display and detection algorithm for alarms. The alarms are displayed on a PC screen and/or on the operator panel (Function No. Display).

(1) Alarms and their detection algorithm

No.	Error display		Error occurrence algorithm and action to recover	Related section
	Scanner display	TWAIN display		
1	E0	The running system is abnormal. Please confirm the carrier lock has come off.	<p>Carrier unit drive alarm After power-on, carrier unit (FB) moves to home position, where the carrier unit locates when home position sensor is turned ON. If the home position sensor is not turned ON after the carrier unit has moved pre-defined steps, this error occurs.</p> <p>Probable cause: Defective sensor, motor, or carrier belt.</p>	3-3-26
2	E1	Irregular status is detected in scanner... (Code DS42001)	<p>Optical alarm (FB) This alarm occurs if the gain adjustment of the CCD amplifier does not succeed at a READ command, or during scanning. (Refer to (3) in Section 2-2)</p> <p>Probable causes: - The optical system or white reference is dirty. - Defective Lamp or CCD. - Connector disconnected</p>	3-3-17
3	E2		<p>Optical alarm (E2: ADF front E3: ADF back) This alarm occurs if the gain adjustment of the CCD amplifier does not succeed at a READ command for the first document, or during scanning. (Refer to (5) in Section 2-2)</p>	
4	E3		<p>Probable causes: - The optical system or white reference is dirty. - Defective Lamp or CCD. - Connector disconnected - Defective Control PCA (E3)</p>	
5	E4	None	<p>Motor fuse blown This alarm occurs immediately after the motor fuse is blown. For maintenance, the whole unit of the Control PCA needs replacing because the fuse is soldered to the Control PCA.</p> <p>Probable causes: - A bit of metal material dropped on the Control PCA - Insulating material of motor cable damaged - Insulation corrupted inside the motor</p>	3-3-18
6	E6 (Note1)	None	<p>Operator panel alarm When replacing the Panel PCA, the EEPROM data shall be moved to the Control PCA and the information that no data exists on the Panel PCA is written to the EEPROM of the Panel PCA. If the scanner detects that there is no data in EEPROM during initial processing at power-on, this alarm occurs.</p> <p>Probable cause: The Panel PCA on which no data exists is used in the scanner.</p>	3-3-19

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No.	Error display		Error occurrence algorithm and action to recover	Related section
	Scanner display	TWAIN display		
7	E7 (Note1)	Irregular status is detected in scanner... (Code DS42001)	EEPROM alarm This alarm is detected by comparing data in EEPROM during initial processing immediately after power-on. Probable cause: Damaged EEPROM in Panel PCA.	3-3-20
8	E8 (Note1)	None	SCSI fuse blown This alarm is detected during initial processing immediately after power-on. Probable causes: - Defective SCSI cable - Other SCSI device malfunction	3-3-21
9	E9 (Note1)	Irregular status is detected in scanner... (Code DS42001)	Image memory alarm This alarm is detected by checking read/write and bus only while initial processing immediately after power-on. Probable causes: - Defective memory - Defective Control PCA	3-3-22
10	Ec	None	RAM alarm This alarm is detected by checking read/write and bus. Probable cause: - Defective Control PCA	3-3-23
11	Ed	None	SPC alarm This alarm is detected by checking read/write and bus. Probable cause: - Defective Control PCA	3-3-24
12	EF	Background changeover unit failure	Background changeover unit failure This is detected in initial checking at power on. Probable causes: - Defective Control PCA - Insulation material damage of BW Motor cable or the damage of the wire in the motor.	3-3-27
13	Non	Insufficient buffer memory size of scanner device for current scanning parameters... (Code DS00008)	Image transfer error This alarm is detected by the driver at malfunctioning operation in the circuit or memory during scanning. Probable cause: - Defective Control PCA	3-3-24

Note 1) The alarm E6 ~ E9 is displayed 3 times before "O" during the initial processing after power-on. When more than 2 of these errors occur simultaneously, they are displayed in the order of the priority described below:

E6 > E7 > E8 > E9
High priority ←————→ Low priority

The scanner can perform scan operation even if these alarms occur, but it may not be the same operation as usual. For instance, when EEPROM is damaged, the document is scanned by default settings, which means the settings of magnification, offset and white level may not be optimum for the document to be scanned. When image memory is damaged, irregular image may appear which can be easily detected by visual check.

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No	Error display		Error occurrence algorithm and action to recover	Related section
	Scanner display	TWAIN display		
14	None	(See * below) SenseKey=0x5 ASC=0x20	Invalid command Irregular operation of the driver is required. Probable causes: See ** below.	3-3-28
15	None	(See * below) SenseKey=0x5 ASC=0x24	Invalid CDB field Irregular operation of the driver is required. Probable causes: See ** below.	
16	None	(See * below) SenseKey=0x5 ASC=0x25	Unsupported logical unit (LUN) Irregular operation of the driver is required. Probable causes: See ** below.	
17	None	(See * below) SenseKey=0x5 ASC=0x26	Invalid field parameter list Irregular operation of the driver is required. Probable causes: See ** below.	
18	None	(See * below) SenseKey=0x5 ASC=0x2C	Command sequence error Irregular operation of the driver is required. Probable causes: See ** below.	
19	None	(See * below) SenseKey=0x5 ASC=0x22C	Irregular window combination (Main window not defined) Irregular operation of the driver is required. Probable causes: See ** below.	
20	None	Specified image scanner is being used.	Unit Attention This alarm is detected by the driver. Probable cause: The image scanner is being used by the other application or TWAIN driver booted twice.	-
21	None	An input-output error has occurred in the image scanner.	Message error This alarm is detected by the driver. Probable causes: - Image scanner failure (during scanning) - Abnormal response from SCSI or USB interface - Connection between PC and scanner is not correct (Cable connection, etc.) - Does not work with SCSI card - Miss-communication between PC and scanner - Defective Control PCA	-
22	None	An input-output error has occurred in the image scanner.	Select/Reselect Failure This alarm is detected by the driver. Probable causes: - Image scanner failure (during scanning) - Abnormal response from SCSI or USB interface - Connection between PC and scanner is not correct (Cable connection, etc.) - Does not work with SCSI card - Miss-communication between PC and scanner - Defective Control PCA	-

* Anomaly in the command for communicating with the scanner.

Check the scan area setting. If the setting is correct, turn the scanner off, disconnect the interface cable and firmly reconnect it. If the scanner does not return to its normal functioning state, please contact the dealer where you purchased the scanner or an authorized FUJITSU scanner service provider and inform the code displayed below.

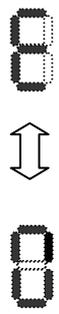
** Probable causes: - Connection between PC and scanner is not correct. (Cable connection etc.)
- Scanner does not work with USB Card.
- Defective Control PCA

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No	Error display		Error occurrence algorithm and action to recover	Related section
	Scanner display	TWAIN display		
23	None	An input-output error has occurred in the image scanner.	SCSI parity error This alarm is detected by the driver. Probable causes: <ul style="list-style-type: none"> - Image scanner failure (during scanning) - Abnormal response from SCSI or USB interface - Connection between PC and scanner is not correct (Cable connection, etc.) - Does not work with SCSI card - Miss-communication between PC and scanner - Defective Control PCA 	-
24	None	An input-output error has occurred in the image scanner.	Initiator Detected Error Message Received This alarm is detected by the driver. Probable causes: <ul style="list-style-type: none"> - Image scanner failure (during scanning) - Abnormal response from SCSI or USB interface - Connection between PC and scanner is not correct (Cable connection, etc.) - Does not work with SCSI card - Miss-communication between PC and scanner - Defective Control PCA 	-
25	None	An input-output error has occurred in the image scanner.	Overlapped Command Attempted This alarm is detected by the driver. Probable causes: <ul style="list-style-type: none"> - Image scanner failure (during scanning) - Abnormal response from SCSI or USB interface - Connection between PC and scanner is not correct (Cable connection, etc.) - Does not work with SCSI card - Miss-communication between PC and scanner - Defective Control PCA 	-

(2) Alarm displayed on the operator panel

When an alarm occurs, the scanner displays the following on the operator panel:

Function No. Display	Power LED	Description (supplement)
	ON	Displays "E" and one of the alarms (0 ~ 9) alternately. The example shown in the left column is the case of Alarm "E0". The display sequence is: "E" → "0" The interval of changing the display is approximately 1 second.

When **Scan** or **Send to** button is pressed while the alarm is displayed, the scanner returns to the "Ready" display (Function No. display).

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3-2-3 Flash memory status display

The display and detection algorithm of the flash memory status are described below.

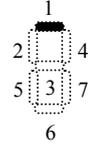
(1) Error status display

The following display appears when a check sum error occurs:

Function No. Display	Power LED	Description (supplement)
	ON	"F" is displayed without blinking on the Function No. Display.

(2) Flash memory (firmware) update display

The following display appears while the firmware is being updated.

Function No. Display	Power LED	Description (supplement)
	ON	<p>The Function No. Display changes in the order below.</p> <p>5) Lights 1 → 2 → 3 → 4 6) Goes out 1 → 2 → 3 → 4 7) Lights 3 → 5 → 6 → 7 8) Goes out 3 → 5 → 6 → 7</p> <p>The step (1) ~ (4) is repeated. The interval of changing the display is approximately 0.5 seconds.</p>

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3-3 Troubleshooting

When a temporary error or an alarm occurs, find the troubleshooting procedure from the list in this section and go to the related section for maintenance. Before starting the troubleshooting, get the following information from your customer to understand whether the error is scanner-related or system-related.

- Is the scanner operated correctly?
 - Are the fault symptoms reproducible or persistent?
- (Check if the target scanner causes the same error under other systems.)

NOTICE

The troubleshooting should be conducted from item number 1 to the last item number in a table. Continue the troubleshooting until the error is removed.

Following lists the case of troubleshooting described later in this section.

Error category	Error description	Related section	Remarks
Device	Scanner does not turn ON. (Display of the operator panel goes out)	3-3-1	
	Scanning does not start.	3-3-2	
	Scanned image is distorted.	3-3-3	
Image	Resolution or gradation of scanned image is unsatisfactory.	3-3-4	
	Too much jitter on scanned image with FB scanning	3-3-5	
	Scanned image is misaligned with FB scanning	3-3-6	
	Scan magnification factor abnormal with FB scanning	3-3-7	
	Too much jitter on scanned image with ADF scanning	3-3-8	
	Scanned image is misaligned with ADF scanning	3-3-9	
	Scan magnification factor abnormal with ADF scanning	3-3-10	
	Vertical streaks appear in scanned image	3-3-11	
Temporary error	When calibrating white of scanned image	3-3-12	
	Frequent "U1: Paper jam" error	3-3-13	
	Error detection of "No paper on the ADF paper chute (Chute Unit)"	3-3-14	
	Error detection of "U4: ADF cover open"	3-3-15	
Alarm	Frequent "U2: Multi feed" error	3-3-16	
	"E1, E2 or E3: Optical alarm"	3-3-17	
	"E4: Motor fuse blown"	3-3-18	
	"E6: Operator panel alarm"	3-3-19	
	"E7: EEPROM alarm"	3-3-20	
	"E8: SCSI fuse blown"	3-3-21	
	"E9: Image memory alarm"	3-3-22	
	"Ec: RAM alarm / Image transfer error"	3-3-23	
	"Ed: SPC alarm"	3-3-24	
	"EF: Background changeover unit failure"	3-3-27	
	"F: ROM sum check alarm"	3-3-25	
	When "U0: Shipping lock error" or "E0": Carrier unit drive alarm" frequently occurs	3-3-26	
	Driver error	3-3-28	

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3-3-1 Scanner does not turn ON (No display on the operator panel)

Table 3-3-1

Item No.	Check items	How/where to check
1	Does the same symptom occur after turning OFF and ON the scanner?	Press power button of the scanner for more than 2 seconds to turn it OFF, and after more than 2 seconds elapse, press the power button to turn the scanner ON.
	Are the AC cable and AC Adapter correctly connected?	---
2	Replace the AC cable and AC Adapter and see if the error is resolved.	---
3	Replace Panel PCA and see if the error is resolved.	Refer to Section 4-9-1 .
4	Replace Control PCA and see if the error is resolved.	Refer to Section 4-11 .

3-3-2 Scanning does not start

Table 3-3-2

Item No.	Check items	How/where to check
1	Does the same symptom appear when turning the scanner ON again?	Press power button of the scanner for more than 2 seconds to turn it OFF, and after more than 2 seconds elapse, press the power button to turn the scanner ON.
2	Check the items listed in the right column.	<ul style="list-style-type: none"> • Are the AC cable and AC Adapter correctly connected? • Is there documents loaded on ADF paper chute (Chute Unit)? • Is ADF cover completely closed? • Is interface cable correctly connected? • Is SCSI ID correctly set? • If any temporary error or alarm is indicated, follow the corresponding troubleshooting.

3-3-3 Scanned image is distorted

Due to loose connection of connectors, cut wire in cables or defective parts, scanned image may have regular or random pattern distortion on it.

Table 3-3-3

Item No.	Check items	How/where to check
1	Check the items listed in the right column.	<ul style="list-style-type: none"> • Is interface cable correctly connected? • If any temporary error or alarm is indicated, follow the corresponding troubleshooting.
2	Are the cables between Control PCA and Optical Unit damaged? Or are the connectors connected correctly?	ADF front scanning: Refer to Section 4-10-6 for checking. ADF back scanning: Refer to Section 4-9-4 for checking. FB scanning: Refer to Section 4-12-3 to see if CR Cable is damaged.
3	Replace Optical Unit and see if the error is resolved.	ADF front scanning: Refer to Section 4-10-6 . ADF back scanning: Refer to Section 4-9-4 . FB scanning: Refer to Section 4-12-6 .
4	Replace Control PCA and see if the error is resolved.	Refer to Section 4-11 .

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3-3-4 Resolution or gradation of scanned image is unsatisfactory

Table 3-3-4

Item No.	Check items	How/where to check
1	Check the items listed in the right column.	<ul style="list-style-type: none"> Does the document satisfy the paper specifications described in Section 1-1-4? Are the scan settings correctly specified for the application software used? Is interface cable correctly connected? If any temporary error or alarm is indicated, follow the corresponding troubleshooting.
2	Clean feed rollers and plastic roller and check whether the error is removed.	Refer to Section 1-6-2 .
3	Is the Optical Unit or Lamp dirty? Are the cables damaged? Or are the connectors connected correctly?	ADF front scanning: Refer to Section 4-3-1 for cleaning and checking. ADF back scanning: Refer to Section 4-3-3 for cleaning and checking. FB scanning: Refer to Section 4-3-5 for cleaning and checking.
4	Is the Optical Unit for this scanner installed?	ADF front scanning: Refer to Section 4-10-6 for removal. ADF back scanning: Refer to Section 4-9-4 for removal. FB scanning: Refer to Section 4-12-6 for removal.
5	Replace Optical Unit and see if the error is resolved.	ADF front scanning: Refer to Section 4-10-6 . ADF back scanning: Refer to Section 4-9-4 . FB scanning: Refer to Section 4-12-6 .
6	Replace Control PCA and see if the error is resolved.	Refer to Section 4-11 .

3-3-5 Too much jitter on scanned image with FB scanning

The following shows the sample of scanned image when "Jitter" error occurs. This error occurs when the carrier unit does not move smoothly.

Scanned image with jitter

ABCDEFG

Normal scanned image

ABCDEFG

Table 3-3-5

Item No.	Check items	How/where to check
1	Check the items listed in the right column.	<ul style="list-style-type: none"> Any shock given to the scanner during operation? Is the scanner placed on a level surface?
2	Does any foreign object get inside and prevent Carrier unit from moving?	Remove FB cover for checking by referring to procedure (1) ~ (5) in Section 4-12-2 .
3	Is CR belt tension loose?	Refer to a note of procedure (2) in Section 4-5 for checking.
4	Replace FB Motor and see if the error is resolved.	Refer to Section 4-12-7 for checking.
5	Replace Control PCA and see if the error is resolved.	Refer to Section 4-11 .

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3-3-6 Scanned image is misaligned with FB scanning

Table 3-3-6

Item No.	Check items	How/where to check
1	Check the items listed in the right column.	<ul style="list-style-type: none"> Any shock given to the scanner during operation? Is the scanner placed on a level surface? Are the scan settings correct for the application software used?
2	Adjust the offset by Maintenance mode.	Refer to Section 5-1-4 .
3	Is FB cover installed correctly?	Refer to procedure (1) ~ (5) in Section 4-12-2 .
4	Is Optical Unit installed correctly in FB?	Refer to Section 4-12-6 .
5	Replace Optical Unit in FB and see if the error is resolved.	Refer to Section 4-12-6 .

3-3-7 Scan magnification factor abnormal with FB scanning

Table 3-3-7

Item No.	Check items	How/where to check
1	Check the items listed in the right column.	<ul style="list-style-type: none"> Any shock given to the scanner during operation? Is the scanner placed on a level surface? Are the scan settings correct for the application software used?
2	The abnormal magnification occurs horizontally (main scanning direction) or vertically (sub scanning direction)?	Main scanning direction: Go to Item No.3. Sub scanning direction Go to Item No.7.
3	Adjust the magnification by Maintenance mode.	Refer to Section 5-1-3 .
4	Does any foreign object get inside and prevent Carrier unit from moving?	Remove FB cover for checking by referring to procedure (1) ~ (5) in Section 4-12-2 .
5	Is CR belt tension loose?	Refer to a notice of (2) in Section 4-5 for checking.
6	Replace FB Motor and see if the error is resolved.	Refer to Section 4-12-7 . If FB Motor is OK, go to item No. 9.
7	Is Optical Unit installed in FB correctly?	Refer to Section 4-12-6 .
8	Replace the Optical Unit and see if the error is resolved.	Refer to Section 4-12-6 .
9	Replace Control PCA and see if the error is resolved.	Refer to Section 4-11 .

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3-3-8 Too much jitter on scanned image with ADF scanning

The following shows the sample of scanned image when “Jitter” error occurs. This error occurs when the ADF feed roller does not transport the document smoothly.

Scanned image with jitter

ABCDEFGFG

Normal scanned image

ABCDEFGFG

Table 3-3-8

Item No.	Check items	How/where to check
1	Does the document satisfy the paper specification?	Refer to Section 1-1-4 .
2	Clean feed rollers and plastic roller and see if the error is resolved.	Refer to Section 1-6-2 .
3	Replace Pick roller and Pad ASY and see if the error is resolved.	Check the consumable counter from the TWAIN driver screen or in the built-in Maintenance mode. When the counter exceeds the values shown in Section 1-7-1 , replace Pick roller or Pad ASY.
4	Check if the belt tension is appropriate, and if the Guide A ASSY, Guide P ASSY (Sheet guide), Rear cover, and Upper cover are installed correctly.	Refer to Section 4-9-3 for belt tension, 4-10-1 for Guide A ASSY, 4-8 for Guide P ASSY (Sheet guide) and Rear cover, 4-9-2 for Upper cover.
5	Are the cables between Control PCA and ADF Motor damaged? Or are the connectors connected correctly?	Refer to Section 4-9-3 .
6	Replace ADF Motor and see if the error is resolved.	Refer to Section 4-9-3 .
7	Replace Upper Unit and see if the error is resolved.	Refer to Section 4-8 .
8	Replace Base Unit and see if the error is resolved.	Refer to Section 4-8 .

3-3-9 Scanned image is misaligned with ADF scanning

Table 3-3-9

Item No.	Check items	How/where to check
1	Check the items listed in the right column.	<ul style="list-style-type: none"> Does the document satisfy the paper specifications described in Section 1-1-4? Are the scan settings correct for the application software used?
2	Clean feed rollers and plastic roller and see if the error is resolved.	Refer to Section 1-6-2 .
3	Adjust the offset by Maintenance mode.	Refer to Section 5-1-4 .
4	Is Optical Unit installed correctly?	ADF front: Refer to Section 4-10-6 . ADF back: Refer to Section 4-9-4 .
5	When the backside image is misaligned, replace Upper Unit and see whether the error is resolved.	Refer to Section 4-8 .
6	When the front side image is misaligned, replace Base Unit and see whether the error is resolved.	Refer to Section 4-8 .

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3-3-10 Scan magnification factor abnormal with ADF scanning

Table 3-3-10

Item No.	Check items	How/where to check
1	Check the items listed in the right column.	<ul style="list-style-type: none"> Are the scan settings correct for the application software used?
2	Adjust the magnification by Maintenance mode #2.	Refer to Section 5-1-3 . When main scanning magnification is abnormal: Go to Item No.3 When sub scanning magnification is abnormal: Go to Item No.7
3	Clean feed rollers and plastic roller and see if the error is resolved.	Refer to Section 1-6-2 .
4	Does any foreign object get inside Upper Unit and disturb transporting operation by feed rollers?	Open the ADF and check Upper Unit gear.
5	Is ADF Motor belt loose?	Refer to Section 4-9-3 .
6	Replace ADF Motor and see whether the error is resolved.	Refer to Section 4-9-3 .
7	Is Optical Unit installed correctly?	ADF (front) scanning: Refer to Section 4-10-6 .
8	Replace Optical Unit and see whether the error is resolved.	ADF (back) scanning: Refer to Section 4-9-4 .

3-3-11 Vertical streaks appear in scanned image

Table 3-3-11

Item No.	Check items	How/where to check
1	Check the items listed in the right column.	<ul style="list-style-type: none"> Are the scan settings correctly specified for the application software used? Is interface cable correctly connected?
2	Clean glass in the ADF and see if the error is resolved.	Refer to Section 1-6-2 .
3	When the error occurs on ADF front, clean inside of the glass of Upper Unit ASSY. 06 When the error occurs on ADF back, clean inside of the glass of Dust Cover ASSY.	Refer to Section 4-3-4 for cleaning Upper Unit ASSY. 06 Refer to Section 4-3-2 for cleaning Dust Cover ASSY.
4	Is Optical Unit dirty? Are cables damaged? Are connectors connected correctly?	ADF front: Refer to Section 4-3-1 for cleaning and checking. ADF back: Refer to Section 4-3-3 for cleaning and checking. FB: Refer to Section 4-3-5 for cleaning and checking.
5	Replace Optical Unit and see if the error is resolved.	ADF front: Refer to Section 4-10-6 . ADF back: Refer to Section 4-9-4 . FB: Refer to Section 4-12-6 .
6	Replace Control PCA and see if the error is resolved.	Refer to Section 4-11 .

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3-3-12 When calibrating white of scanned image

Table 3-3-12

Item No.	Check items	How/where to check
1	Check the items listed in the right column.	<ul style="list-style-type: none"> Are the scan settings correct for the application software used? Is the white reference in the ADF dirty?
2	Conduct the white adjustment by Maintenance mode.	Refer to Section 5-1-5 .

3-3-13 Frequent “U1: Paper jam” error

Table 3-3-13

Item No.	Check items	How/where to check
1	Do the documents satisfy paper specification?	Refer to Section 1-1-4 .
2	Have the documents been jogged?	<ul style="list-style-type: none"> Align the edge of documents for stable paper feeding. Remove documents with crease or dog-ear. Scanning different width of documents may cause skew and result in paper jam.
3	Clean feed rollers and plastic roller and see if the error is resolved.	Refer to Section 1-6-2 .
4	Replace Pick roller and Pad ASY and see if the error is resolved.	Check the consumable counter from the TWAIN driver screen or from the built-in Maintenance mode (Section 5-1-6). When the counter exceeds the values shown in Section 1-7-1 , replace Pick roller or Pad ASSY.
5	Is the Pick roller rotating?	Refer to Section 5-1-2 for checking. If the Pick roller is not rotating, check the clutch cable connection.
6	Check the performance of TOP sensor.	Refer to Section 5-1-2 for checking.
7	Is ADF Cover open sensor malfunctioning?	Refer to Section 5-1-2 for checking.
8	Replace Control PCA and see if the error is resolved.	Refer to Section 4-11 .

3-3-14 Error detection of “No paper on the ADF paper chute (Chute Unit)”

Table 3-3-14

Item No.	Check items	How/where to check
1	Does the same symptom occur after turning OFF and ON the scanner?	Press power button of the scanner for more than 2 seconds to turn it OFF, and after more than 2 seconds elapse, press the power button to turn the scanner ON.
2	Is there a slip of paper left near Hopper empty sensor?	Open the ADF and check inside visually.
3	Check the performance of Hopper empty sensor.	Conduct Maintenance mode (Section 5-1-2) to see if the sensor works properly. If the error still occurs, confirm that the cable is correctly connected then replace the Sensor EM. (Refer to Section 4-9-7 .)

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3-3-15 Error detection of “U4: ADF cover open”

Table 3-3-15

Item No.	Check items	How/where to check
1	Does the same symptom occur after turning OFF and ON the scanner?	Press power button of the scanner for more than 2 seconds to turn it OFF, and after more than 2 seconds elapse, press the power button to turn the scanner ON.
2	Is there a slip of paper left near Cover open sensor?	Open the ADF and check inside visually.
3	Check the performance of Cover open sensor.	Conduct Maintenance mode (refer to Section 5-1-2) to see if the sensor works properly. If the error still occurs, confirm that the cable is correctly connected. If the sensor is damaged, replace the Base Unit (Section 4-8).

3-3-16 Frequent “U2: multi feed” error

Table 3-3-16

Item No.	Check items	How/where to check
1	Do the documents satisfy paper specification?	Refer to Section 1-1-4 and 1-1-5 for paper specification, paying attention to the following points: <ul style="list-style-type: none"> • Is multi feed error detected by paper length when scanning documents with different length? • Is there perforation in the center of documents?
2	Clean ADF unit.	Refer to Section 1-6-2 for cleaning cycle and method. Clean pick roller, Pad ASSY and around US Sensor with care.
3	Replace Pick roller and Pad ASY and see if the error is resolved.	Check the consumable counter from the TWAIN driver screen or from the built-in Maintenance mode (Section 5-1-6). When the counter exceeds the values shown in Section 1-7-1 , replace Pick roller or Pad ASY. If the error still occurs, confirm that the cable is correctly connected then replace the sensor. (Refer to Section 4-9-6, 4-10-3.)

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3-3-17 “E1, E2 or E3: Optical alarm”

Table 3-3-17

Item No.	Check items	How/where to check
1	Does the same symptom occur after turning OFF and ON the scanner?	Press power button of the scanner for more than 2 seconds to turn it OFF, and after more than 2 seconds elapse, press the power button to turn the scanner ON.
2	Is the white reference in the reading position dirty?	Open the ADF and clean the white reference and the glass. (Refer to Section 1-6-2.)
3	Is the Lamp ON? Are the cables damaged? Are the connectors connected correctly?	Disconnect SCSI cable and turn the scanner ON. Open the ADF and press Cover open sensor to see if the Lamp lights. If not, the error is caused by the defective Lamp.
4	Is the Optical Unit dirty? Are the cables damaged? Are the connectors connected correctly?	E1 (FB): Refer to Section 4-3-5 for cleaning and checking. Refer to Section 4-12-3 to see if CR Cable is damaged. E2 (ADF front): Refer to Section 4-3-1 for cleaning and checking. E3 (ADF back): Refer to Section 4-3-3 for cleaning and checking.
5	When the error is E2 (ADF front), check if inside of the glass of Dust cover is dirty.	Clean inside of the glass of the dust cover by following the procedure described in Section 4-3-2.
6	When the error is E3 (ADF back), check if inside of the glass of Upper Unit ASSY is dirty.	Clean inside of the glass of the Upper Unit ASSY by following the procedure described in Section 4-3-4.
7	Replace Optical Unit and see if the error is resolved.	E1 (FB): Refer to Section 4-12-6. E2 (ADF front): Refer to Section 4-10-6. E3 (ADF back): Refer to Section 4-9-4.

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3-3-18 “E4: Motor fuse blown”

Table 3-3-18

Item No.	Check items	How/where to check																						
1	Does the same symptom occur after turning OFF and ON the scanner?	Press power button of the scanner for more than 2 seconds to turn it OFF, and after more than 2 seconds elapse, press the power button to turn the scanner ON.																						
2	Does any foreign object get inside the Control PCA?	Take out the Control PCA for checking (Refer to Section 4-11).																						
3	Are the cables between Control PCA and the ADF Motor damaged? Or are the connectors connected correctly?	Refer to Section 4-9-3 for checking the cable.																						
4	Is the coil resistance of the motor normal?	<p>Remove the motor cable to check the coil resistance between the following pins of the motor.</p> <p>ADF Motor</p> <table> <tr> <td>(5)Black-(1)Red, (5)Black-(2)Yellow</td> <td>approx.4.7 Ω</td> </tr> <tr> <td>(6)White-(3)Orange, (6)White-(4)Blue</td> <td>approx.4.7 Ω</td> </tr> <tr> <td>(1)Red-(2)Yellow, (3)Orange-(4)Blue</td> <td>approx.9.4 Ω</td> </tr> <tr> <td>Other matches</td> <td>Infinity</td> </tr> </table> <p>FB Motor</p> <table> <tr> <td>(5)Black-(1)Red, (5)Black-(2)Yellow</td> <td>approx.8.0 Ω ±10%</td> </tr> <tr> <td>(6)White-(3)Orange, (6)White-(4)Blue</td> <td>approx.8.0 Ω ±10%</td> </tr> <tr> <td>(1)Red-(2)Yellow, (3)Orange-(4)Blue</td> <td>approx.16.0 Ω ±10%</td> </tr> <tr> <td>Other matches</td> <td>Infinity</td> </tr> </table> <p>BW Motor</p> <table> <tr> <td>(1)Black-(2)Brown</td> <td>approx.30 Ω ±10%</td> </tr> <tr> <td>(3)Yellow-(4)Orange</td> <td>approx.30 Ω ±10%</td> </tr> <tr> <td>Other matches</td> <td>Infinity</td> </tr> </table> <p>Replace the motor if the resistance is abnormal. (Refer to Section 4-9-3, 4-10-7, and 4-12-7.)</p>	(5)Black-(1)Red, (5)Black-(2)Yellow	approx.4.7 Ω	(6)White-(3)Orange, (6)White-(4)Blue	approx.4.7 Ω	(1)Red-(2)Yellow, (3)Orange-(4)Blue	approx.9.4 Ω	Other matches	Infinity	(5)Black-(1)Red, (5)Black-(2)Yellow	approx.8.0 Ω ±10%	(6)White-(3)Orange, (6)White-(4)Blue	approx.8.0 Ω ±10%	(1)Red-(2)Yellow, (3)Orange-(4)Blue	approx.16.0 Ω ±10%	Other matches	Infinity	(1)Black-(2)Brown	approx.30 Ω ±10%	(3)Yellow-(4)Orange	approx.30 Ω ±10%	Other matches	Infinity
(5)Black-(1)Red, (5)Black-(2)Yellow	approx.4.7 Ω																							
(6)White-(3)Orange, (6)White-(4)Blue	approx.4.7 Ω																							
(1)Red-(2)Yellow, (3)Orange-(4)Blue	approx.9.4 Ω																							
Other matches	Infinity																							
(5)Black-(1)Red, (5)Black-(2)Yellow	approx.8.0 Ω ±10%																							
(6)White-(3)Orange, (6)White-(4)Blue	approx.8.0 Ω ±10%																							
(1)Red-(2)Yellow, (3)Orange-(4)Blue	approx.16.0 Ω ±10%																							
Other matches	Infinity																							
(1)Black-(2)Brown	approx.30 Ω ±10%																							
(3)Yellow-(4)Orange	approx.30 Ω ±10%																							
Other matches	Infinity																							
5	Replace Control PCA and see if the error is resolved.	Refer to Section 4-11 for replacement.																						

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3-3-19 “E6: Operator panel alarm”

Table 3-3-19

Item No.	Check items	How/where to check
1	Does the same symptom occur after turning OFF and ON the scanner?	Press power button of the scanner for more than 2 seconds to turn it OFF, and after more than 2 seconds elapse, press the power button to turn the scanner ON.
2	It seems the installed Panel PCA has been used in other scanner before and it may be faulty one. Replace it with the new Panel PCA.	Install the new Panel PCA after saving the EEPROM data. (See Section 5-2) Then conduct Maintenance mode #7 by referring to Section 5-1-8 .

3-3-20 “E7: EEPROM alarm”

Table 3-3-20

Item No.	Check items	How/where to check
1	Does the same symptom occur after turning OFF and ON the scanner?	Press power button of the scanner for more than 2 seconds to turn it OFF, and after more than 2 seconds elapse, press the power button to turn the scanner ON.
2	Replace the Panel PCA and see if the error is resolved.	Refer to Section 4-9-1 for replacement.
3	Replace the Control PCA and see if the error is resolved.	Refer to Section 4-11 for replacement.

3-3-21 “E8: SCSI fuse blown”

Table 3-3-21

Item No.	Check items	How/where to check
1	Does the same symptom occur after turning OFF and ON the scanner?	Press power button of the scanner for more than 2 seconds to turn it OFF, and after more than 2 seconds elapse, press the power button to turn the scanner ON.
2	Check if the SCSI cable or other SCSI devices connected to the scanner causes this error.	The scanner can work even after this error occurs. Go to item 3 if you want to remove this error.
3	Replace the Control PCA and see if the error is resolved.	Refer to Section 4-11 for replacement.

3-3-22 “E9: Image memory alarm”

Table 3-3-22

Item No.	Check items	How/where to check
1	Does the same symptom occur after turning OFF and ON the scanner?	Press power button of the scanner for more than 2 seconds to turn it OFF, and after more than 2 seconds elapse, press the power button to turn the scanner ON.
2	Replace the Control PCA and see if the error is resolved.	Refer to Section 4-11 for replacement.

3-3-23 “Ec: RAM alarm”

Table 3-3-23

Item No.	Check items	How/where to check
1	Does the same symptom occur after turning OFF and ON the scanner?	Press power button of the scanner for more than 2 seconds to turn it OFF, and after more than 2 seconds elapse, press the power button to turn the scanner ON.
2	Replace the Control PCA and see if the error is resolved.	Refer to Section 4-11 for replacement.

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3-3-24 “Ed: SPC alarm / Image transfer error”

Table 3-3-24

Item No.	Check items	How/where to check
1	Does the same symptom occur after turning OFF and ON the scanner?	Press power button of the scanner for more than 2 seconds to turn it OFF, and after more than 2 seconds elapse, press the power button to turn the scanner ON.
2	Replace the Control PCA and see if the error is resolved.	Refer to Section 4-11 for replacement.

3-3-25 “F: ROM sum check alarm”

Table 3-3-25

Item No.	Check items	How/where to check
1	Does the same symptom occur after turning OFF and ON the scanner?	Press power button of the scanner for more than 2 seconds to turn it OFF, and after more than 2 seconds elapse, press the power button to turn the scanner ON.
2	Replace the Control PCA and see if the error is resolved.	Refer to Section 4-11 for replacement.

3-3-26 “U0: Shipping lock error”

Table 3-3-26

Item No.	Check items	How/where to check
1	Does the same symptom occur after turning OFF and ON the scanner?	Press power button of the scanner for more than 2 seconds to turn it OFF, and after more than 2 seconds elapse, press the power button to turn the scanner ON.
2	Does the same symptom occur after unlocking Shipping lock?	Refer to Section 1-4-2 .
3	Is there abnormal noise from FB Motor when this error occurs?	If abnormal noise is heard, go to item No. 4. If there is no abnormal noise, go to item No.5 to check sensors or drive unit.
4	Does any foreign object get inside drive unit or carrier unit?	Check visually.
5	Does Carrier unit move smoothly?	Check if the Slide sheet is curling up.
6	Is CR belt tension loose?	Refer to a note of (2) in Section 4-5 for checking. Loose belt should be tightened.
7	Is the FB Motor cable connected?	Connect it if disconnected.
8	Replace Control PCA and see if the error is resolved.	Refer to Section 4-11 for replacement procedure.

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3-3-27 “EF: background changeover unit failure”

Table 3-3-27

Item No.	Check items	How/where to check
1	Does the same symptom occur after turning OFF and ON the scanner?	Press power button of the scanner for more than 2 seconds to turn it OFF, and after more than 2 seconds elapse, press the power button to turn the scanner ON.
2	Are the cables between the Control PCA and the BW Motor damaged? Or are the connectors connected correctly?	Confirm the position of the BW Motor by referring to Section 4-10-7 and check the cables.
3	Is the CCD cable F or B damaged? Or are the connectors connected correctly?	Refer to Section 4-9-4 for the CCD cable B. Refer to Section 4-10-6 for the CCD cable F. Refer to Section 4-12-3 for the CR Cable.
4	Replace the Control PCA and see if the error is resolved.	Refer to Section 4-11 for replacement procedure.
5	Replace the Optical Unit and see if the error is resolved.	Refer to Section 4-10-6 for replacement procedure of the lower Optical Unit. Refer to Section 4-9-4 for replacement procedure of the upper Optical Unit. Refer to Section 4-12-6 for replacement procedure of the Optical Unit of the FB.

3-3-28 Driver error

Table 3-3-28

Item No.	Check items	How/where to check
1	Does the same symptom occur after turning OFF and ON the scanner?	Press power button of the scanner for more than 2 seconds to turn it OFF, and after more than 2 seconds elapse, press the power button to turn the scanner ON.
2	Is the connector between the scanner and the PC correctly connected?	Refer to Section 1-4-2 .
3	Replace the Control PCA and see if the error is resolved.	Refer to Section 4-11 for replacement.

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Chapter 4 Disassembly / Assembly

This chapter describes how to replace the maintenance parts, and clean the scanner to ensure the normal operations. When assembling the maintenance parts, conduct necessary cleaning when instructed in this manual.

4-1 For the Safety Operation

Please read this page carefully before disassembling or assembling.



Warning

Electric shock

Before disassembling and assembling, turn the power switch off, and unplug the AC power source from the outlet. If you do not this, an electric shock may occur.



CAUTION

Injury

Be careful not to get your fingers, hair, clothes or accessories caught in a moving part. It may cause injury.

Machine damage

Static Electricity may cause the damage to the scanner.
When repair the scanner, wear a wrist strap to avoid ESD.

Notes when cleaning

When cleaning the scanner, be careful not to allow foreign matters, such as dried ink and toner, to fall inside the scanner.

How to remove the Plastic latch

The most of parts mounted with Plastic Latches.
When you removing parts, please remove it carefully because those Latches are easy to break.
Push the upper place of the Latch when you remove those parts.



Do not give too much force when remove the parts from these latches.

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4-2 Maintenance

This section describes about basic maintenance service.

4-2-1 Periodic maintenance

This scanner is recommended to have periodic maintenance according to the following cycle.

Item	Maintenance cycle
Periodic maintenance	Every 12 months

At maintenance, clean the following if they are dirty.

- Optical Unit (Refer to [Section 4-3-1](#), [4-3-3](#), [4-3-5](#))
- Glass of Dust cover (Refer to [Section 4-3-2](#))
- Glass of Upper Unit (Refer to [Section 4-3-4](#))

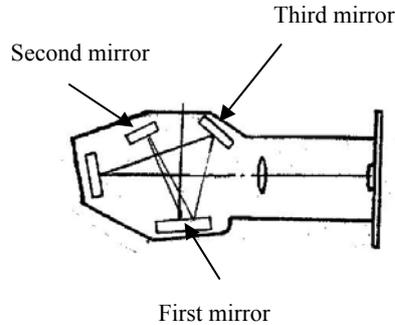
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4-3 Cleaning

4-3-1 Cleaning Optical Unit (for front side)

Follow the procedure below to clean the Optical Unit.

- (1) Remove the Optical Unit. (Refer to [Section 4-10-6](#).)
- (2) Clean the mirrors (especially the first mirror shown below) inside the Optical Unit with a dry lint-free cloth or a blower brush.
- (3) After cleaning, mount the Optical Unit. (Refer to [Section 4-10-6](#).)



NOTICE

1. Do not use any cleaning liquid such as alcohol that may smear the mirrors when cleaning. Use a dry cloth or a blower brush.
2. Reflecting sides of the mirrors (aluminum vapor deposition part) face inside of the Optical Unit.
3. Conduct the procedure under dust-free environment.

4-3-2 Cleaning glass of Dust Cover ASSY (lower glass)

Follow the procedure below to clean the glass of Dust Cover ASSY.

- (1) Remove the Dust Cover ASSY. (Refer to the procedure (1) to (5) in [Section 4-10-5](#)) No need to remove the plastic rollers.
- (2) Clean inside of the glass of the Dust Cover ASSY with a lint-free cloth moistened with alcohol.
- (3) After cleaning, mount the Dust Cover ASSY. (Refer to [Section 4-10-5](#).)

NOTICE

1. Take care not to damage the Lamp.
2. Conduct the procedure under dust-free environment.

4-3-3 Cleaning Optical Unit (for back side)

Follow the procedure below to clean the Optical Unit.

- (1) Remove the Optical Unit. (Refer to [Section 4-9-4](#).)
- (2) Clean the mirrors (especially the second and third mirrors shown above) inside the Optical Unit with a dry lint-free cloth or a blower brush.
- (3) After cleaning, mount the Optical Unit. (Refer to [Section 4-9-4](#).)

NOTICE

1. Do not use any cleaning liquid such as alcohol that may smear the mirrors. Use a dry cloth or a blower brush.
2. Reflecting sides of the mirrors (vapor deposition part) face inside of the Optical Unit.
3. Conduct the procedure under dust-free environment.

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4-3-4 Cleaning glass of Upper ASSY (upper glass)

Follow the procedure below to clean the glass of Upper ASSY.

- (1) Remove the Optical Unit. (Refer to the procedure (1) to (4) in [Section 4-9-4](#).) No need to remove the Lamp sensors.
- (2) Clean inside of the glass of the Upper ASSY with a lint-free cloth moistened with alcohol.
- (3) After cleaning, mount the removed parts. (Refer to [Section 4-9-8](#).)

NOTICE

Conduct the procedure under dust-free environment.

4-3-5 Cleaning Optical Unit for FB

Follow the procedure below to clean Optical Unit for flatbed.

- (1) Remove the Optical Unit. (Refer to [Section 4-12-6](#).)
- (2) Clean the mirrors (especially the second and third mirrors shown in the figure of [Section 4-3-1](#)) inside the Optical Unit with a dry lint-free cloth or a blower brush.
- (3) After cleaning, mount the Optical Unit.

NOTICE

Do not use any cleaning liquid such as alcohol that may smear the mirrors. Use a dry cloth or a blower brush.

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4-4 Maintenance Tool

Special tools to clean this scanner are shown in table 4-4.

Table 4-4

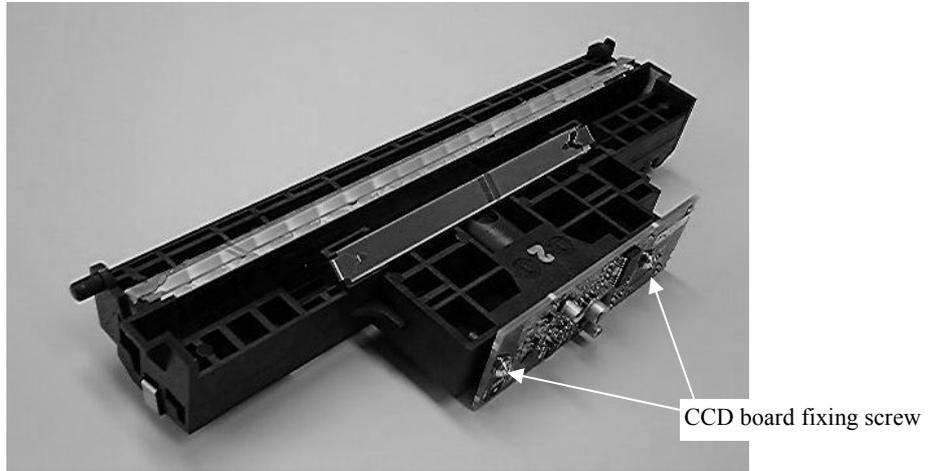
No.	Tools	When to use	Remarks
1	Philips screwdriver		For M3, M4 screws
2	Small Philips screwdriver	Removing Control PCA and BW Motor	For M2.5 screws
3	Spring gauge	Belt tension adjustment	Max 1 kg force
4	Alcohol	Cleaning	Ethyl alcohol or isopropyl alcohol
5	Blower brush	Cleaning mirror	
6	Glove or cloth	Handling CR shaft	
7	Small flat-blade screwdriver	Removing connector	
8	White level adjustment sheet	White level adjustment (Refer to Section 5-1-5.)	Description: TEST SHEET (W) Part number: PA03277-Y123 Please purchase this sheet prior to maintenance.
9	Magnification/Offset adjustment sheet	Magnification/Offset adjustment (Refer to Section 5-1-3 , 5-1-4.)	Required for offset or magnification adjustment. See Figure 5-1-3 (Section 5-1-3) for ADF, Figure 5-1-4 (Section 5-1-3) for FB, and prepare the sheet in advance, if you do not have one.

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4-5 Parts that Should not be Disassembled

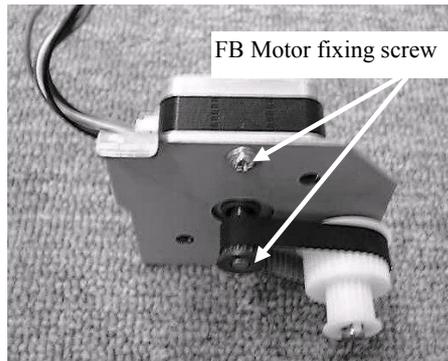
The following screws are adjusted and secured at shipment from factory. Do not attempt to disassemble nor loose them.

(1) Optical Unit



08

(2) FB Motor fixing screw



(3) CR belt tension bracket fixing screw (Reference)

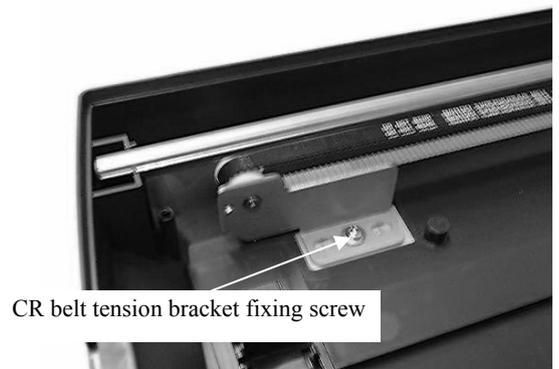
NOTICE

If this screw is loosened by accident, readjusting and checking the belt tension are necessary.

Refer to <Adjustment/Belt tension check> in Section 4-12-7 “How to remove/install the FB Motor” for how to adjust and check the belt tension.

* A spring gauge is required for checking the belt tension. (Refer to Section 4-4 “Maintenance Tool”.)

If you do not have a spring gauge, you are not allowed to loosen this screw as long as you cannot check the belt tension.



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4-6 Removing / Installing the Chute Unit (ADF paper chute)

4-6-1 How to remove/install the Chute Unit (ADF paper chute)

NOTICE

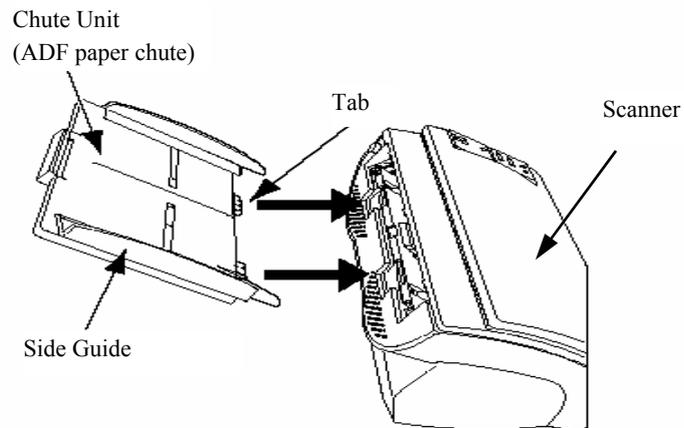
Refer to [Section 6-18](#) for the part number of the replacement part.

<Removing>

Pull the Chute Unit (ADF paper chute) out from the scanner.

<Installing>

Hold the Chute Unit (ADF paper chute) and insert its tabs into the corresponding slots in the scanner as shown in the figure below.

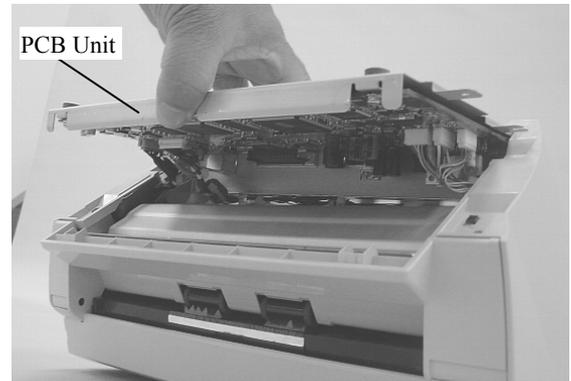
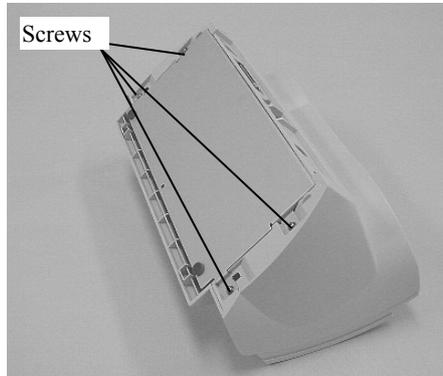


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4-7 Removing / Installing the PCB Unit

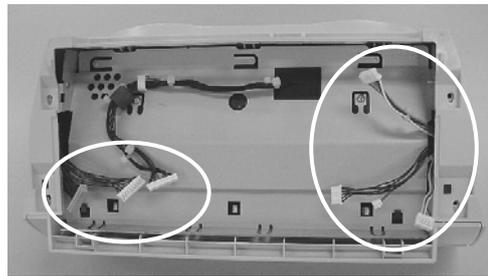
<Removing>

- (1) Remove the Chute Unit (ADF paper chute). (Refer to [Section 4-6](#).)
- (2) Remove the ADF unit. (Refer to steps (1) ~ (4) in [Section 4-12-2](#).)
- (3) Remove 4 screws from the Base Unit, and open the PCB unit as shown in the following photo, taking care not to pull the cables inside by force.



Note: The above shows fi-5120C.
fi-5220C has rectangular holes on the bottom.

- 1) Disconnect 7 connectors, which are connected to the PCB Unit, and remove the PCB Unit. To replace the Control PCA, go to [Section 4-11](#).



<Installing>

- Follow the above procedure in reverse.
1. Attach 4 connectors in the right circle.
 2. Attach 3 connectors in the left circle.
 3. Attach the PCB Unit.

Be careful not to pinch any cables between the PCB Unit and the scanner.

Note: Before attaching PCB unit on the scanner, press the cable inward to prevent the pinching of the cable band between the connector and scanner frame.

Otherwise the PCB unit does not close completely, and the connector may be damaged if you close the PCB unit by force.

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4-8 Removing / Installing the Upper Unit, the Guide P ASSY (Sheet Guide) and the Base Unit

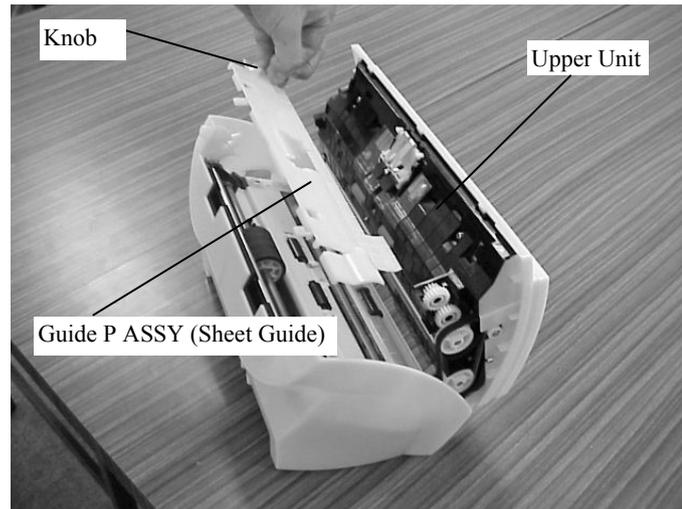
NOTICE

Be careful not to touch the glass window when disassembling.

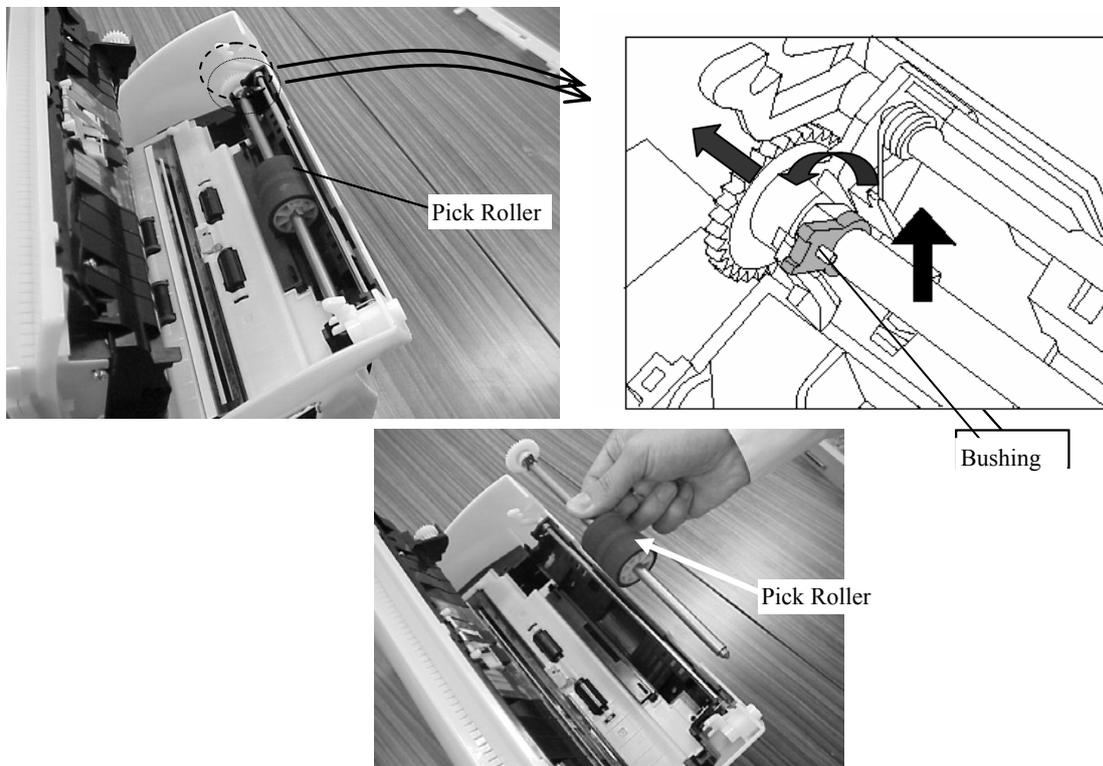
Refer to [Section 6-1](#) (Base Unit), [6-11](#) (Upper Unit) and [6-10](#) (Guide P ASSY=Sheet guide) for the part numbers of the replacement parts.

<Removing>

- 1) When replacing Upper Unit, remove Panel PCA at first by following the steps (2) and (3) in [Section 4-9-1](#).
Note that it is not necessary to save the EEPROM data from the Panel PCA to the Control PCA because this Panel PCA is attached again after replacing the Upper Unit.
- 2) Remove the PCB Unit. (Refer to [Section 4-7](#).)
- 3) Open the Upper Unit and hold the knob of the Guide P ASSY (Sheet Guide) to lift it up for removal.



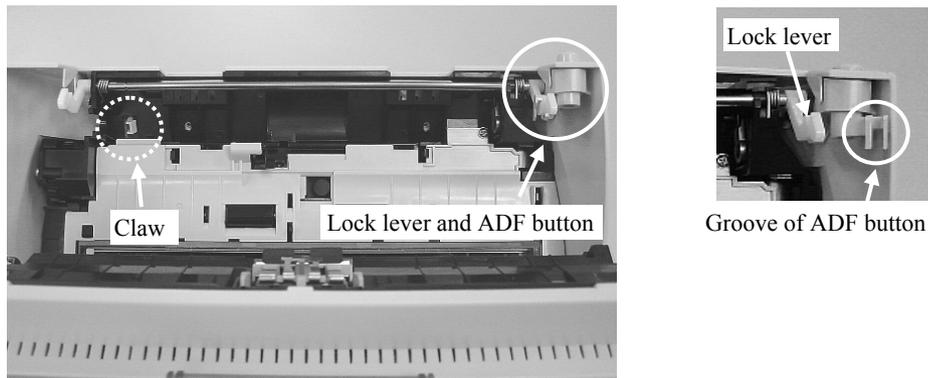
- 4) Rotate the bushing that holds the Pick Roller gear to remove one end of the roller shaft from the frame. Remove the other end of the roller shaft from the bushing to remove the Pick Roller completely.



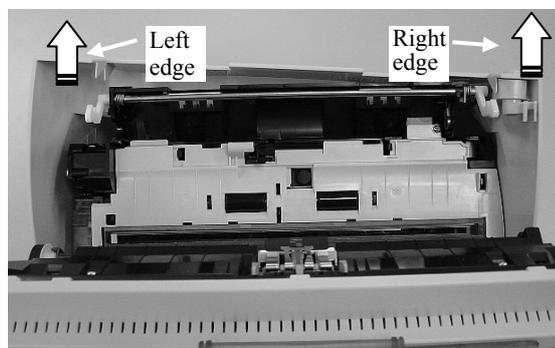
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5) Detach the Rear Cover from the Base unit.

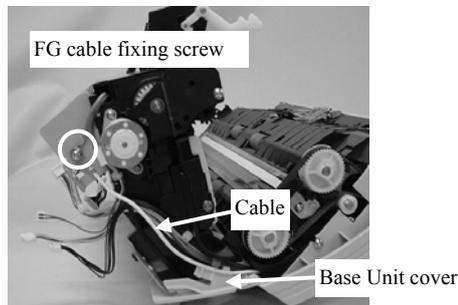
1. Unlatch the lock lever from the groove of the ADF button and lay the groove to right (photo on the right below).



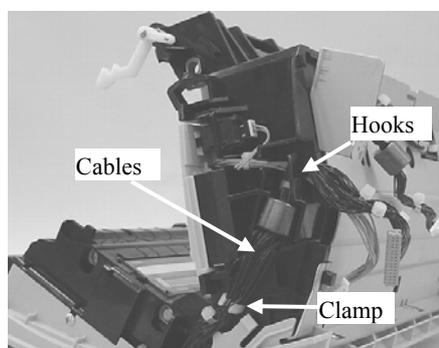
2. Unlatch the claw (dotted circle in the photo on the left above) of the Rear Cover which is connected to the frame of the Base Unit, remove the left edge of the Rear Cover, then the right edge.



6) Remove a FG cable fixing screw in the metal board that protects the PCA. Then remove the cables out from the cover in the Base Unit.

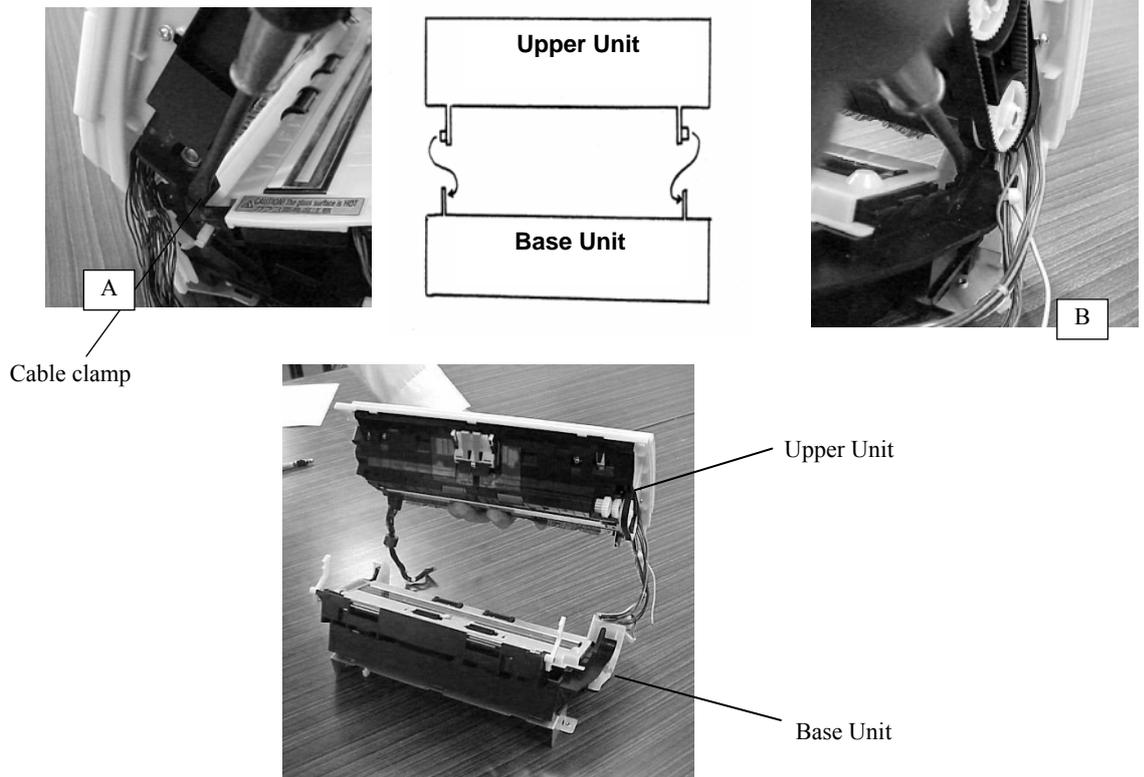


7) Remove the black wire cables from a cable clamp and hooks of the Base Unit.



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- 8) Insert a flat screwdriver between the side plates of the Upper Unit and the Base Unit at the fulcrum (shown as A and B in the figures below) and remove the fulcrum shaft from the hole, so that the Upper Unit and the Base Unit are separated. It will be easier to start from the A side.

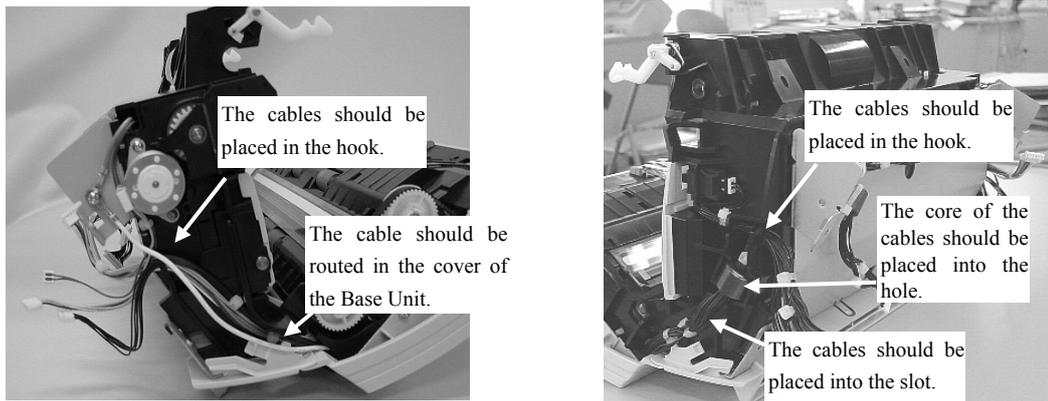


<Installing>

- 1) Follow the above procedure in reverse, paying attention to the notices below.

NOTICE

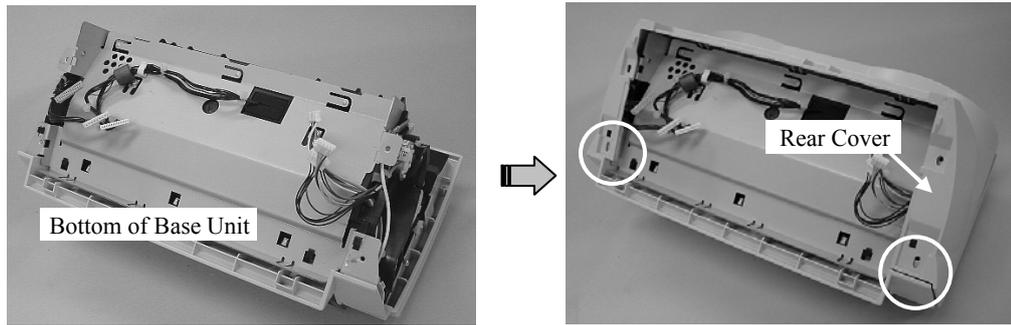
1. Clean the glass window with a lint-free cloth moistened with alcohol. Be sure that no fabric from the cloth remains on the glass.
2. When assembling the Rear Cover, confirm that the cables and core of the Upper Unit are placed as shown below



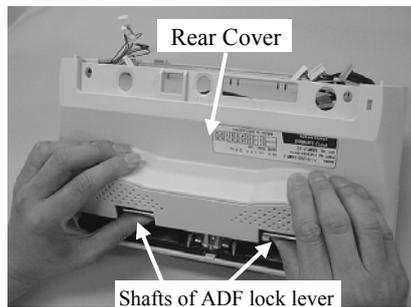
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[Installing the Rear Cover]

1. Place the Base Unit with its bottom facing up (photo on the left below), and fit the bottom of the Rear Cover into the Base Unit (photo on the right below).



2. Hold down the Rear cover and the shafts of the ADF lock lever (photo below) and insert the top of the Rear Cover into the Base Unit.



3. Insert the lock lever into the groove of the ADF button (photo below).



- 2) After mounting the Upper Unit and the Base Unit, perform the following adjustment:
 - Magnification adjustment ([Section 5-1-3](#))
 - Offset adjustment ([Section 5-1-4](#))
 - White level adjustment ([Section 5-1-5](#))
- 3) After replacing the Upper Unit, reset the Pad Counter. (Refer to [Section 5-1-6](#)). After replacing the Base Unit, reset the Pick Counter as the Base Unit includes the Pick roller. (Refer to [Section 5-1-6](#))

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4-9 Removing / Installing the parts in the Upper Unit

4-9-1 How to remove/install the Panel PCA

NOTICE

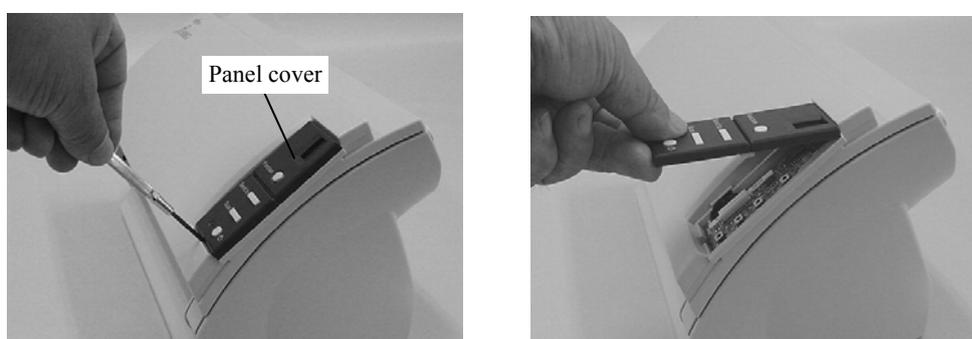
Refer to [Section 6-16](#) for the part number of the replacement part.

<Removing>

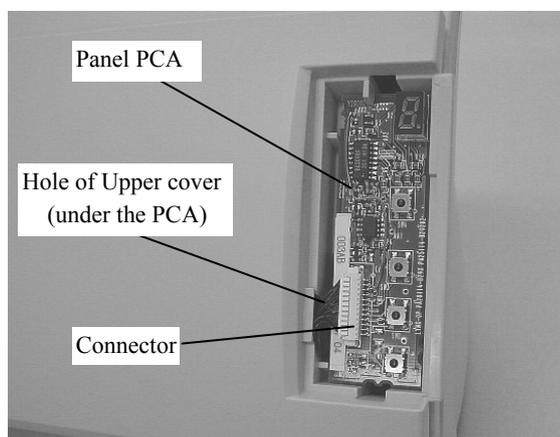
- (1) Temporarily move the EEPROM data installed on the Panel PCA into the Control PCA. (Refer to [Section 5-2](#).)

Note: This product has an EEPROM installed on the Panel PCA instead of on the Control PCA. This helps to reduce the data saving operations since the Control PCA requires frequent replacement.

- (2) Insert a flat screwdriver into a gap of the Panel Cover and Upper Cover, and remove the Panel Cover by unlatching the claw as shown below.



- (3) Take out the Panel PCA and disconnect one connector from the Panel PCA.



<Installing>

- (1) Follow the removing procedure in reverse.
- (2) After mounting a new Panel PCA, overwrite the EEPROM data that has been saved on the Control PCA into the new Panel PCA. (Refer to [Section 5-1-8](#).)
- (3) Put the cables into the hole of Upper cover (see above photo). If the cables are accidentally placed between Panel PCA and Upper cover, the Panel PCA is lifted causing power button to be turned ON.

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4-9-2 How to remove/install the Lamp Inverter

NOTICE

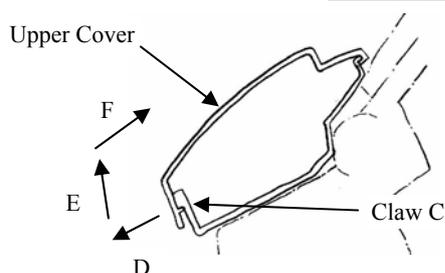
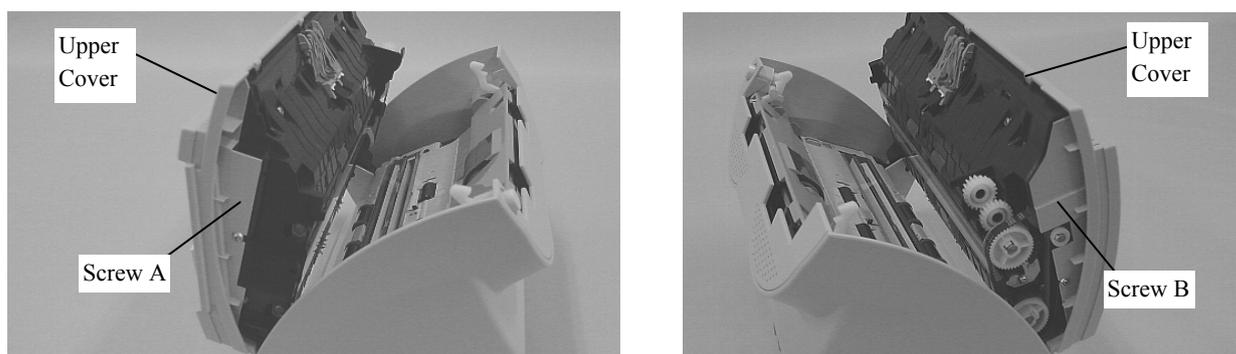
Conduct the procedure under dust-free environment.
Refer to [Section 6-2](#) for the part number of the replacement part.

<Removing>

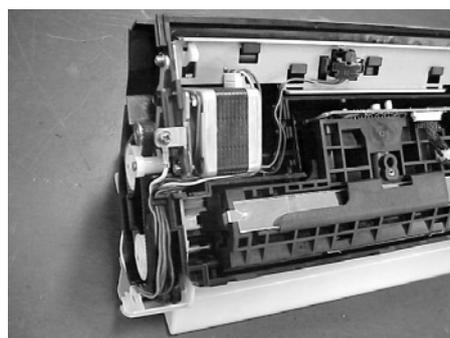
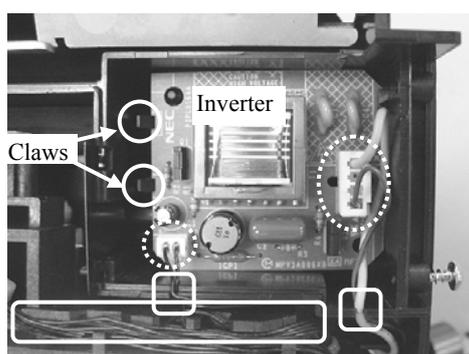
- (1) Remove the Panel PCA. (Refer to steps (2) and (3) in [Section 4-9-1](#).)
- (2) Loosen the self-tapping screws A and B. Pull the lower edge of the Upper cover in D direction to detach the Claw C, lift up the edge in E direction, then push the cover in F direction.

NOTICE

When removing the Upper cover, be careful not to turn the scanner upside down. Doing so may cause the Optical Unit to fall off since it is not fixed to the Upper ASSY.



- (3) Detach the (2) claws (solid circles in the photo on the left below) that hold the Lamp Inverter and disconnect (2) connectors (dotted circles in the photo on the right below) to remove the Lamp Inverter.



<Installing>

Follow the removing procedure in reverse.

Note: When installing the Upper cover, do not pinch the cables.

1. Make sure that the cables are inserted in the grooves (3 places, square in the photo on the left above).
2. Make sure that the ADF Motor cable is inserted in the groove (photo on the right above).

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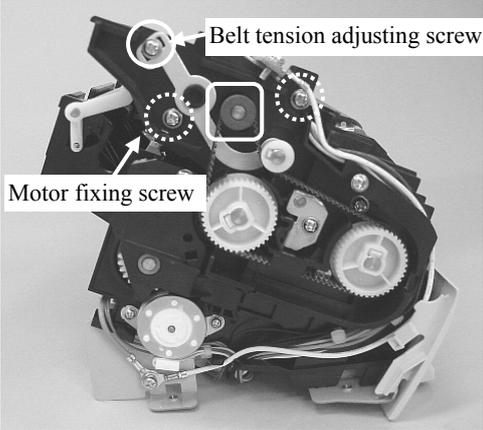
4-9-3 Removing / Installing the ADF Motor

NOTICE

Conduct the procedure under dust-free environment.
 Refer to [Section 6-13](#) for the part number of the replacement part.

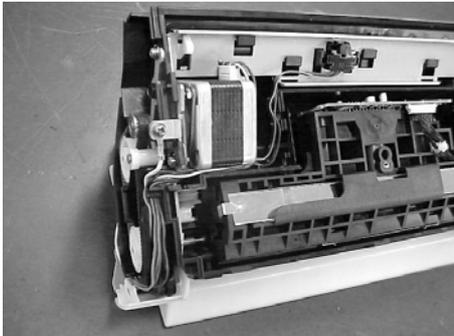
<Removing>

- (1) Remove the PCB unit. (Refer to [Section 4-7](#).)
- (2) Remove the Rear cover. (Refer to steps (3) ~ (5) in [Section 4-8](#).)
- (3) Remove the Panel PCA. (Refer to steps (2) and (3) in [Section 4-9-1](#).)
- (4) Remove the Upper Cover. (Refer to step (2) in [Section 4-9-2](#).)
- (5) Loosen a belt tension adjusting screw (solid circle in the photo below), and remove (2) ADF Motor fixing screws (dotted circles in the photo below). Remove the cable of the ADF Motor (square in the photo below) from the scanner, and take out the ADF Motor.



<Installing>

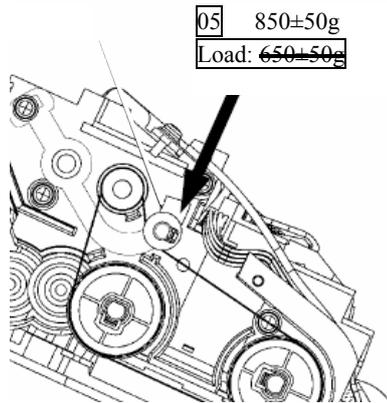
Follow the removing procedure in reverse. Arrange the ADF Motor cable as shown in the photo below:



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After mounting the ADF Motor, adjust the belt tension so that the tension becomes the value shown in the figure on the next page, and fix the belt tension adjusting screw. 02

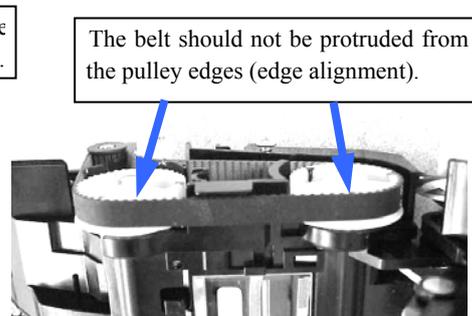
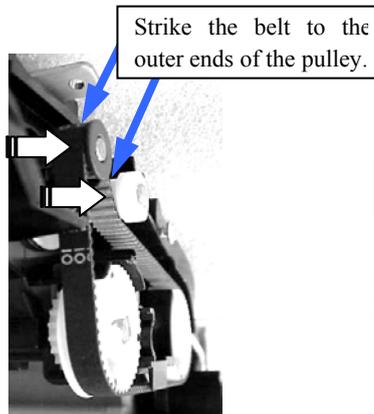
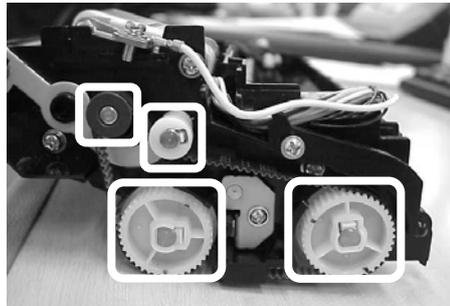
02



02

Note: Before adjusting the belt tension, perform the following actions:

- Loosen the tension adjusting screw 2 rotations.
- Strike the belt to the outer ends of four (4) pulleys (squares in the photo below).



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06	May 28, 2007	K.Okada	K.Okada	T.Anzai	Refer to Revision Record on page 2.				
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4-9-4 Removing / Installing the Optical Unit (for ADF backside)

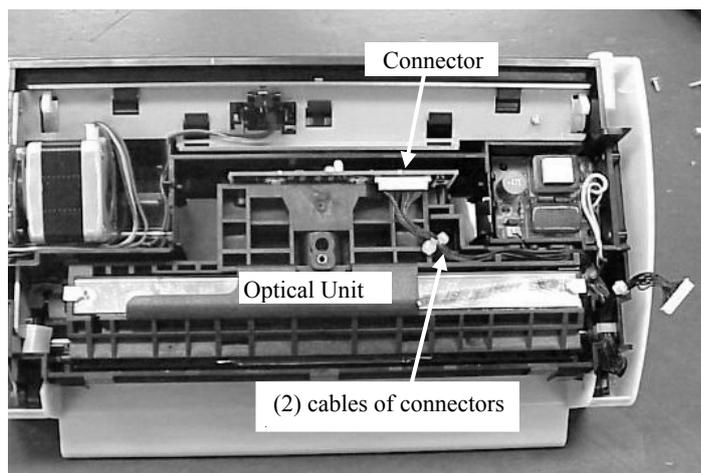
NOTICE

Conduct the procedure under dust-free environment.

Refer to [Section 6-7](#) for the part number of the replacement part.

<Removing>

- (1) Remove the Panel PCA. (Refer to steps (2) and (3) in [Section 4-9-1](#).)
- (2) Remove the Upper Cover. (Refer to step (2) in [Section 4-9-2](#).)
- (3) Remove a connector from the Optical Unit. Remove (2) cables from the groove of the Optical Unit. Then remove the Optical Unit.



<Installing>

- (1) If the mirror inside the Optical Unit is dirty, clean it with the blower brush or a dry cloth. Do not use alcohol as it may stain the mirror.
- (2) Follow the removing procedure in reverse. The cables should be routed in the way as shown in the photo above.
- (3) After mounting the Optical Unit, perform the following adjustment:
 - Magnification adjustment ([Section 5-1-3](#))
 - Offset adjustment ([Section 5-1-4](#))
 - White level adjustment ([Section 5-1-5](#))

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4-9-5 Removing / Installing the Lamp (for ADF backside)

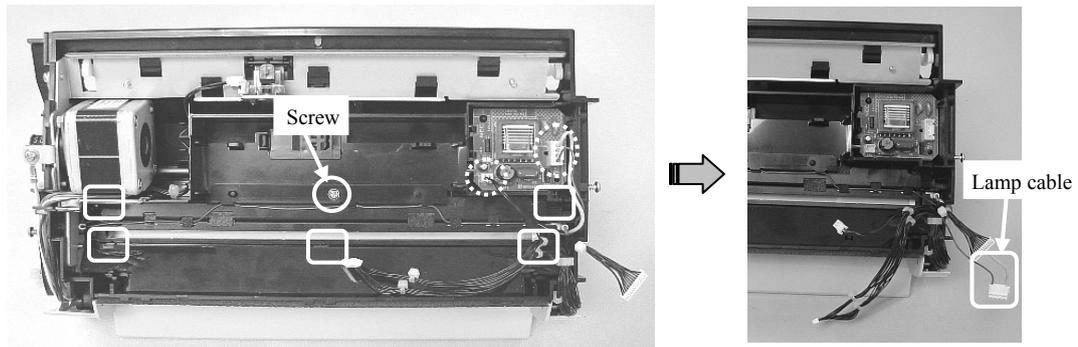
NOTICE

Conduct the procedure under dust-free environment.

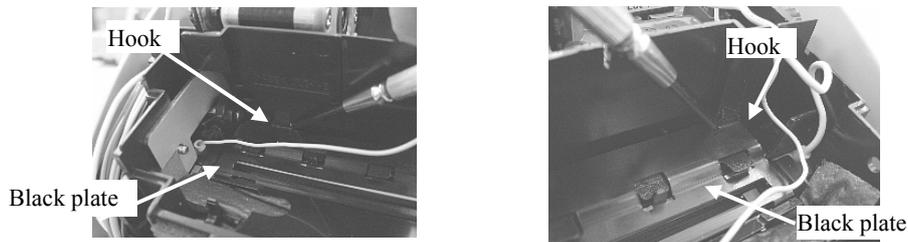
Refer to [Section 6-3](#) for the part number of the replacement part.

<Removing>

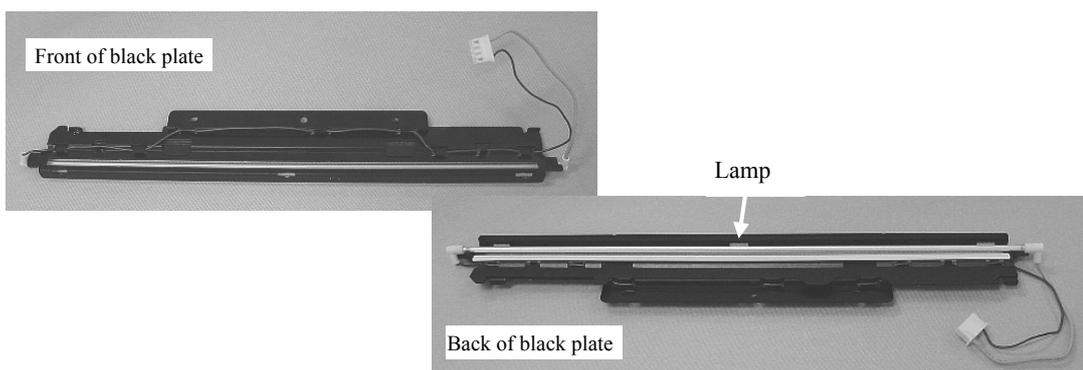
- (1) Remove the Panel PCA. (Refer to steps (2) and (3) in [Section 4-9-1](#).)
- (2) Remove the Upper Cover. (Refer to the step (2) in [Section 4-9-2](#).)
- (3) Remove the Optical Unit. (Refer to the step (3) in [Section 4-9-4](#).)
- (4) Disconnect (2) connector (dotted circles in the photo on the left below) of the Inverter and gather cables (4 bundles shown in the photo on the right below).



- (5) Remove a screw of the black plate (dotted circle in the photo on the left above). Then unhook (5) hooks (square in the photo on the right above) with a small flat-blade screwdriver and remove the black plate.



- (6) Unhook the Lamp cable from (7) hooks of the front side of the black plate and remove the Lamp.



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06	May 28, 2007	K.Okada	K.Okada	T.Anzai	Refer to Revision Record on page 2.			
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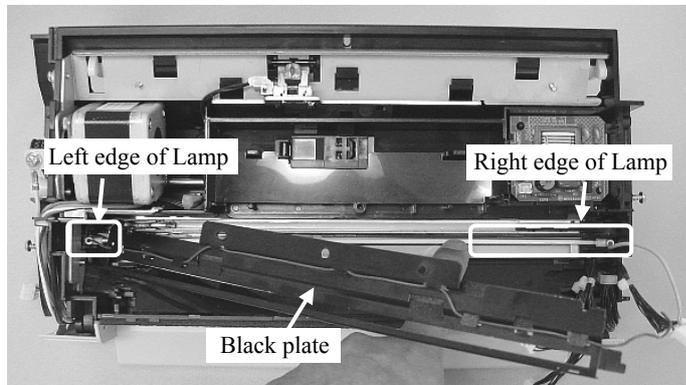
<Installing>

- (1) Follow the removing procedure in reverse. Take care not to fix the screw (for black plate) too tight as it is a self-tapping screw.

[Installing the black plate]

1. Insert the left edge of the Lamp into the groove of the Upper Unit (photo below).

Note: Place the black plate of which the Lamp cable is attached is facing up.

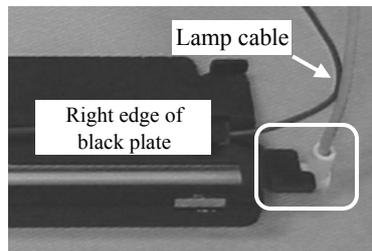


2. Insert the right edge of the Lamp into the groove of the Upper Unit (photo above).

Note: Place the black plate of which the Lamp cable is attached is facing up.

3. Attach the black plate to the Upper Unit.

Note: Fit the attaching part (facing up, photo below) to L-shape part at the right edge of the black plate.



- (2) After mounting the Lamp, perform the following adjustment:

- Magnification adjustment ([Section 5-1-3](#))
- Offset adjustment ([Section 5-1-4](#))
- White level adjustment ([Section 5-1-5](#))

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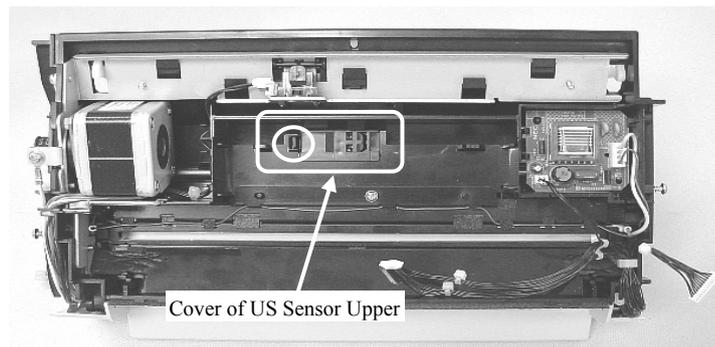
4-9-6 Removing/ Installing the US Sensor Upper

NOTICE

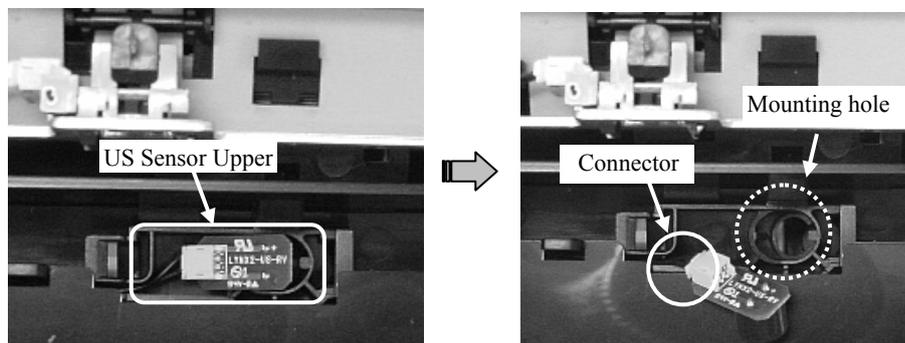
Conduct the procedure under dust-free environment.
Refer to [Section 6-14](#) for the part number of the replacement part.

<Removing>

- (1) Remove the Panel PCA. (Refer to steps (2) and (3) in [Section 4-9-1](#).)
- (2) Remove the Upper Cover. (Refer to the step (2) in [Section 4-9-2](#).)
- (3) Remove the Optical Unit. (Refer to the step (3) in [Section 4-9-4](#).)
- (4) Remove the black plate. (Refer to step (5) in [Section 4-9-5](#).)
- (5) Unlatch a claw (solid circle in the photo below) on the cover of the US Sensor Upper and remove the cover (square in the photo below) of the US Sensor Upper.



- (6) Take the US Sensor Upper out of the mounting hole and disconnect a connector (photo on the below right) of the US Sensor Upper.



<Installing>

- (1) Follow the removing procedure in reverse.
Note: Insert the US Sensor Upper into the mounting hole (dotted circle in the photo on the right above) at a slant.
- (2) Check the sensor performance by Maintenance mode #1. (Refer to [Section 5-1-2](#).)

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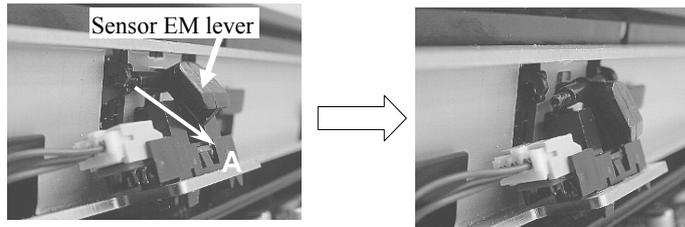
4-9-7 Removing / Installing the Sensor EM (for Empty detection)

NOTICE

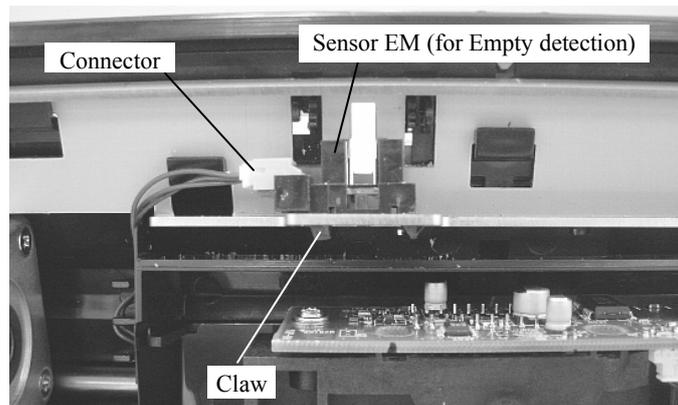
Conduct the procedure under dust-free environment.
Refer to [Section 6-15](#) for the part number of the replacement part.

<Removing>

- (1) Remove the Panel PCA. (Refer to the steps (2) and (3) in [Section 4-9-1](#).)
- (2) Remove the Upper cover. (Refer to step (2) in [Section 4-9-2](#).)
- (3) Pull left (connector side) of the shaft of the Sensor EM lever in A direction and remove the shaft. Remove right side of the shaft and remove the Sensor EM lever.



- (4) Remove the Sensor EM by releasing claws of the Sensor EM, and disconnect a connector from the Sensor EM.



<Installing>

- (1) Follow the removing procedure in reverse.
- (2) After mounting the Sensor EM, perform the offset adjustment ([Section 5-1-4](#)), check the sensor performance. ([Section 5-1-2](#).)

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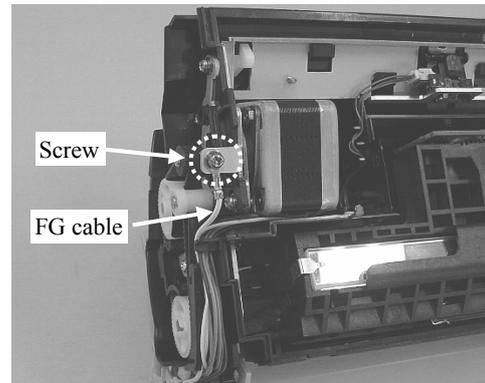
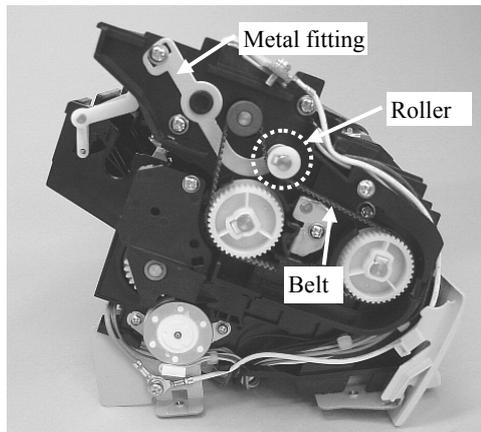
4-9-8 Removing / Installing the Upper ASSY

NOTICE

Conduct the procedure under dust-free environment.
Refer to [Section 6-12](#) for the part number of the replacement part.

<Removing>

- (1) Remove the PCB unit. (Refer to [Section 4-7](#).)
- (2) Remove the Rear Cover. (Refer to steps (3) ~ (5) in [Section 4-8](#).)
- (3) Remove the Panel PCA. (Refer to steps (2) and (3) in [Section 4-9-1](#).)
- (4) Remove the Upper Cover. (Refer to steps (2) and (3) in [Section 4-9-2](#).)
- (5) Remove the ADF Motor. (Refer to step (3) in [Section 4-9-3](#).) Remove the metal fitting, roller and belt used for adjusting belt tension (photo on the left below). Remove a screw that fixes the FG cable and take out the FG cable (photo on the right below).



- (6) Remove the Optical Unit. (Refer to step (3) in [Section 4-9-4](#).)
- (7) Remove the Lamp. (Refer to steps (4) and (5) in [Section 4-9-5](#).)
- (8) Remove the US Sensor Upper. (Refer to steps (4) to (6) in [Section 4-9-6](#).)
- (9) Remove the Sensor EM. (Refer to step (3) and (4) in [Section 4-9-7](#).)
- (10) Remove the Pad ASSY (Refer to step (3) in [Section 1-7-2](#).)

➔ **The remaining unit is the Upper ASSY to be replaced.**

<Installing>

- (1) If either side of the glass in the Upper Unit is dirty, clean it. Follow the removing procedure in reverse. Assembling should be taken under dust-free environment.
- (2) After mounting the Lamp, perform following adjustment:
 - Magnification adjustment for ADF back scanning ([Section 5-1-3](#))
 - Offset adjustment for ADF back scanning ([Section 5-1-4](#))
 - White level adjustment for ADF front/back scanning ([Section 5-1-5](#))
- (3) Check the sensor performance as shown in [Section 5-1-2](#).

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4-10 Removing/Installing the parts of the Base Unit

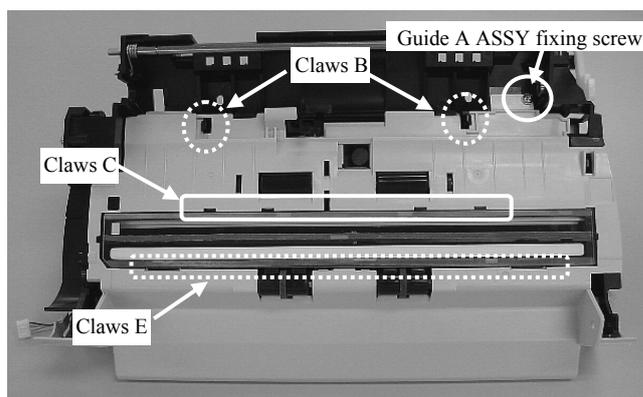
4-10-1 How to remove/install the Guide A ASSY

NOTICE

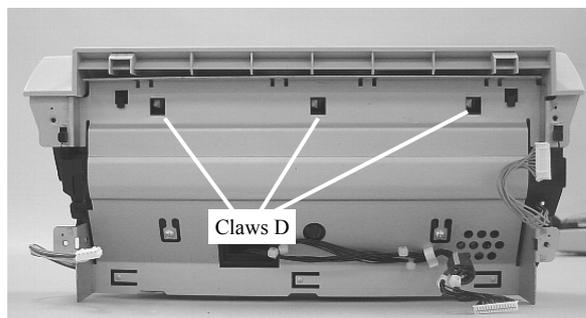
Refer to [Section 6-5](#) for the part number of the replacement part.

<Removing>

- (1) Remove the PCB Unit. (Refer to [Section 4-7](#).)
- (2) Remove the Base Unit. (Refer to steps (3) ~ (8) in [Section 4-8](#).)
- (3) Remove the Guide A ASSY fixing screw (one self-tapping screw). Detach the Claws B in 2 locations, then the Claws E in 2 locations.
- (4) Remove a Guide A ASSY fixing screw (one self-tapping screw, solid circle in the photo below). Detach (2) Claws B (dotted circle in the photo below), then (4) Claws C (solid square in the photo below).



- (5) Release (3) Claws D at the bottom of the Base Unit by sliding them to left. Then release (4) Claws E at the upper part of the Base Unit (dotted square in the photo above).



<Installing>

Follow the removing procedure in reverse.

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08	June 5, 2009	K.Okada	A.Miyoshi	I.Fujioka	Refer to Revision Record on page 2.	fi-5220C IMAGE SCANNER MAINTENANCE MANUAL	005	80/147		
07	Mar. 18, 2008	K.Okada	T.Anzai	I.Fujioka	Refer to Revision Record on page 2.				DRAW. No. P1PA03484-B50X/6	CUST.
06	May 28, 2007	K.Okada	K.Okada	T.Anzai	Refer to Revision Record on page 2.					
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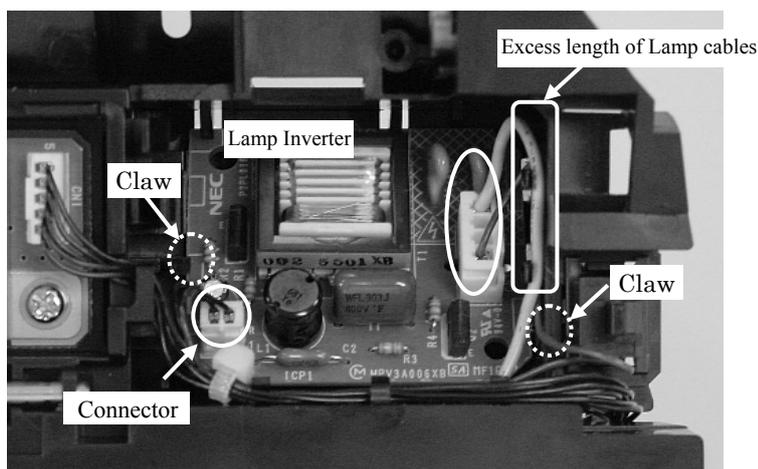
4-10-2 How to remove/install the Lamp Inverter (for front side scan)

NOTICE

Refer to [Section 6-2](#) for the part number of the replacement part.

<Removing>

- (1) Remove the PCB Unit. (Refer to [Section 4-7](#).)
- (2) Remove the Base Unit. (Refer to the procedure (3) ~ (8) in [Section 4-8](#).)
- (3) Remove the Guide A ASSY from the Base Unit. (Refer to the procedure (3) and (4) in [Section 4-10-1](#).)
- (4) Disconnect (2) connectors (solid circle in the photo below). Detach (2) claws and remove the Lamp Inverter.



<Installing>

Follow the removing procedure in reverse. The excess length of (2) Lamp cables should be placed as shown above (solid square).

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06	May 28, 2007	K.Okada	K.Okada	T.Anzai	Refer to Revision Record on page 2.			
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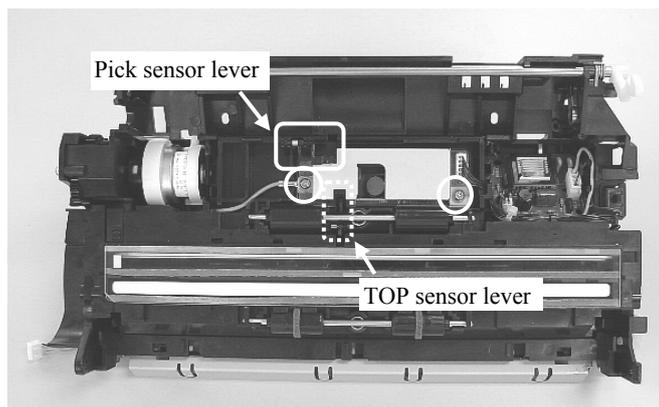
4-10-3 How to remove/install the US Sensor Lower

NOTICE

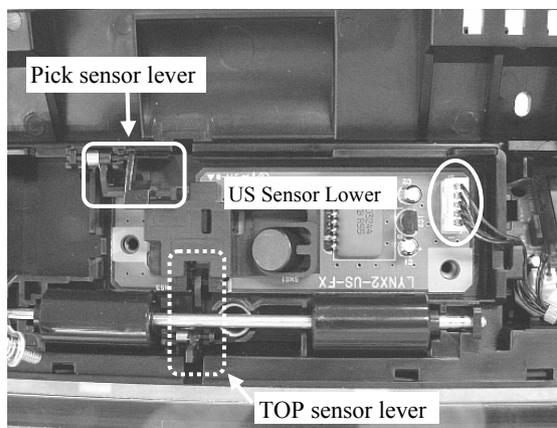
Refer to [Section 6-4](#) for the part number of the replacement part.

<Removing>

- (1) Remove the PCB Unit. (Refer to [Section 4-7](#).)
- (2) Remove the Base Unit. (Refer to steps (3) ~ (8) in [Section 4-8](#).)
- (3) Remove the Guide A ASSY from the Base Unit. (Refer to steps (3) and (4) in [Section 4-10-1](#).)
- (4) Detach (2) screws (solid circle in the photo below) of the US Sensor Lower and remove the US Sensor Lower cover.



- (5) Disconnect a connector (solid circle in the photo below). Holding down the Pick sensor lever (solid square in the photo below) and TOP sensor lever (dotted square in the photo below) with a hand so that they do not touch the US Sensor Lower, remove the US Sensor Lower by lifting up its bottom edge (TOP sensor lever side).



<Installing>

- (1) Follow the removing procedure in reverse. Arrange (2) sensor cables as shown above.
- (2) After mounting, check the sensor performance. (Refer to [Section 5-1-2](#).)

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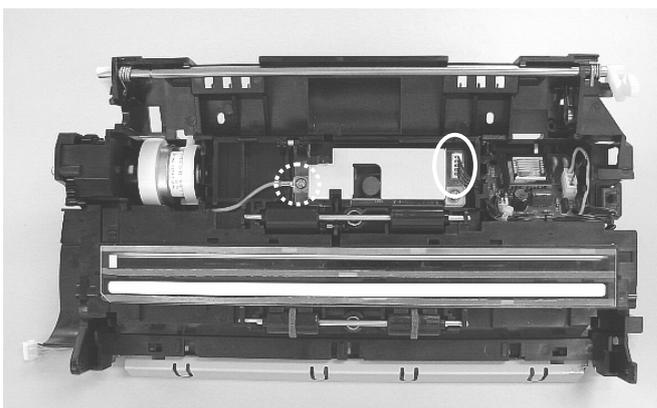
4-10-4 How to remove/install the Lamp (for ADF front)

NOTICE

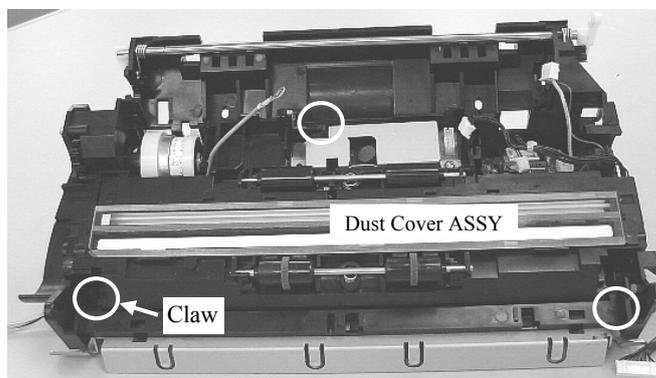
Conduct the procedure under dust-free environment.
Refer to [Section 6-3](#) for the part number of the replacement part.

<Removing>

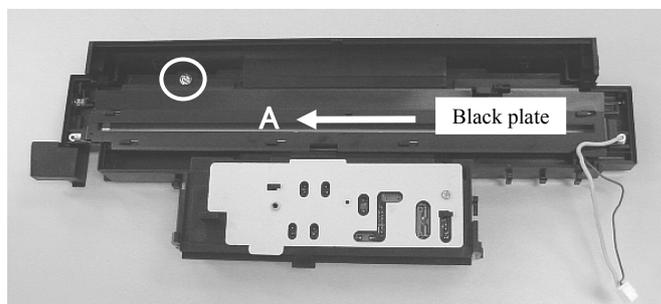
- (1) Remove the PCB Unit. (Refer to [Section 4-7](#).)
- (2) Remove the Base Unit. (Refer to steps (3) ~ (8) in [Section 4-8](#).)
- (3) Remove the Guide A ASSY from the Base Unit. (Refer to steps (3) and (4) in [Section 4-10-1](#).)
- (4) Disconnect (2) connectors. (Refer to step (4) in [Section 4-10-2](#).)
- (5) Disconnect a connector (solid circle in the photo below) of the US Sensor Lower. Then remove a screw (dotted circle in the photo below) at the left side of the US Sensor Lower cover.



- (6) Detach (3) claws (circles in the photo below) of the Dust Cover ASSY and remove the Dust Cover ASSY.

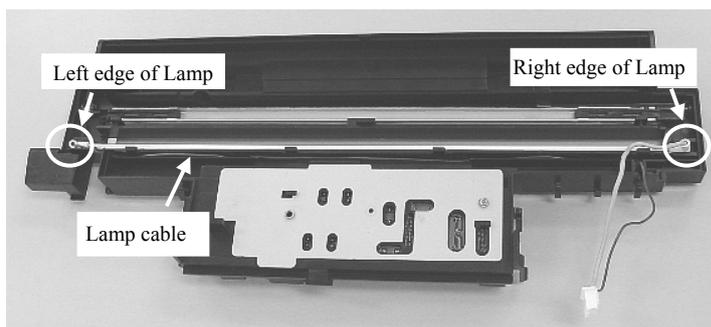


- (7) Remove a black plate fixing screw (circle in the photo below) and slide the black plate in A direction to remove it.



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- (8) Remove both edges of the Lamp from the groove of the Dust Cover ASSY. Then detach the Lamp cable from the groove.



<Installing>

- (1) If the glass of the Dust Cover ASSY and inside of the reflector are dirty, clean them.
- (2) Follow the removing procedure in reverse.

[Installing Lamp and Black Plate]

1. Insert both edges of the Lamp into the groove of the Dust Cover ASSY.

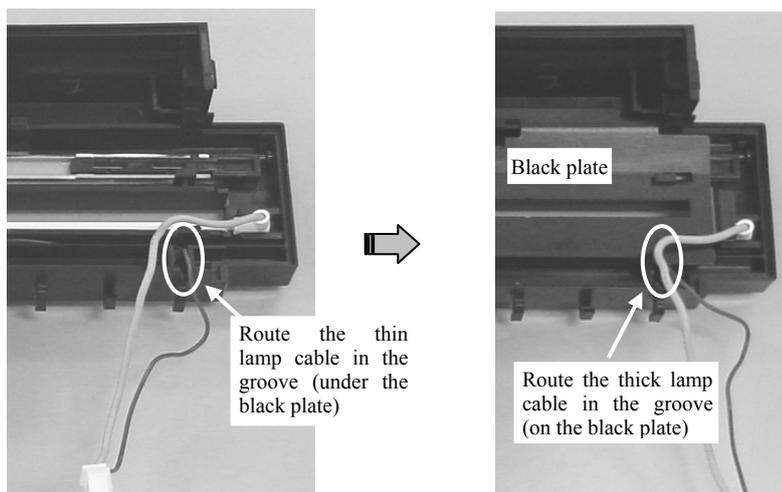
Note: Be sure that the mounting part of the Lamp cable faces up.

2. Insert the thin Lamp cable into the groove of the Dust Cover ASSY.

3. Attach the black plate to the Dust Cover ASSY.

Note: Be sure that the Lamp cable is routed as shown below.

When mounting the Dust Cover ASSY, be careful not to pinch the Lamp cable.



- (3) After mounting the Lamp, perform the following adjustment:

- White balance adjustment ([Section 5-1-5](#))
- Offset adjustment ([Section 5-1-4](#))
- Magnification adjustment ([Section 5-1-3](#))

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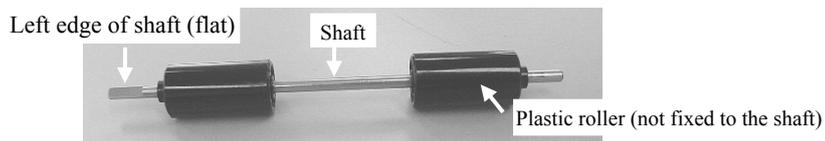
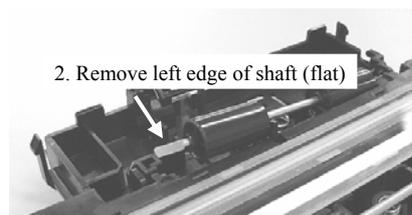
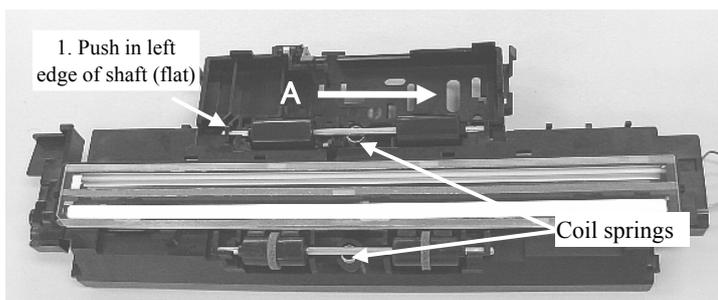
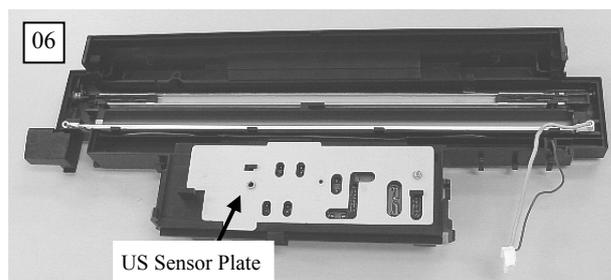
4-10-5 How to remove/install the Dust Cover ASSY

NOTICE

Conduct the procedure under dust-free environment.
Refer to [Section 6-6](#) for the part number of the replacement part.

<Removing>

- (1) Remove the PCB Unit. (Refer to [Section 4-7](#).)
- (2) Remove the Base Unit. (Refer to steps (3) ~ (8) in [Section 4-8](#).)
- (3) Remove the Guide A ASSY from the Base Unit. (Refer to steps (3) and (4) in [Section 4-10-1](#).)
- (4) Disconnect two connectors. (Refer to step (4) in [Section 4-10-2](#).)
- (5) Remove the US Sensor Lower cover and the US Sensor Lower. (Refer to step (4) and (5) in [Section 4-10-3](#).) 06
- (6) Remove the Dust Cover ASSY, the black plate and the Lamp. (Refer to steps (6) and (8) in [Section 4-10-4](#).)
- (7) Remove the US sensor plate. 06
- (8) Slide the left edge of the plastic roller shaft in A direction and remove the shaft. Remove the plastic roller shaft with sponge as well.
- (9) Remove two coil springs for the Plastic rollers. 06



<Installing>

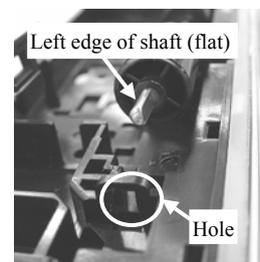
If either side of the glass in the Dust Cover ASSY is dirty, clean it. Assembling should be taken under dust-free environment. Follow the removing procedure in reverse.

[Installing Plastic roller shaft]

1. Insert the right edge of the shaft into the Dust Cover ASSY hole.
2. Insert the left edge (flat) by fitting to the Dust Cover ASSY hole (photo on the right).

[Installing Lamp and Black plate]

Refer to [Section 4-10-4](#).



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07	Mar. 18, 2008	K.Okada	T.Anzai	I.Fujioka	Refer to Revision Record on page 2.				
06	May 28, 2007	K.Okada	K.Okada	T.Anzai	Refer to Revision Record on page 2.				
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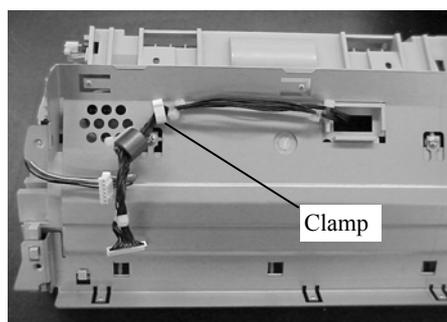
4-10-6 How to remove/install the Optical Unit (for ADF front)

NOTICE

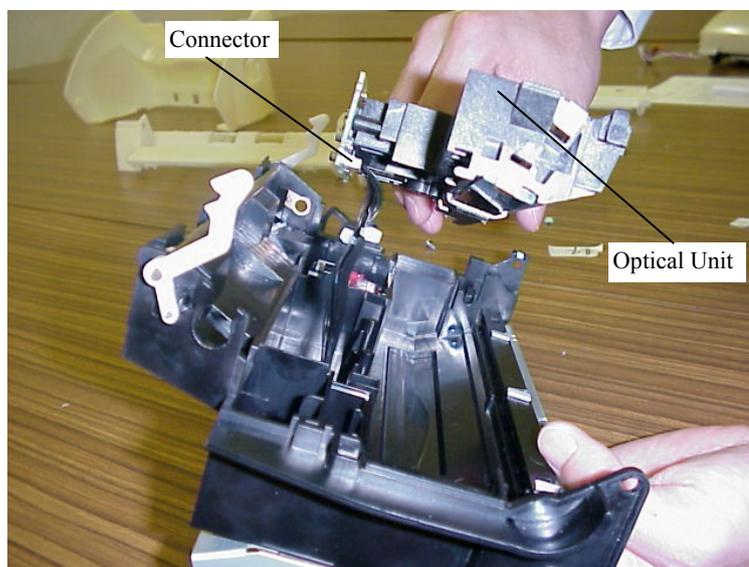
Conduct the procedure under dust-free environment.
Refer to [Section 6-7](#) for the part number of the replacement part.

<Removing>

- (1) Remove the PCB Unit. (Refer to [Section 4-7](#).)
- (2) Remove the Base Unit. (Refer to steps (3) ~ (8) in [Section 4-8](#).)
- (3) Remove the Guide A ASSY. (Refer to steps (3) and (4) in [Section 4-10-1](#).)
- (4) Disconnect (2) connectors. (Refer to step (4) in [Section 4-10-2](#).)
- (5) Remove the Dust Cover ASSY. (Refer to steps (4) and (5) in [Section 4-10-4](#).)
- (6) Remove the cable from the cable clamp attached to the bottom of the Base Unit.



- (7) Raise the Optical Unit and disconnect the connector to remove the Optical Unit.



<Installing>

- (1) Clean the mirror inside the Optical Unit using a blower brush or a dry cloth if it is dirty. Do not use alcohol as it may stain the mirror.
- (2) Follow the removing procedure in reverse.
- (3) After mounting the Optical Unit, perform the following adjustment:
 - Magnification adjustment ([Section 5-1-3](#))
 - Offset adjustment ([Section 5-1-4](#))
 - White level adjustment ([Section 5-1-5](#))

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4-10-7 How to remove/install the BW Motor

NOTICE

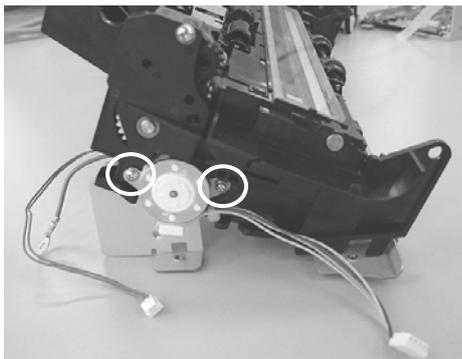
Conduct the procedure under dust-free environment.

Refer to [Section 6-8](#) for the part number of the replacement part.

A small Philips screwdriver (for M2.5) is required for replacing this part.

<Removing>

- (1) Remove the PCB Unit. (Refer to [Section 4-7](#).)
- (2) Remove the Base Unit. (Refer to steps (3) ~ (8) in [Section 4-8](#).)
- (3) Remove the Guide A ASSY. (Refer to steps (3) and (4) in [Section 4-10-1](#).)
- (4) Remove small (2) BW motor screws, and remove the BW Motor.



<Installing>

Follow the removing procedure in reverse.

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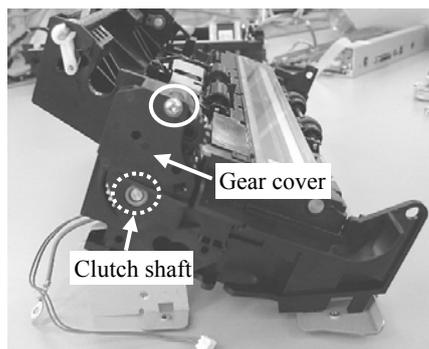
4-10-8 How to remove/install the Clutch

NOTICE

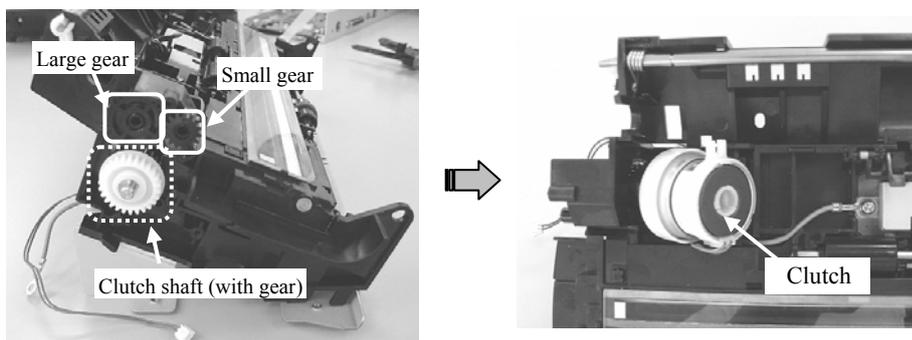
Refer to [Section 6-9](#) for the part number of the replacement part.

<Removing>

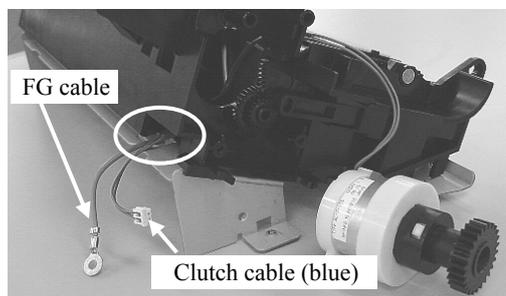
- (1) Remove the PCB Unit. (Refer to [Section 4-7](#).)
- (2) Remove the Base Unit. (Refer to steps (3) ~ (8) in [Section 4-8](#).)
- (3) Remove the Guide A ASSY from the Base Unit (Refer to steps (3) and (4) in [Section 4-10-1](#).)
- (4) Remove the BW motor. (Refer to step (4) in [Section 4-10-7](#).)
- (5) Remove a gear cover screw (solid circle in the photo below), and remove the gear cover.



- (6) Remove (2) gears (large and small, solid square in the photo on the left below). Pull out the Clutch shaft (with gear, dotted square in the photo on the left below). Lift up the Clutch (photo on the right below) diagonally toward right and pull the Clutch out of the Base Unit hole.



- (7) Pull the connector of the Clutch cable (blue) out of the hole (circle in the photo below) on the bottom of the Base Unit.

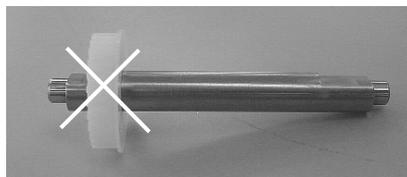
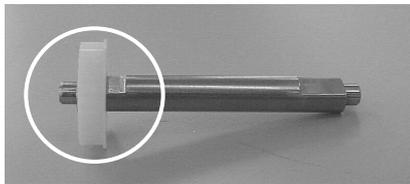


Note: To pull out the connector of the Clutch cable (blue) easily, pull out the FG cable of the US Sensor Lower first.

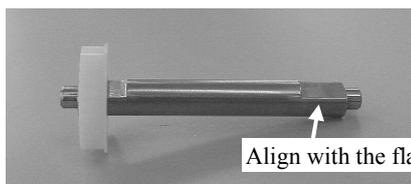
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<Installing>

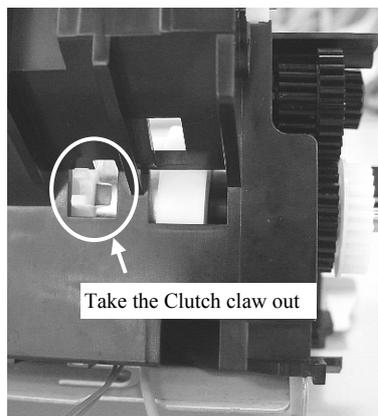
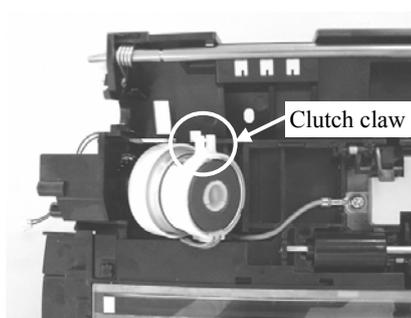
- (1) Follow the removing procedure in reverse.
- (2) Pay attention to the following points.
 1. Attach the gear at the left edge of the flat part of the Clutch shaft (with gear)



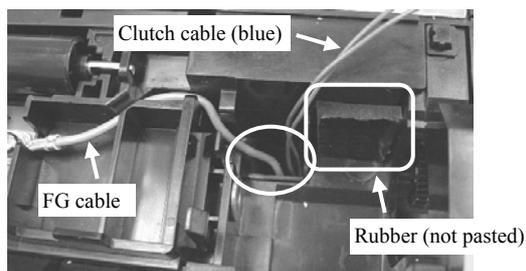
2. Align the Clutch shaft (with gear) with the flat part of the Clutch hole.



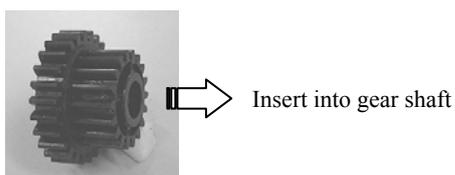
3. Take the Clutch claw out of the Base Unit hole.



Note: To let the connector of the Clutch cable (blue) into the hole under the Clutch (circle in the photo below) easily, pull out the FG cable of the US Sensor Lower first.



4. Insert the large gear into the gear shaft as shown in the photo below, and push it until its tip bumps the bottom.



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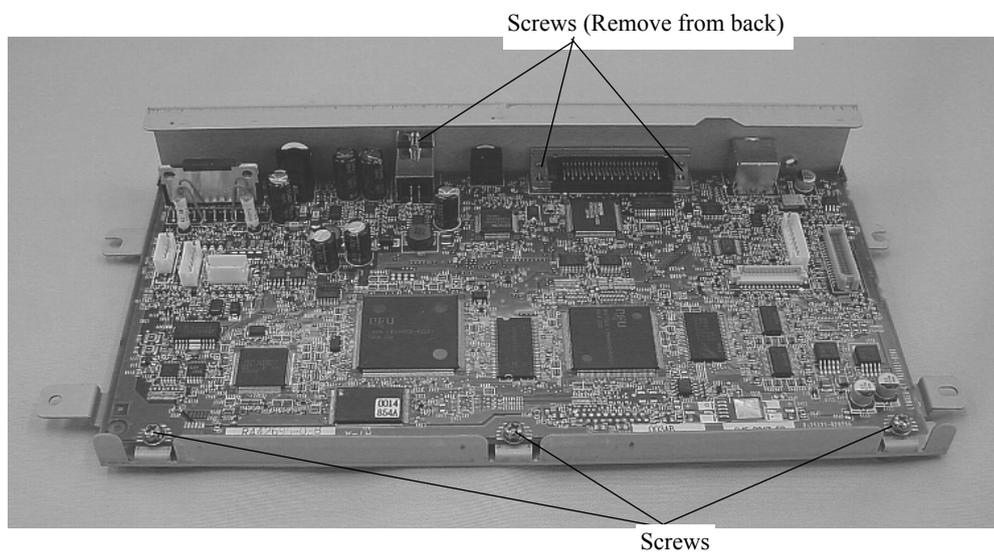
4-11 Removing/Installing the Control PCA

NOTICE

Refer to [Section 6-17](#) for the part number of the replacement part.

<Removing>

- (1) Remove the PCB Unit. (Refer to [Section 4-7](#).)
- (2) Remove 3 screws that fix the Control PCA and 3 screws that fix the connectors to take out the Control PCA.



<Installing>

Follow the removing procedure in reverse. When connecting the connectors, align and gently insert the cable to avoid bending connector pins.

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4-12 Removing/Installing the parts in the Flatbed

4-12-1 How to remove/install the Document Cover

NOTICE

Refer to [Section 6-21](#) for the part number of the replacement part.

<Removing>

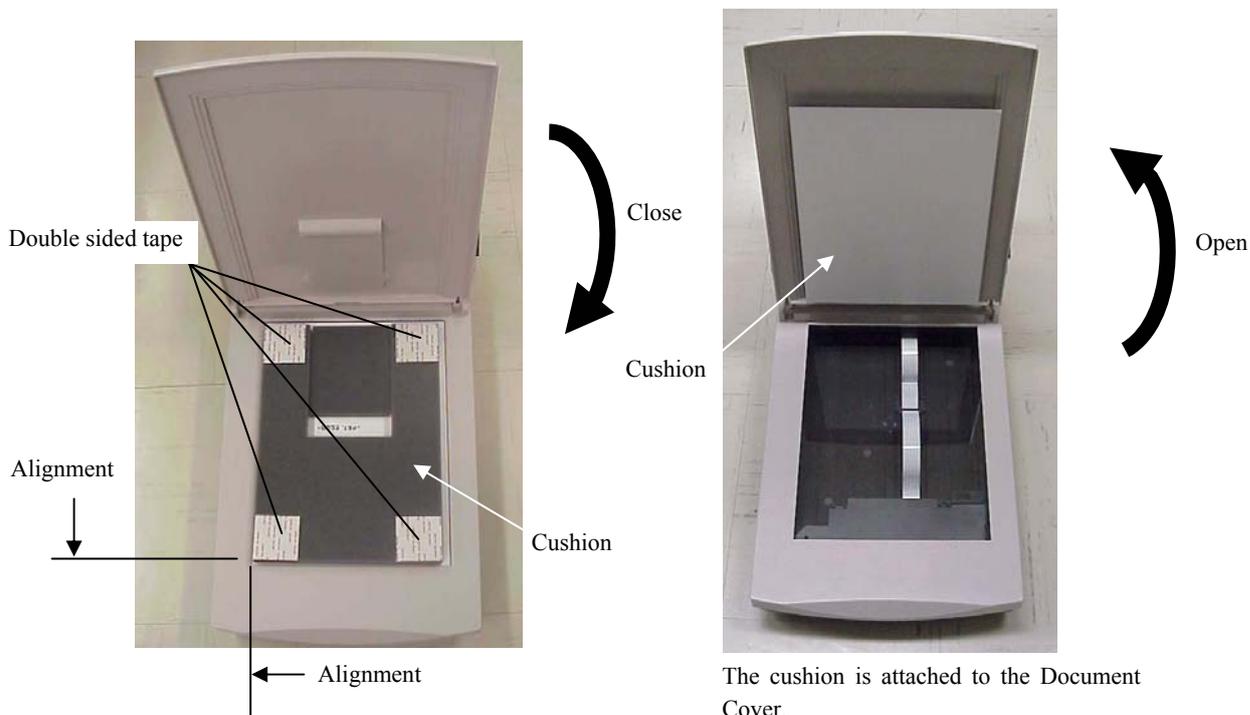
1. Remove the Document Cover from the flatbed by lifting it up.



<Installing>

New Document Cover comes with Document Cover and cushion separated. When installing the new Document Cover, attach the cushion to the Document Cover by referring the procedures below.

1. Install the Document Cover into the scanner.
2. Locate the cushion on the glass surface of the document bed with white side facing down, and remove the protection sheet from the double sided tape on cushion.
3. Slowly close the Document so that the cushion is attached to the Document Cover.
4. Take out the Document Cover from the scanner. Press the cushion towards the cover to fix it.



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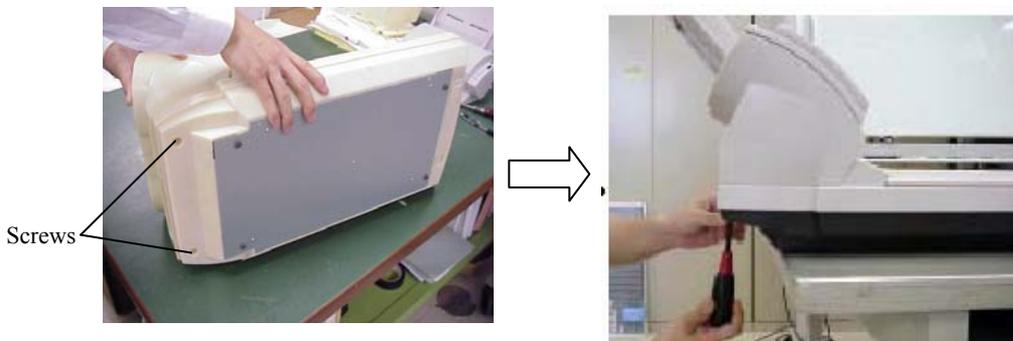
4-12-2 How to remove/install the Joint PCA

NOTICE

Refer to [Section 6-22](#) for the part number of the replacement part.

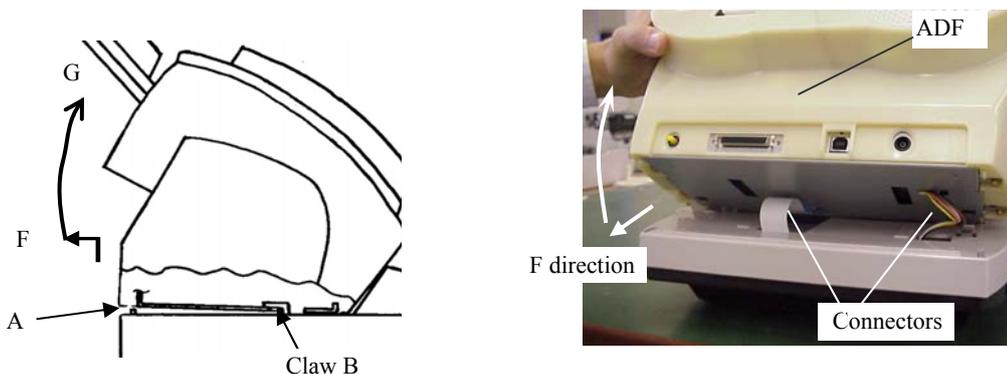
<Removing>

- (1) Remove the Document Cover. (Refer to [Section 4-12-1](#))
- (2) Put the scanner on the table with its edge run off the table. Remove 2 screws from the bottom of the scanner.

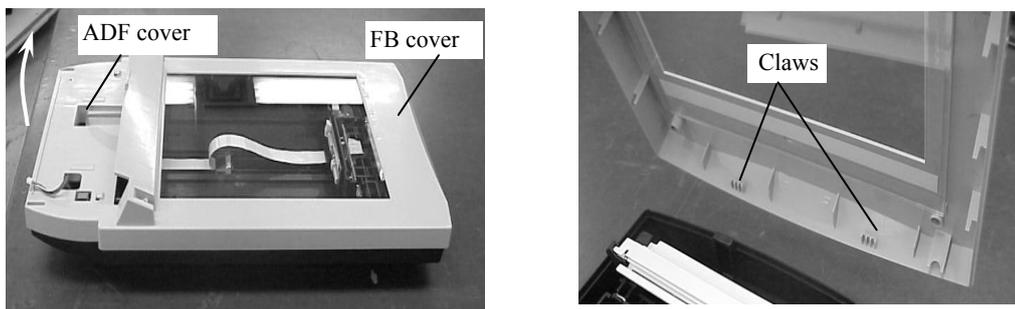


- (3) Tilt the ADF to release it from protrusion A. Then slide the ADF in the F direction and unlatch the claw B from the ADF. Rotate the ADF in G direction and keep the scanner as shown in the photo on the right below.

Note: Do not lift the ADF up with the cables connected to avoid braking of wire.

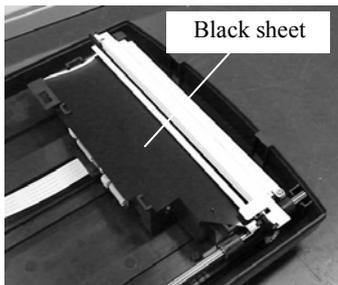


- (4) Disconnect 2 connectors and take out the ADF section.
- (5) Raise one side of the FB cover as shown by an arrow below to detach claw A, and remove FB cover.

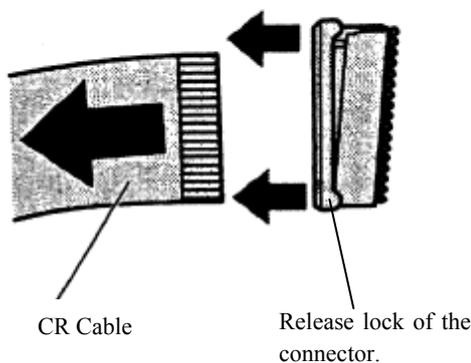
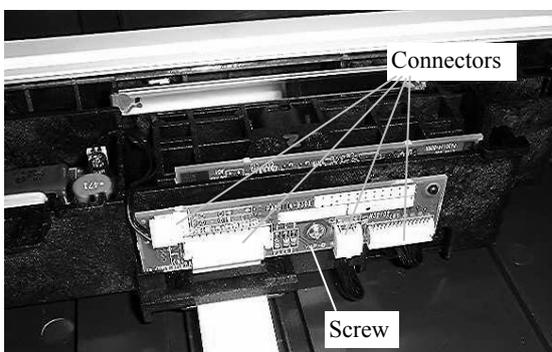


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- (6) Remove a black sheet from Carrier unit.



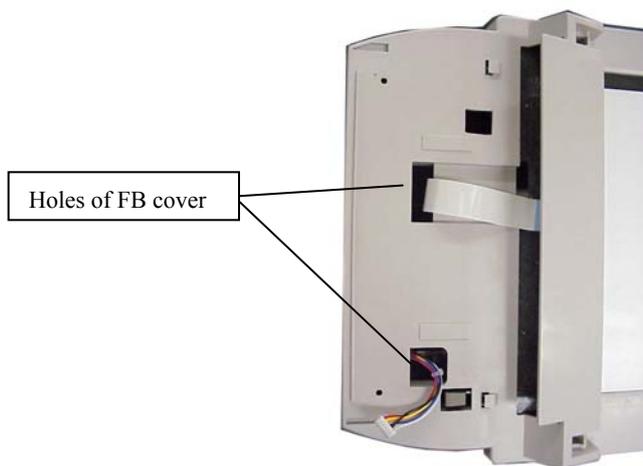
- (7) Disconnect 4 connectors, one each for the CR Cable, Lamp Inverter, Sensor, Optical Unit, and remove a fixing screw to take out the Joint PCA. Release the lock and disconnect the carrier cable.
- (8) When removing the CR cable, unlock the connector as shown in the photo on the right below.



<Installing>

Follow the removing procedure in reverse.

When assembling ADF, put the cables into the holes of FB cover to avoid being pinched by ADF unit and interfering with the carrier unit.



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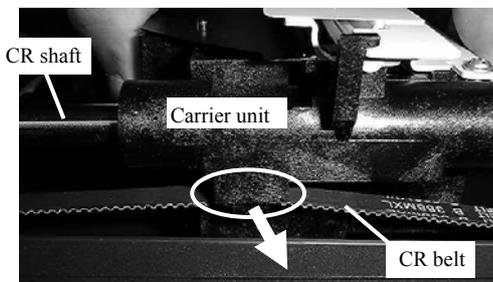
4-12-3 How to remove/install the CR Cable/Sensor EM

NOTICE

Refer to [Section 6-20](#) for the part number of the replacement part.

<Removing>

- (1) Remove the Document Cover. (Refer to [Section 4-12-1](#))
- (2) Remove the ADF section and FB Cover. (Refer to steps (2) and (5) in [Section 4-12-2](#))
- (3) Raise the Carrier Unit and CR shaft to remove the belt in the direction of arrow (horizontal) from the Carrier Unit.



- (4) Disconnect the CR shaft and turn the Carrier Unit upside down.

NOTICE

To prevent the CR shaft from rusting, use a cloth or gloves when holding the CR shaft.

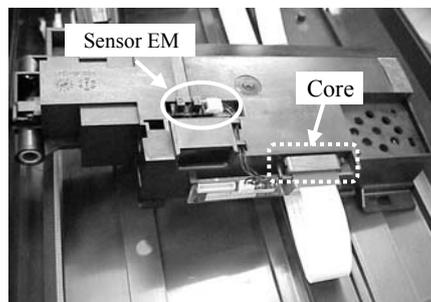
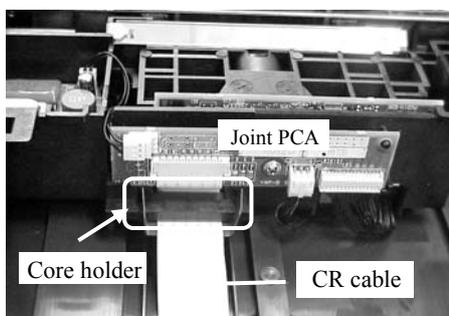
Replacing Sensor EM

Unlatch the claw, remove the Sensor EM (circle in the photo on the right below), and remove the connector from the Sensor.

Replacing CR Cable

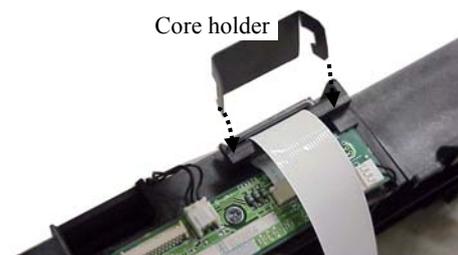
Remove the core holder (solid square in the photo on the left below), and remove the core (dotted square in the photo on the right below). Disconnect the CR cable from the Joint PCA connector.

Note: When removing the core, take care not to break claws.



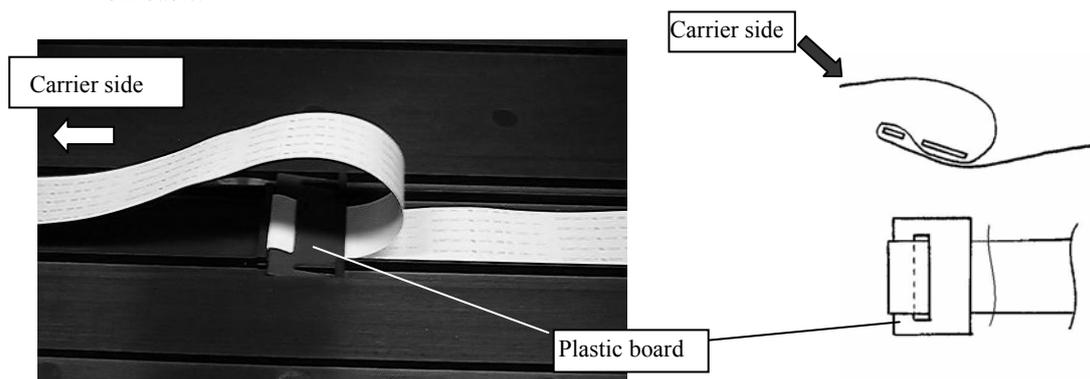
NOTICE

The core holder is placed in the hole of core and installed in the CR frame.



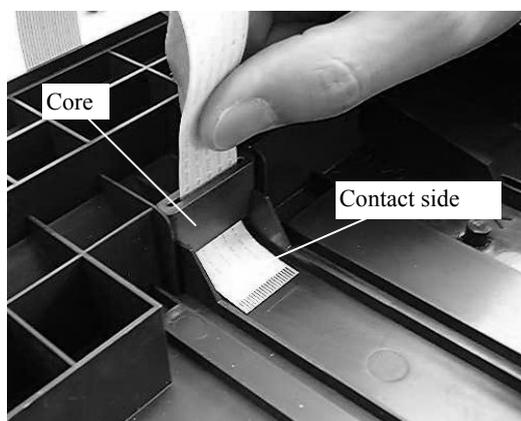
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- (5) Detach the plastic board that fixes the CR Cable in the center from the base frame. Remove the plastic board from the CR Cable.



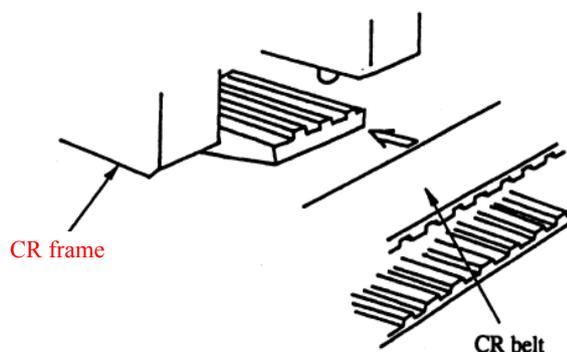
<Installing>

- 1) Install the CR Cable into the core of the CR frame so that its contact side faces up. For easier installation, put a crease in the CR Cable near the contact part (See photo below.)
- 2) Then, mount the plastic board by referring to the figure in procedure (5). For later procedure, follow the removing procedure in reverse.



NOTICE

Before closing the FB cover, make sure that the CR belt is placed in the flute of the Carrier.



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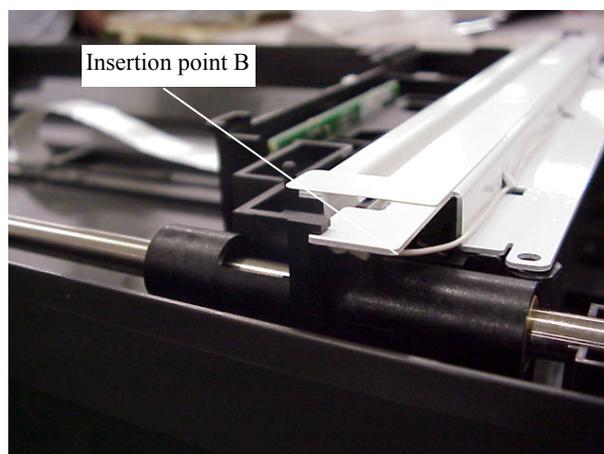
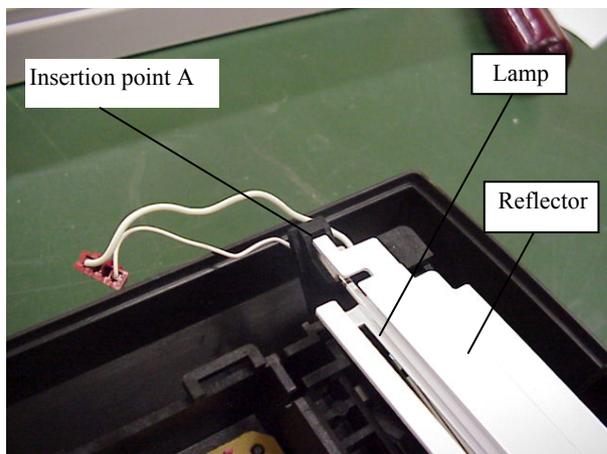
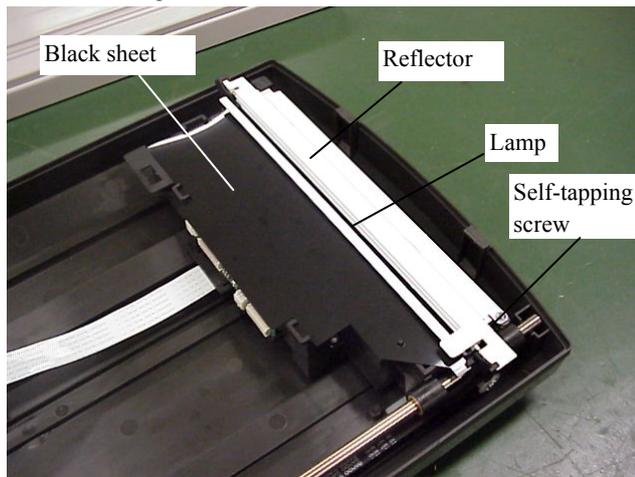
4-12-4 How to remove/install the Lamp (for FB scanning)

NOTICE

Refer to [Section 6-3](#) for the part number of the replacement part.

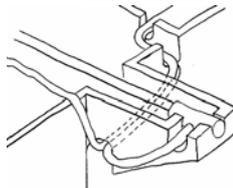
<Removing>

- (1) Remove the Document Cover. (Refer to [Section 4-12-1](#))
- (2) Remove the ADF section and FB Cover. (Refer to steps (2) and (3) in [Section 4-12-2](#))
- (3) Remove the black sheet and disconnect the Lamp cable from the connector of Lamp Inverter. (Disconnect the connector first in order not to damage the cable.)
- (4) Remove a self-tapping screw and take out the assembly of reflector and Lamp from insertion point A and B with care. Be careful not to apply too much force as the Lamp is easy to break.
- (5) Remove the reflector from the Lamp.



<Installing>

- (1) Follow the removing procedure in reverse. Make sure that the Lamp cable is routed in the way shown below.
- (2) After mounting, conduct the following adjustment:
 - White level adjustment (Refer to [Section 5-1-5](#))
 - Offset adjustment (Refer to [Section 5-1-4](#))
 - Magnification adjustment (Refer to [Section 5-1-3](#))



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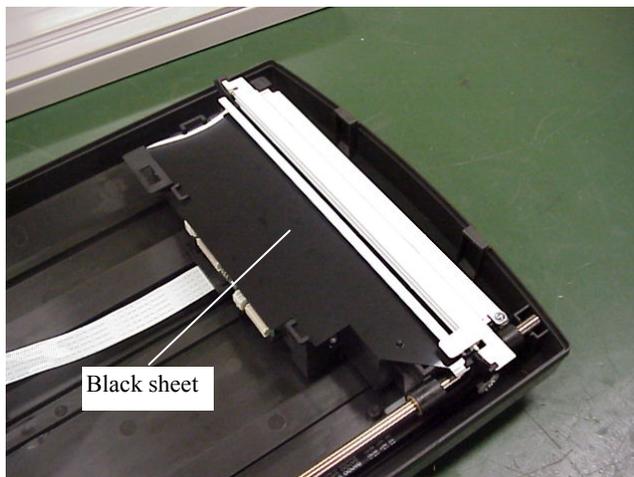
4-12-5 How to remove/install the Lamp Inverter (for FB scanning)

NOTICE

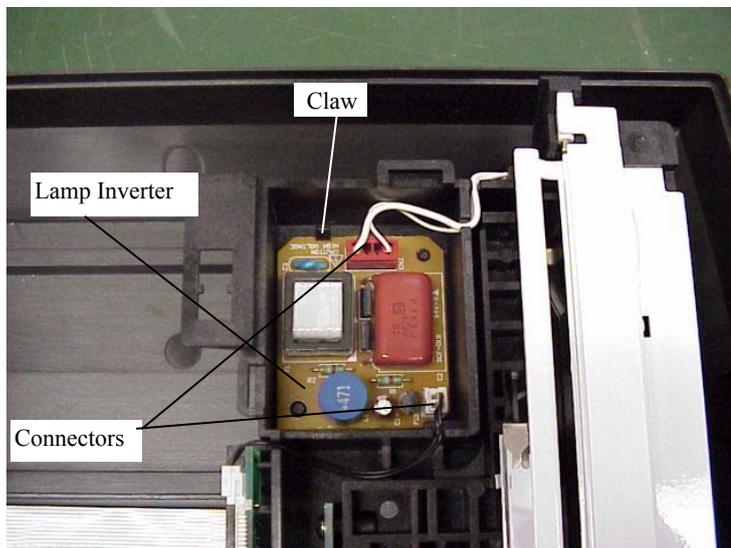
Refer to [Section 6-2](#) for the part number of the replacement part.

<Removing>

- (1) Remove the Document Cover. (Refer to [Section 4-12-1](#))
- (2) Remove the ADF section and FB Cover. (Refer to steps (2) and (3) in [Section 4-12-2](#))
- (3) Remove the black sheet.



- (4) Detach a claw that fixes the Lamp Inverter. Raise the Lamp Inverter and remove 2 connectors to take out the Lamp Inverter.



<Installing>

Follow the removing procedure in reverse.

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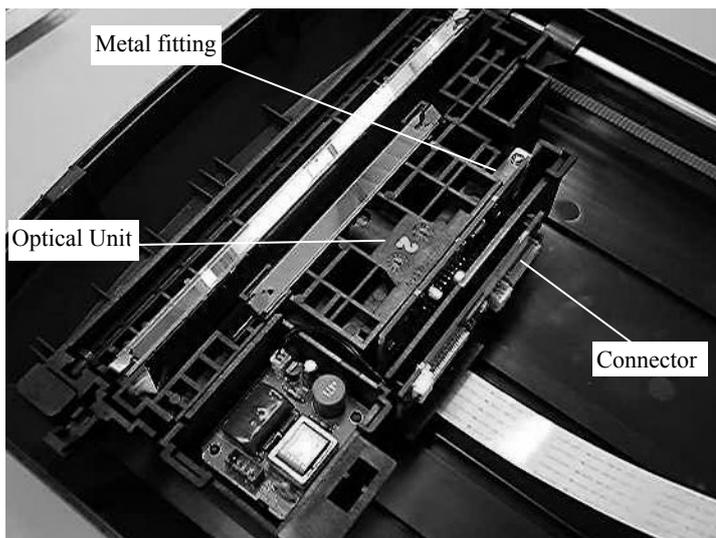
4-12-6 How to remove/install the Optical Unit (for FB scanning)

NOTICE

Refer to [Section 6-7](#) for the part number of the replacement part.

<Removing>

- (1) Remove the Document Cover. (Refer to [Section 4-12-1](#))
- (2) Remove the ADF section and FB Cover. (Refer to steps (2) and (3) in [Section 4-12-2](#))
- (3) Remove the black sheet and Lamp. (Refer steps (3) and (4) in [Section 4-12-4](#))
- (4) Disconnect a connector of the Joint PCA.
- (5) Remove a screw to remove the metal fitting that holds the Optical Unit. Take out the Optical Unit.



- (6) Remove the cable from the Optical Unit. (This is the cable which was removed from the connector in procedure (4))

<Installing>

- (1) Follow the removing procedure in reverse.
- (2) After mounting, conduct the following adjustment:
 - White level adjustment (Refer to [Section 5-1-5](#))
 - Offset adjustment (Refer to [Section 5-1-4](#))
 - Magnification adjustment (Refer to [Section 5-1-3](#))

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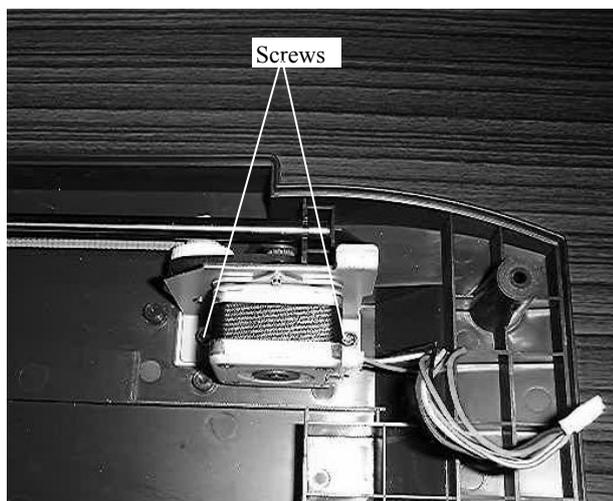
4-12-7 How to remove/install the FB Motor

NOTICE

Refer to [Section 6-19](#) for the part number of the replacement part.

<Removing>

- (1) Remove the Document Cover. (Refer to [Section 4-12-1](#))
- (2) Remove the ADF section and FB Cover. (Refer to steps (2) and (3) in [Section 4-12-2](#))
- (3) Remove two screws and take out the FB Motor.



08

<Installing>

Install the FB Motor by aligning that the metal fitting of the motor with the protrusion of the FB frame. For later procedure, follow the removing procedure in reverse. No adjustment is required after installation.

NOTICE

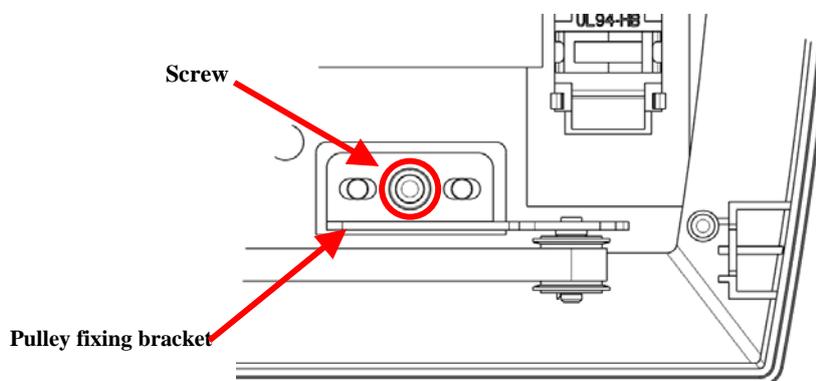
If you have loosened the “pulley fixing bracket” on the opposite side of the FB Motor, you need to readjust the belt tension.

There are two methods of readjustment; use the adjusting spring bundled with the maintenance part, or press the pulley fixing bracket with the specified force.

If the belt tension is adjusted without the adjusting spring, belt tension checking is necessary.

Dispose of the adjusting spring according to the maintenance part disposal method after using it.

Be sure to remove the adjusting spring after belt tension adjustment. Do NOT continue assembling the FB Motor with the adjusting spring attached to the scanner.



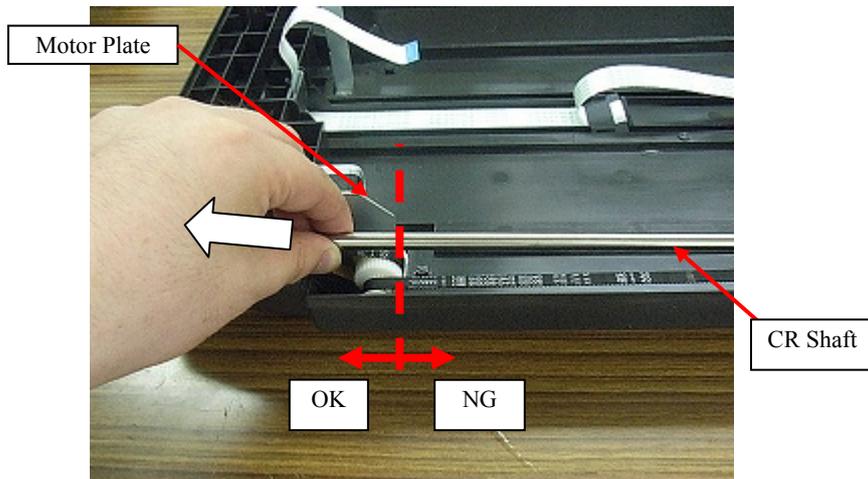
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<Adjustment/Belt tension check>

(1) Holding the left side of the CR Shaft (left of the FB Motor Plate), pull it out of the CR Unit.

NOTICE

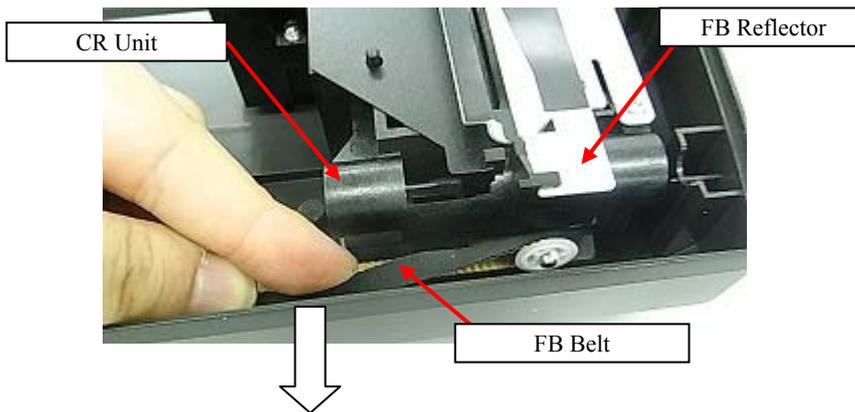
When pulling out the CR Shaft, hold the left area of the FB Motor plate (left of dotted line) to remove.



(2) Remove the FB Belt from the CR Unit.

NOTICE

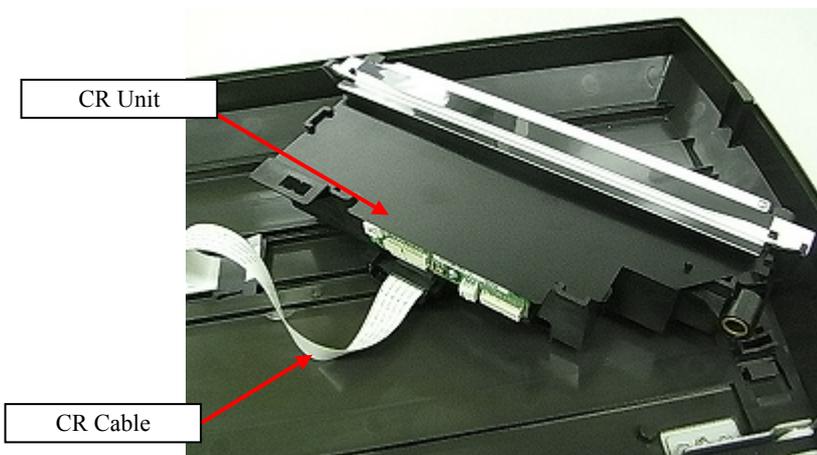
Do not touch the FB Reflector when removing the FB Belt from the CR Unit.



(3) Displace the CR Unit.

NOTICE

Do not damage the CR Cable by folding it when displacing the CR Unit.



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(4) Loosen the screw for the pulley fixing bracket, and joint the pulley fixing bracket temporarily.

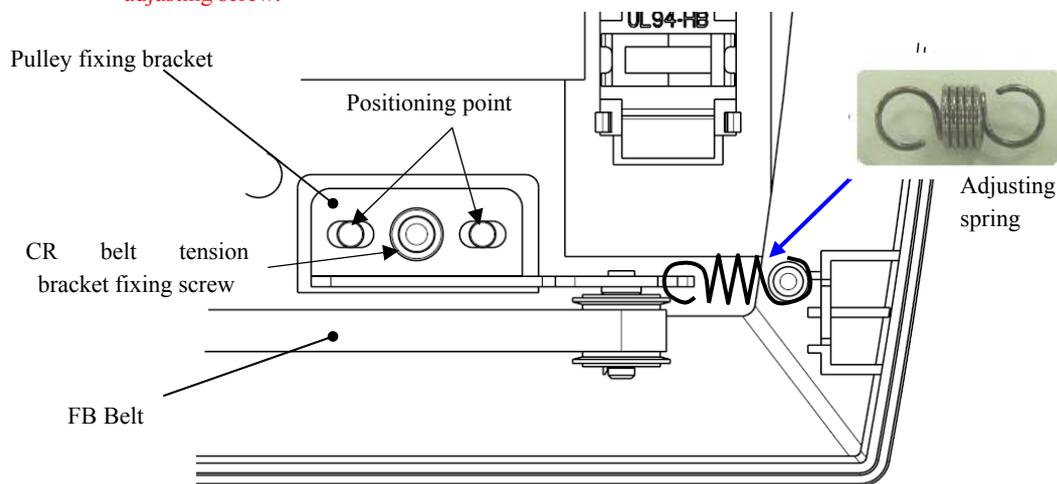
NOTICE

Check that the pulley fixing bracket moves smoothly within the positioning range.

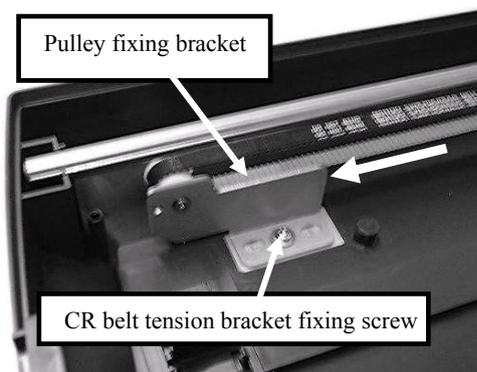
(5) Adjust the FB belt tension.

1. Using the adjusting spring:

- Install the adjusting spring bundled with the maintenance part as shown below.
- Secure the pulley fixing bracket by tightening the CR belt tension bracket fixing screw, and then remove the adjusting screw.



2. Without using the adjusting spring:

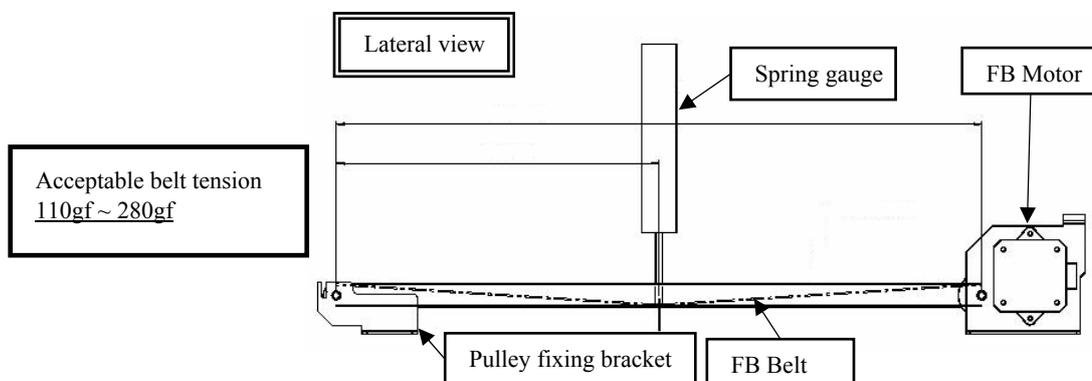


Pushing the pulley fixing bracket in the direction of the arrow, tighten the FB drive belt to secure the pulley fixing bracket.

Check the belt tension by the method described in step (6), and adjust it to become within the allowable range of adjusting value: 110gf~280gf.

Check the belt tension by the following method.

- Press the center of the upper belt with a spring gauge. Measure the load when the upper belt touches the lower belt.
- When the measured value is within the acceptable range, adjustment is complete.
- If the value is out of the acceptable range, readjust the tension.

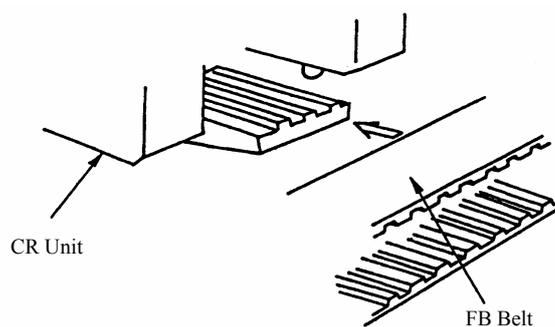


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(6) To Install the FB Belt, FB Cover and ADF Unit, follow the removing procedure in reverse.

NOTICE

Check that the FB Belt is caught in the slot of the CR Unit before closing the FB Cover.



(7) After installation, perform Magnification adjustment (Section 5-1-3), Offset adjustment (Section 5-1-4), and White level adjustment (Section 5-1-5).

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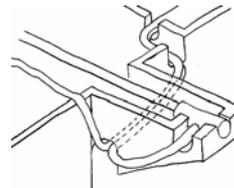
4-12-8 How to remove/install the CR Frame

NOTICE

Refer to Section 6-27 for the part number of the replacement part.

<Removing>

- (1) Remove the Document Cover. (Refer to [Section 4-12-1](#))
 - (2) Remove the ADF section, FB Cover, and Joint PCA. (Refer to steps (2) ~ (8) in [Section 4-12-2](#))
 - (3) Remove the CR belt, Sensor EM, and CR cable. (Refer to steps (3) and (4) in [Section 4-12-3](#))
 - (4) Remove the Inverter. (Refer to steps (3) and (4) in [Section 4-12-5](#))
 - (5) Remove the Lamp. (Refer to steps (4) and (5) in [Section 4-12-4](#))
 - (6) Remove the Optical Unit. (Refer to steps (5) and (6) in [Section 4-12-6](#))
- * The remaining part is CR Frame.

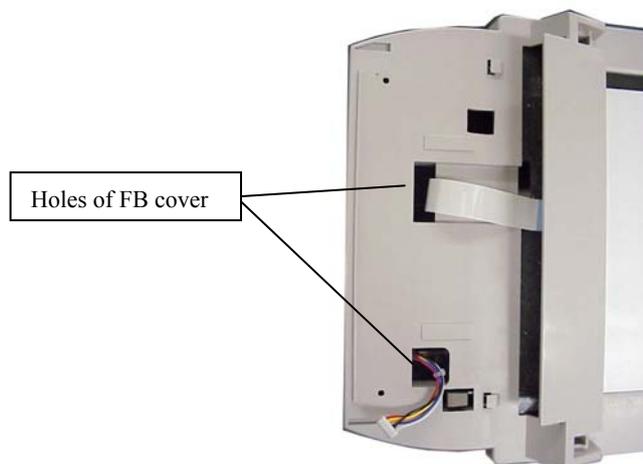


<Installing>

- (1) Follow the removing procedure in reverse.

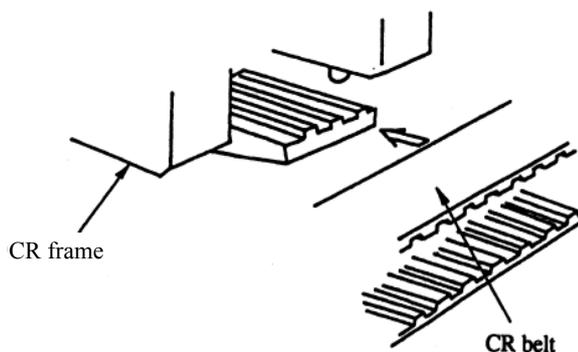
Make sure that the Lamp cable is routed in the way as shown below.

When assembling ADF, put the cables into the holes of FB cover to avoid being pinched by ADF unit and interfering with the carrier unit.



NOTICE

Before closing the FB cover, make sure that the CR belt is placed in the flute of the Carrier.



- (2) After mounting, conduct the following adjustment:

- Offset adjustment (Refer to [Section 5-1-4](#))
- Magnification adjustment (Refer to [Section 5-1-3](#))

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Chapter 5 Adjustment/Settings

5-1 Maintenance Mode

The scanner supports built-in Maintenance mode that allows users to check scanner's performance and settings. This section gives the description of Maintenance mode.

5-1-1 Activating the Maintenance mode

(1) How to activate the Maintenance mode

Open the ADF cover and press the power button once while holding down the **SCAN** button. Keep holding the **SCAN** button down until Screen T02 is displayed. This will put the scanner in to Maintenance mode. While in Maintenance mode, the scanner interface is off-line.

The following display appears during initial processing in Maintenance mode.

Screen T01

Function No.	Power LED	Scanner status
8	ON	Initial processing in Maintenance mode

When Maintenance mode is activated normally after the initial processing, the following display appears.

Screen T04

Function No.	Power LED	Scanner status
8	ON	Maintenance mode #1 selected

(2) Test/adjustment items of the Maintenance mode

The following lists test/adjustment items #1 ~ #7 that are supported by the scanner.

Mode 1: Paper transportation / Sensor / Background changeover test

Mode 2: Main scanning/Sub-scanning magnification adjustment

Mode 3: Offset adjustment

Mode 4: White level adjustment

Mode 5: Consumables counter display and reset

Mode 6: Miscellaneous information display

Mode 7: EEPROM data restore

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(3) Changing Maintenance mode

To change Maintenance modes (#1 ~ #7), press the **Function** button on the activation screen for Maintenance mode. The display changes as follows. Mode #1 is the default mode.

Maintenance mode No.	Display			Maintenance mode	Related section
	Function No. Display	Power LED	Status transition		
#1		ON		Paper transportation / Sensor / Background changeover test	5-1-2
#2		ON		Main scanning / Sub-scanning magnification adjustment	5-1-3
#3		ON		Offset adjustment	5-1-4
#4		ON		White level adjustment	5-1-5
#5		ON		Consumables counter display and reset	5-1-6
#6		ON		Miscellaneous information display	5-1-7
#7		ON		EEPROM data restore	5-1-7
#8		ON		(Reserved) Press Function key to return to #1.	

(4) Starting the Maintenance mode

Select one Maintenance mode and press **Scan**. The scanner activates the selected Maintenance mode.

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5-1-2 Maintenance mode #1: Paper feeding / Sensor / Background changeover test

This mode tests the ADF and FB scanning operation at the specified speed, checks sensor status (ON/OFF) for each of the ADF sensors, and tests Background changeover.

[How to start]

- (1) From screen T04, press the **Function** (Δ or ∇) button to select  (Maintenance mode #1) and press the **Scan** button. The selection screen for scanning speed/sensor/Background changeover test appears. A number is shown on the Function No. Display indicating the selected scanning speed or test mode as follows.

Function No. Display	Scanning speed/test mode	Remarks
0	Monochrome 400 dpi	Default
1	Monochrome 300 dpi	
2	Monochrome 240 dpi	
3	Monochrome 200 dpi	
4	Monochrome 100 dpi	
5	Monochrome 150 dpi	
6	Monochrome 600 dpi	
7	Sensor test	
8	Background changeover test	

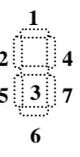
<Paper feeding test>

- (2) Select a scanning speed from 0 to 6 (this varies depending on the scanning resolution) from 0 ~ 6 by pressing the **Function** button.
- (3) To test the continuous feeding operation, press the **Scan** button. The ADF operation is started if there is any paper on the ADF paper chute (Chute unit) (Hopper empty sensor = Sensor EM ON). Without paper on the ADF paper chute (Chute Unit), the FB scanning starts.
- To test the one-sheet feeding operation, while pressing the **Send to** button, press the **Scan** button, which switches to the one-sheet feeding operation mode. Then let go of the **Send to** button, then the **Scan** button in order. The ADF operation is started if there is any paper on the ADF paper chute (Chute unit) (Hopper empty sensor = Sensor EM ON). Without paper on the ADF paper chute (Chute Unit), the FB scanning starts.

<Sensor test>

- (2) By pressing the **Scan** button while “7” is shown on the display, the scanner enters Sensor test mode. The following table shows how the sensor status is displayed while the sensor test is in progress.

Screen T11

Function No. Display	Description	Display
	2: indicates Hopper empty sensor status	Illuminates when the sensor is ON (Paper is loaded on the ADF chute) *2
	3: indicates PICK sensor status	Illuminates when the sensor is ON (Paper is detected)
	4: indicates TOP sensor status	Illuminates when the sensor is ON (Paper is detected)
	5: indicates Cover open sensor status	Illuminates when the sensor is OFF (Cover is open) *1
	7: indicates multi feed sensor (US Sensor) status	Illuminates when the sensor is ON (Paper is detected) *2

*1: This sensor test should be conducted by opening/closing the ADF cover. If the Cover open sensor is pressed by anything while the ADF cover is open, the Multi feed sensor (US Sensor) turns ON, causing position “7” to light as well.

*2: The confirmation of US sensor is available only when the document is fed by pressing the **Function** button as described below. You cannot confirm US sensor by just inserting document (no feeding) between US sensors.

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During the sensor test, you can check the sensor status (ON/OFF) when the document passes through the ADF by the following procedure:

1. Press the **Function** button. The ADF motor starts to rotate.
2. Set the document into the ADF paper chute (Chute Unit).

<Background changeover test>

- (2) By pressing the **Scan** button while "8" is shown on the display, the scanner starts Background changeover test.
The testing is confirmed by opening the ADF.

[How to end]

Press the **Send to** button. The test stops and the Maintenance mode selection Screen T04 appears. The ADF continuous feeding operation is also terminated when no more paper on the ADF paper chute (Chute unit).

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5-1-3 Maintenance mode #2: Main scanning / Sub-scanning magnification adjustment

In this mode, the magnification correction values for main/sub scanning are automatically calculated to satisfy the following adjustment value.

Adjustment value

Main scanning: Within $\pm 1.0\%$

Sub scanning: Within $\pm 1.0\%$ (Without stop and start during scanning)

: Within $\pm 2.0\%$ (With stop and start during scanning)

NOTICE

Before this adjustment, please prepare the Test sheet described in Figure 5-1-3.

If Main-scanning magnification (ADF front or back, or FB) is adjusted, then run Offset adjustment (ADF front or back, or FB) as described in Section 5-1-4.

[How to start]

- (1) Selects Maintenance mode #2 () in screen T04 and press **Scan** button. A number appears on the Function No. Display indicating the magnification to be adjusted.

Function No. Display	Magnification to be adjusted	Remarks
0	ADF sub- scanning magnification adjustment	Default setting
1	ADF main scanning magnification adjustment (front)	
2	ADF main scanning magnification adjustment (back)	
3	FB sub-scanning magnification adjustment	
4	FB main scanning magnification adjustment	

- (2) Select the magnification you want to change by pressing **Function** button.

- (3) When adjusting the ADF, set the adjustment test sheet on the ADF paper chute (Chute Unit), and adjust the side guide to the width of the test sheet.

For the FB adjustment, set the test sheet on the Document bed to be aligned with the reference point, and remove the Document Cover. (Refer to the Operator's Guide.) Avoid working near light source such as fluorescent lamp.

Press **Scan** button to start the adjustment.

[How to end]

Press **Send to** button during operation. The operation stops and the Maintenance mode selection screen (T04) appears.

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[Display after adjustment]

After the modification adjustment, the following display appears depending on its terminated status.

(1) When the modification adjustment is terminated normally

Screen T21

Function No. Display	Scanner status
	Displays "o" without blinking. The adjustment has terminated normally.

<Available buttons at screen T21>

Function button: Displays screen T22 to write the correction value into EEPROM.

Send to button: Terminates this mode and returns to screen T04.

Screen T22

Function No. Display	Scanner status
	"o" (lower half) blinks. Confirming whether the correction value shall be written in EEPROM or not.

<Available buttons at screen T22>

Scan + **Function** button: Start writing the magnification correction value into EEPROM. During writing operation, screen T23 displayed, and when it finishes, screen T24 appears.

Send to button: Terminates this mode and returns to screen T04.

Screen T23

Function No. Display	Scanner status
	"L" lights without blinking. Correction value is being written in EEPROM.

Note: While screen T23 is displayed, no button can function.

Screen T24

Function No. Display	Scanner status
	"o" (upper half) lights without blinking. The value has written normally.

<Available buttons at screen T24>

Send to button: Terminates this mode and return to screen T04.

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(2) When the magnification adjustment is terminated abnormally

Screen T25

Function No. Display	Scanner status
	Displays “c” without blinking. The adjustment has terminated abnormally.

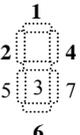
Note: The major reason of abnormal termination is incorrect setting of the test sheet. Set the test sheet correctly and try the magnification adjustment again.

<Available buttons at screen T25>

Function button: Displays error information (screen T26)

Send to button: Terminates this mode and returns to screen T04.

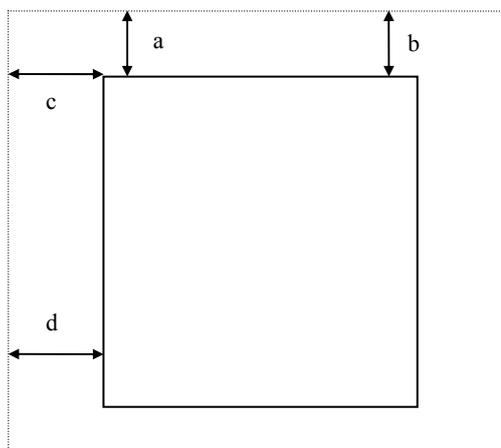
Screen T26

Function No. Display	Description	Adjustment mode (*1)				Countermeasure when abnormal termination frequently occurs
		0	1,2	3	4	
	1: cannot detect the leading edge of the document	√		√		Conduct necessary operation by referring to Section 3-3-7 or step (2) and later in Section 3-3-10 .
	2: cannot detect the left edge of the document		√		√	
	5: Too large skew A			√		
	4: cannot detect the right edge of the document		√		√	
	7: Too large skew B		√		√	
	6: cannot detect the trailing edge of the document	√		√		

(*1) 0 : ADF sub scanning magnification adjustment 1,2: ADF front/back main scanning magnification adjustment
 3: FB sub scanning magnification adjustment 4: FB main scanning magnification adjustment

Skew A and B are calculated as follows:

Skew A = a – b
 Skew B = c – d



<Available buttons at screen T26>

Send to button: Terminates this mode and returns to screen T04.

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[Test sheet]

Use the test sheet for magnification/offset adjustment that meets the following specification. (for ADF and FB)

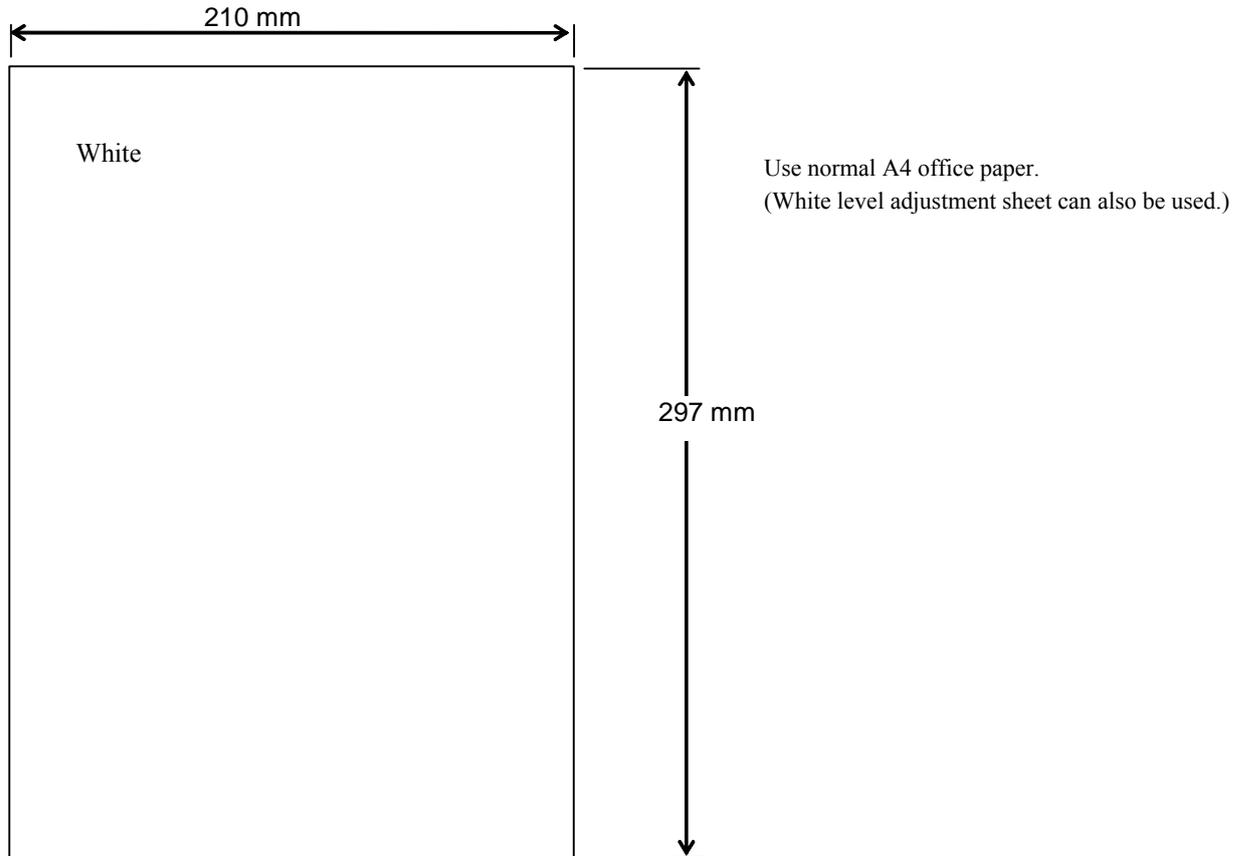


Figure 5-1-3 Test sheet for FB magnification/offset adjustment

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5-1-4 Maintenance mode #3: Offset adjustment

In this mode, the offset correction values for main/sub scanning are automatically calculated to satisfy the following offset values:

Offset value

Main scanning: The largest offset of A6 – A4 size of document shall be:
± 24 dot (@600dpi)

Sub scanning: The largest offset of A6 – A4 size of document shall be:
± 33 dot (@600dpi)

NOTICE

Before this adjustment, please prepare the Test sheet described in Figure 5-1-3.

Also, before adjusting offset (ADF front or back, or FB), run main-scanning magnification adjustment (ADF front or back, or FB) by referring to [Section 5-1-3](#).

[How to start]

- (1) Selects Maintenance mode #3 () in screen T04 and press **Scan** button. A number appears on the Function No. Display indicating the offset to be adjusted as follows.

Function No. Display	Offset to be adjusted	Remarks
0	ADF front	Default
1	ADF back	
2	FB	

- (2) Change the selection by pressing **Function** button.

- (3) When adjusting the ADF, set the test sheet (Figure 5-1-3) on the ADF paper chute (Chute Unit), and adjust the side guide to the width of the test sheet.

For the FB adjustment, set the test sheet (Figure 5-1-3) on the Document bed to be aligned with the reference point, and remove the Document Cover. (Refer to the Operator's Guide.) Avoid working near light source such as fluorescent lamp.

Press **Scan** button to start the adjustment operation.

[How to end]

Press **Send to** button during operation. The operation stops and the Maintenance mode selection screen (T04) appears.

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[Display after adjustment]

After the offset adjustment, the following display appears depending on its terminated status.

(1) When the offset adjustment is terminated normally

Screen T31

Function No. Display	Scanner status
	Displays "o" without blinking. The adjustment has terminated normally.

<Available buttons at screen T31>

Function button: Displays screen T32 to write the correction value into EEPROM

Send to button: Terminates this mode and return to screen T04.

Screen T32

Function No. Display	Scanner status
	"o" (lower half) blinks. Confirming whether the correction value shall be written in EEPROM or not.

<Available buttons at screen T32>

Scan + **Function** button: Start writing the offset correction value into EEPROM. During writing operation, screen T33 displayed, and when it finishes, screen T34 appears.

Send to button: Terminates this mode and returns to screen T04.

Screen T33

Function No. Display	Scanner status
	"L" lights without blinking. Correction value is being written in EEPROM.

Note: While screen T33 is displayed, no button can function.

Screen T34

Function No. Display	Scanner status
	"o" (upper half) lights without blinking. The value has written normally.

<Available buttons at screen T34>

Send to button: Terminates this mode and returns to screen T04

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(2) When the offset adjustment is terminated abnormally

Screen T35

Function No. Display	Scanner status
	Displays "c" without blinking. The adjustment has terminated abnormally.

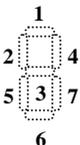
Note: The major reason of abnormal termination is incorrect setting of the test sheet. Set the test sheet correctly and try the magnification adjustment again.

<Available buttons at screen T35>

Function button: Displays error information (screen T36)

Send to button: Terminates this mode and returns to screen T04.

Screen T36

Function No. Display	Description	Adjustment mode (*1)			Countermeasure when abnormal termination frequently occurs
		0	1	2	
	1: cannot detect the leading edge of the document (black detection failed)	√	√	√	Conduct necessary operation by referring to Section 3-3-6 or step (2) and later in Section 3-3-9 .
	2: cannot detect the left edge of the document (black detection failed)	√	√	√	
	3: cannot detect the leading edge of the document (white detection failed)	√	√	√	
	5: cannot detect the left edge of the document (white detection failed)	√	√	√	
	4: Large skew A	√	√	√	
	7: Large skew B	√	√	√	

(*1) 0: ADF front 1: ADF back 2: FB

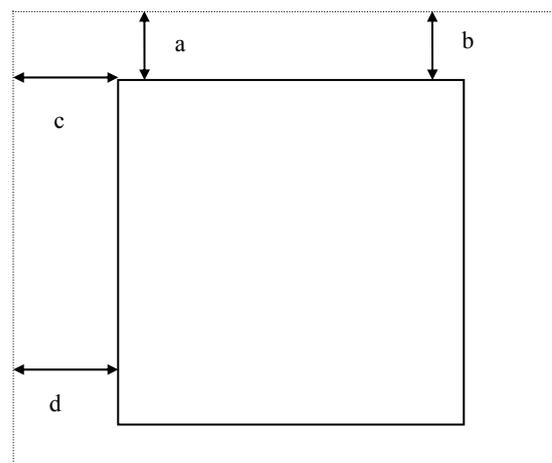
<Available buttons at screen T36>

Send to button: Terminates this mode and returns to screen T04.

Skew A and B are calculated by the following expression.

$$\text{Skew A} = a - b$$

$$\text{Skew B} = c - d$$



[Test sheet]

Use the same sheet as used for the magnification adjustment. See Section 5-1-3.

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5-1-5 Maintenance mode #4: White level adjustment

In this mode, the white level correction values for main/sub scanning are automatically adjusted.

NOTICE

Before this adjustment, please prepare the Test sheet described in [Section 4-4](#).

[How to start]

- (1) Selects Maintenance mode #4 () in screen T04 and press **Scan** button. A number appears on the Function No. Display indicating the white level to be adjusted as follows.

Function No. Display	White level to be adjusted	Remarks
0	ADF front	Default Use the white level adjustment sheet described in Section 4-4 .
1	ADF back	Use the white level adjustment sheet described in Section 4-4 .
2	FB	

- (2) Change the selection by pressing **Function** button.
- (3) When adjusting the ADF, set the adjustment test sheet on the ADF paper chute (Chute Unit) and adjust the side guide to the width of the test sheet. Either side of the adjustment test sheet can be used.
For the FB adjustment, set the test sheet on the Document bed to be aligned with the reference point (left of the Document bed, front edge), and close the Document Cover. (Refer to the Operator's Guide.)

Note: The adjustment starts approx. 10 seconds after pressing **Scan** button to make the light intensity becomes stable.

Press **Scan** button to start the adjustment operation.

[How to end]

Press **Send to** button during operation. The operation stops and the Maintenance mode selection screen (T04) appears.

Note: After reading the white level adjustment sheet, it takes approx. 10 seconds for the scanner to calculate the level adjustment and close adjustment.

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[Display after adjustment]

After the white level adjustment, the following display appears depending on its terminated status.

(1) When the white level adjustment is terminated normally

Screen T41

Function No. Display	Scanner status
	Displays "o" without blinking. The adjustment has terminated normally.

<Available buttons at screen T41>

Function button: Displays screen T42 to write the correction value into EEPROM.

Send to button: Terminates this mode and returns to screen T04.

Screen T42

Function No. Display	Scanner status
	"o" (lower half) blinks. Confirming whether the correction value shall be written in EEPROM or not.

<Available buttons at screen T42>

Scan + **Function** button: Start writing the white level correction value into EEPROM. During writing operation, screen T43 displayed, and when it finishes, screen T44 appears

Send to button: Terminates this mode and returns to screen T04.

Screen T43

Function No. Display	Scanner status
	"L" lights without blinking. Correction value is being written in EEPROM.

Note: While screen T43 is displayed, no button can function.

Screen T44

Function No. Display	Scanner status
	"o" (upper half) lights without blinking. The value has written normally.

<Available buttons at screen T44>

Send to button: Terminates this mode and returns to screen T04.

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(2) When the white level adjustment is terminated abnormally

Screen T45

Function No. Display	Scanner status
	Displays "c". The adjustment has terminated abnormally.

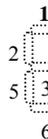
Note: The major reason of abnormal termination is incorrect setting of the test sheet. Set the test sheet correctly and try the magnification adjustment again.

<Available buttons at screen T45>

Function button: Displays error information (screen T46)

Send to button: Terminates this mode and returns to screen T04.

Screen T46

Function No. Display	Description	Countermeasure when abnormal termination frequently occurs
	1: media error The tested sheet may not be a specified one. Please confirm the test sheet is good.	It seems Lamp or Optical Unit is faulty. Replace defective parts.

<Available buttons at screen T46>

Send to button: Terminates this mode and return to screen T04.

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5-1-6 Maintenance mode #5: Consumable counter display and reset

In this mode, the following consumable counter is displayed and reset:

- Pick counter (Abrasion counter for Pick roller)
- Pad counter (Abrasion counter for Pad ASY)

[How to operate]

- (1) Selects Maintenance mode #5 () in screen T04 and press **Scan** button. A number appears on the Function No. Display indicating the counter as follows.

Function No. Display	White level to be adjusted	Remarks
0	Pick counter (Abrasion counter for Pick roller)	Default
1	Pad counter (Abrasion counter for Pad ASY)	

- (2) Change the selection by pressing **Function** button.

- (3) The counter is displayed as follows when pressing **Scan** button.

Counter	Display
Pick counter (Abrasion counter for Pick roller)	The counter displays 8 digits in total, 1 number at a time, from left digit to right digit. (If the counter has not reached 8 digits yet, 0 is added to blank digits.) The symbol “-” is displayed before the first number, indicating the counter display starts. The counter displays “0” until it reaches 500, and increases in 10 increments after 500. eg. When the counter is “16,245”, “-00016245” is displayed in the following order: “-” → “0” → “0” → “0” → “1” → “6” → “2” → “4” → “5”
Pad counter (Abrasion counter for Pad ASY)	See above.

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(4) The following buttons are available during counter display.

Function button: Displays screen T51 to reset the counter.

Send to button: Terminates this mode and returns to screen T04.

Screen T51

Function No. Display	Scanner status
	“o” (lower half) blinks. Confirming whether the counter shall be reset or not.

<Available buttons at screen T51>

Scan + **Function** button: Start resetting the displayed counter value to 0. During writing operation, screen T52 displayed, and when it finishes, screen T53 appears.

Note: After reset, the counter value below 500 remains without being reset and that value will be the initial value of the internal counter, but this is not an error.

eg.) When “52,168” is reset, 168 remains and the internal counter will start counting from 168, while Function No. Display shows 0.

Send to button: Terminates this mode and returns to screen T04.

Screen T52

Function No. Display	Scanner status
	“L” lights without blinking. The counter is being reset.

Note: While screen T52 is displayed, no button can function.

Screen T53

Function No. Display	Scanner status
	“o” (upper half) lights without blinking. Counter reset has done.

<Available buttons at screen T53>

Send to button: Terminates this mode and returns to screen T04.

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5-1-7 Maintenance mode #6: Miscellaneous information display

In this mode, the following information counter is displayed:

- Firmware version number
- Starting date of the scanner *
- The accumulated number of paper that have been scanned by ADF

* : This indicates the date when the scanner is activated by the driver first. This information is only available if the driver supports this function.

[How to start]

- (1) Selects Maintenance mode #6 () in screen T04 and press **Scan** button. A number appears on the Function No. Display indicating the information.

Function No. Display	Display	Remarks
0	Firmware version	Default
1	Starting date of the scanner	
2	Accumulated number of paper scanned by ADF	
3	Accumulated number of paper scanned by FB	

- (2) Change the selection by pressing **Function** button.

- (3) The information is displayed as follows when pressing **Scan** button.

Information	Display
Firmware version number	The firmware version number is displayed in 4 digits from left digits to right digits, following the symbol “-”. eg. When the version is “A00” (*1), “A” is converted to “01” (*2), so the scanner displays “-0100” in the following order: “-” → “0” → “1” → “0” → “0”
Starting date	Starting date of the scanner is displayed in 6 digits, 2 digits for “Year (Christian calendar)”, 2 digits for “Month”, and 2 digits for “Date”, following the symbol “-”. You cannot reset the date. eg. When the starting date is January 31st, 2002, “020131” is displayed in the following order: “-” → “0” → “2” → 0 → “1” → “3” → “1”
The accumulated number of paper scanned by ADF	The accumulated number of paper scanned by ADF is displayed in 8 digits from left digits to right digits, following the symbol “-”. (If the counter does not reach 8 digits, 0 is added to blank digits.) The counter displays “0” until it reaches 500, and increases in 10 increments after 500. You cannot reset this counter. eg. When the accumulated number is “16,245”, “00016245” is displayed in the following order: “-” → “0” → “0” → “0” → “1” → “6” → “2” → “4” → “5”

*1: The firmware version is normally expressed by an alphabet, such as A, B or C. However, if the firmware is a beta version, two digits are added after alphabet character, such as A01, A02 or A03. So the firmware version like A00, B00 or C00 means

this is an official version.

*2: As 8 segment display cannot display alphabet, alphabet is expressed by two digits as follows:

A	B	C	-----	J	K	L
01	02	03	-----	10	11	12

[How to end]

Press **Send to** button. The display returns to screen T04.

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5-1-8 Maintenance mode #7: EEPROM data restore

When replacing the Panel PCA, the EEPROM data on the Panel PCA shall be moved to the flash memory of the Control PCA. In this mode, the data is restored from the Control PCA to the Panel PCA.

[How to start]

(1) Selects Maintenance mode #7 () in screen T04 and press **Scan** button. The following display appears.

Screen T71

Function No. Display	Scanner status
	“o” (lower half) blinks. Confirming whether the data shall be reset or not.

<Available buttons at screen T71>

Scan + **Function** button: Returns the data from the Control PCA to the EEPROM on the Panel PCA. During restoring operation, screen T72 is displayed.

Send to button: Terminates this mode and returns to screen T04.

Screen T72

Function No. Display	Scanner status
	“L” lights without blinking. The data being restored.

Note: While screen T72 is displayed, no button can function.

[Display of the result]

(1) When the data restore terminated normally, the following display appears.

Screen T73

Function No. Display	Scanner status
	Displays “o” (upper half) without blinking. The data has restored normally.

<Available buttons at screen T73>

Send to button: Terminates this mode and returns to screen T04.

(2) When no data exists in the Control PCA, the following display appears.

Screen T74

Function No. Display	Scanner status
	Displays “c” without blinking. No data exists in the Control PCA.

<Available buttons at screen T74>

Send to button: Terminates this mode and returns to screen T04.

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5-2 Saving EEPROM Data

The EEPROM data on the Panel PCA can be saved on the flash memory of the Control PCA. This operation is needed before replacing the Panel PCA. Since this operation is taken when the Panel PCA is malfunctioning, save data by following the procedure below without using the operator panel.

NOTICE

- Do not conduct this procedure unless the Panel PCA is malfunctioning.
- The Panel PCA from which the data was saved to the Control PCA cannot be used again. (See NOTICE.)
- Make sure to prepare a new Panel PCA before saving the EEPROM data.

[How to save EEPROM data on the Control PCA]

1. Open the ADF. While pressing the TOP sensor lever and lifting up the Hopper empty sensor lever, power on the scanner. “P” → “H” are displayed.
2. Leave your fingers from TOP sensor and Hopper empty sensor lever. Then press TOP sensor lever two times, so that the time interval between pressing and removing is more than 1 second.
3. Close the ADF. “L” is displayed when the Function No. Display is working normally.
4. After more than 5 seconds elapse, open the ADF.

When the EEPROM data is successfully saved, the Lamp of ADF front blinks 3 times and “o” (upper half) is displayed on the Function No. Display.

In case that the EEPROM data is not successfully saved, the Lamp does not blink and “c” is displayed on the Function No. Display.

NOTICE

If EEPROM data is saved in the Control PCA successfully, the scanner writes some information on the Panel PCA that disables the usage of it. The replacement of the Panel PCA is required after saving the EEPROM data to the Control PCA. If the scanner is turned on without replacing the Panel PCA, “E” and “6” are displayed alternately on the Operator Panel which signifies an error.

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5-3 Emulation Mode

The scanner can scan the documents with the emulation mode of following scanners.

- fi-4220C
- fo-4220C2

(1) How to activate Emulation mode

Open the cover. Then, press **Power** button while pressing **Function** button. Keep pressing **Function** button until scanner shows Screen B on the panel. The interface between PC and scanner is entirely disabled in this mode. The following display appears during the scanner initialization in the emulation switching mode activation.

Screen A

Function No. Display	Power LED	Description
8	ON	During initial processing

The console display changes as follows after initial processing.

Screen B

Function No. Display	Power LED	Description
8	ON	During maintenance mode



Releasing **Function** button

Screen C

Function No. Display	Power LED	Description
8	ON	Emulation mode initial status

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Operating Emulation mode

- (1) Press **Scan** button while  is displayed on the operator panel. The screen to select the scanner model appears. The number in Function No. Display and its scanner model to be emulated are as follows.

Function No. Display	Scanner	Comment
0	fi-5220C	Default (Standard) (TBD)
1	fi-4220C	Emulation: returns "fi-4220Cdj" as Product ID. When USB interface is used, scanner operates with USB 1.1 connection.
2	fi-4220C2	Emulation: returns "fi-4220C2dj" as Product ID.

- (2) Press **Function** button to select the number, which indicates the scanner mode to emulate.
- (3) If the selection is correct, press **Scan** button to confirm the model number. The scanner displays model numbers of selected scanner by the method described in Note A at the end of this section.

The following buttons are available while the scanner is displaying model number for emulation.

Function button: Displays Screen E11 to confirm the selection of the scanner model.

Send to button: Returns to emulation mode initial display.

Screen E11

Function No. Display	Power LED	Description
	ON	"o" (down half) blinks. Blinking cycle: 1.0S (The interval of lighting up and out is 0.5 seconds each)

<Available buttons at Screen E11>

Scan + **Function** button: Writes the scanner model of emulation in EEPROM. During writing, Screen E12 is shown. After writing scanner displays Screen E13, if the writing succeeds. Or scanner displays Screen E14, if it fails.

Send to button: Returns to the initial display of Emulation mode.

Screen E12

Function No. Display	Description
	Scanner is writing the data in EEPROM. Displays "L" blinking.

All buttons are disabled at Screen E12.

Screen E13

Function No. Display	Description
	Normal end Displays "o" (upper half) blinking.

<Available buttons at Screen E13>

Send to button: Returns to emulation mode initial display.

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Function No. Display	Description
	Abnormal end Displays "C" blinking

<Available buttons at Screen E14>

Send to button: Returns to emulation initial display.

Note A: The display of the scanner model of emulation is as follows.

Scanner model	Display method
fi-5220C	"5220" is displayed in the following order. "." → "5" → "2" → "2" → "0" The mark, "-", is a start mark. Display period is 0.5 sec.
fi-4220C	"4220" is displayed in the following order. "." → "4" → "2" → "2" → "0" The mark, "-", is a start mark. Display period is 0.5 sec.
fi-4220C2	"42202" is displayed in the following order. "." → "4" → "2" → "2" → "0" → "2" The mark, "-", is a start mark. Display period is 0.5 sec.

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Chapter 6 Maintenance Parts

POS	Description	Part number	Quantity		Appearance	Replacement procedure
1	BASE UNIT	PA03484-D901	1		6-1	4-8
2	LAMP INVERTER	PA03484-K907		1	6-2	4-10-2
3	LAMP	PA03484-K906		1	6-3	4-10-4
4	US SENSOR LOWER	PA03484-K904		1	6-4	4-10-3
5	GUIDE A ASSY	PA03484-E901		1	6-5	4-10-1
6	DUST COVER ASSY	PA03484-E906		1	6-6	4-10-5
7	OPTICAL UNIT	PA03484-E903		1	6-7	4-10-6
8	BW MOTOR	PA03484-F905		1	6-8	4-10-7
9	CLUTCH	PA03484-F906		1	6-9	4-10-8
10	GUIDE P ASSY	PA03484-E902		1	6-10	4-8
11	UPPER UNIT	PA03484-D903	1		6-11	4-8 Note 1
		PA03484-D905				4-8 Note 2
12	UPPER ASSY	PA03484-E907		1	6-12	4-9-8
13	ADF MOTOR	PA03484-F902		1	6-13	4-9-3
14	OPTICAL UNIT	PA03484-E903		1	6-7	4-9-4
15	LAMP INVERTER	PA03484-K907		1	6-2	4-9-2
16	LAMP	PA03484-K906		1	6-3	4-9-5
17	US SENSOR UPPER	PA03484-K905		1	6-14	4-9-6
18	SENSOR EM	PA03334-F921 PA03334-F914 [02]		1	6-15	4-9-7
19	PANEL PCA	PA03484-K903 PA03334-K907 [02]		1	6-16	4-9-1
20	CONTROL PCA	PA03484-K902	1		6-17	4-11
21	CHUTE UNIT	PA03484-E905	1		6-18	4-6-1
22	FB MOTOR	PA03289-F902	1		6-19	4-12-7
23	OPTICAL UNIT	PA03484-E903	1		6-7	4-12-6
24	LAMP INVERTER	PA03484-K907	1		6-2	4-12-5
25	LAMP	PA03484-K906	1		6-3	4-12-4
26	CR CABLE	PA70002-0928	1		6-20	4-12-3
27	DOCUMENT COVER	PA03484-C902	1		6-21	4-12-1
28	JOINT PCA	PA03484-K910	1		6-22	4-12-2
29	SENSOR EM	PA03334-F921 PA03334-F914 [02]	1		6-15	4-12-3
30	AC ADAPTER	PA03484-K908	1		6-23	
31	AC CORDSET E	PA63085-2001	1		6-24	Note 3
32	AC CORDSET UK	PA63097-2001			6-25	Note 4
33	AC CORDSET U	PA63086-2001				Note 2
34	AC CORDSET C	PA63088-2001				
35	CR FRAME	PA03289-F904	1		6-27	4-12-8

02

Note 1: for PA03484-B501, PA03484-B531, PA03484-B502, PA03484-B532 and PA03484-B505. [03]

Note 2: for PA03484-B507

Note 3: for PA03484-B501 and PA03484-B531. [03]

Note 4: for PA03484-B502, PA03484-B532 and PA03484-B505. [03]

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6-1 Base Unit

Description	Parts No.	Remarks	Figure
Base Unit	PA03484-D901		6-1

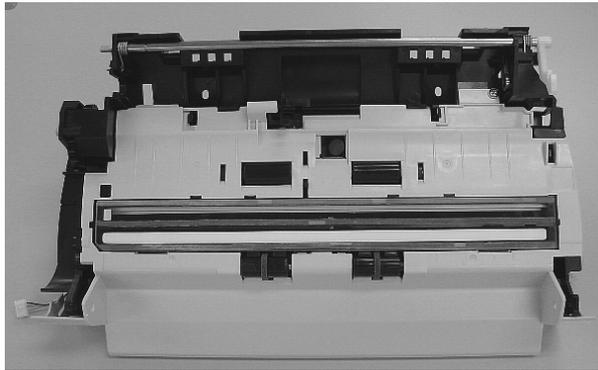


Figure 6-1

NOTICE

This unit includes a Lamp that contains mercury.
 Dispose of the scanner should be conducted as required by local ordinances or regulations.

6-2 Lamp Inverter

Description	Parts No.	Remarks	Figures
Lamp Inverter	PA03484-K907		6-2

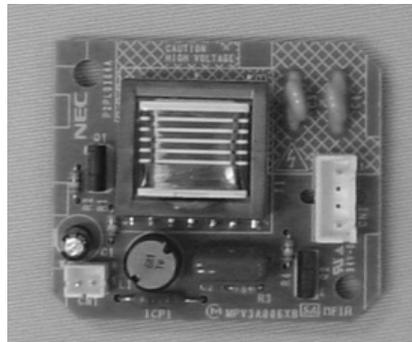


Figure 6-2

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6-3 Lamp

Description	Parts No.	Remarks	Figures
Lamp	PA03484-K906		6-3

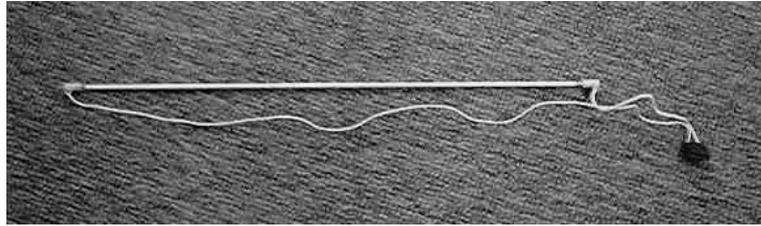


Figure 6-3

NOTICE

Scanner Lamp includes mercury.
 Dispose of the scanner should be conducted as required by local ordinances or regulations.

6-4 US Sensor Lower

Description	Parts No.	Remarks	Figures
Sensor Lower	PA03484-K904		6-4

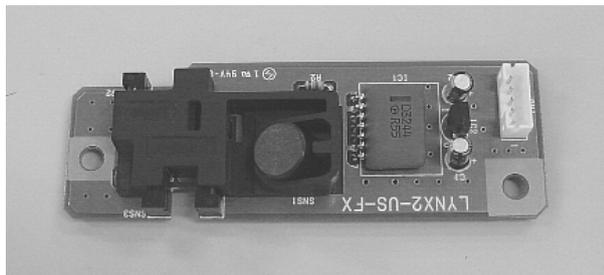


Figure 6-4

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6-5 Guide A ASSY

Description	Parts No.	Remarks	Figure
Guide A ASSY	PA03484-E901		6-5

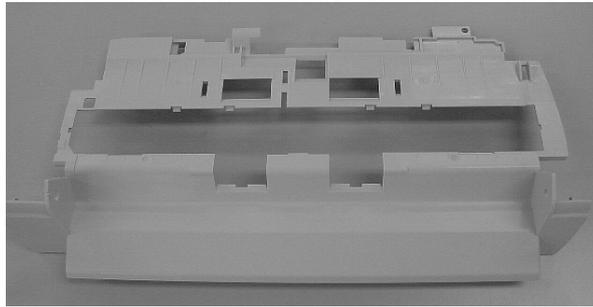


Figure 6-5

6-6 Dust Cover ASSY

Description	Parts No.	Remarks	Figures
Dust Cover ASSY	PA03484-E906	Coil springs for the plastic rollers are not included. 06	6-6

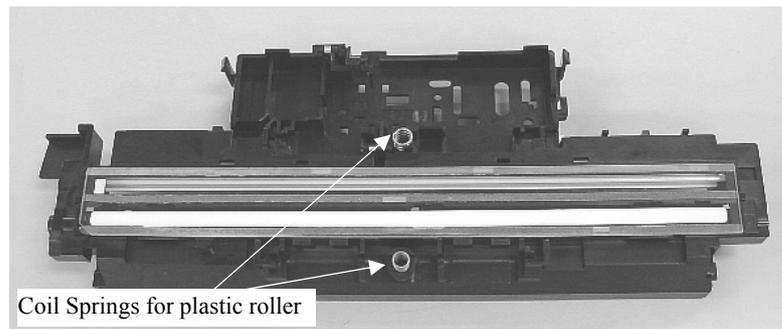


Figure 6-6

						TITLE	fi-5220C IMAGE SCANNER MAINTENANCE MANUAL		
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06	May 28, 2007	K.Okada	K.Okada	T.Anzai	Refer to Revision Record on page 2.				
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6-7 Optical Unit

Description	Parts No.	Remarks	Figure
Optical Unit	PA03484-E903		6-7



Figure 6-7

6-8 BW Motor

Description	Parts No.	Remarks	Figures
BW Motor	PA03484-F905		6-8

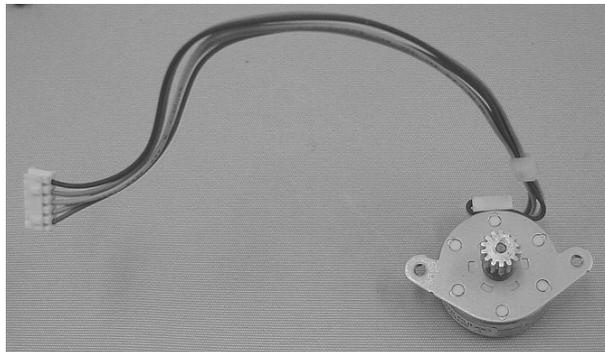


Figure 6-8

						TITLE	fi-5220C IMAGE SCANNER MAINTENANCE MANUAL		
08	June 5, 2009	K.Okada	A.Miyoshi	I.Fujioka	Refer to Revision Record on page 2.	DRAW. No.	P1PA03484-B50X/6	CUST.	
07	Mar. 18, 2008	K.Okada	T.Anzai	I.Fujioka	Refer to Revision Record on page 2.				
06	May 28, 2007	K.Okada	K.Okada	T.Anzai	Refer to Revision Record on page 2.				
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6-9 Clutch

Description	Parts No.	Remarks	Figures
Clutch	PA03484-F906		6-9

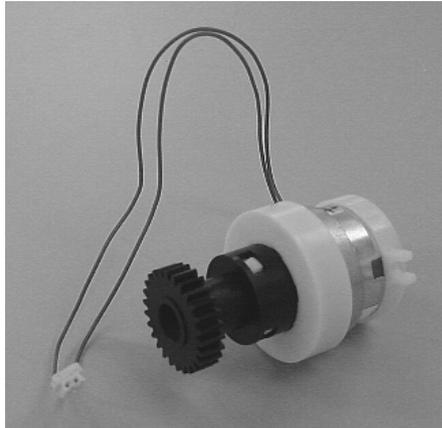


Figure 6-9

6-10 Guide P ASSY

Description	Parts No.	Remarks	Figure
Guide P ASSY	PA03484-E902		6-10

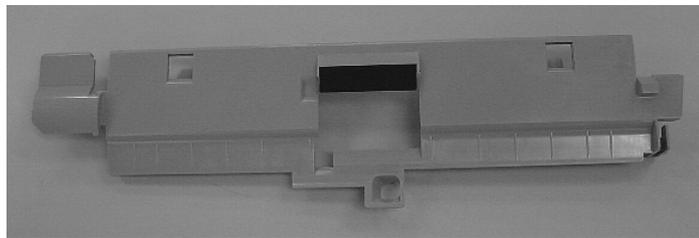


Figure 6-10

						TITLE	fi-5220C IMAGE SCANNER MAINTENANCE MANUAL		
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6-11 Upper Unit

Description	Parts No.	Remarks	Figure
Upper Unit	PA03484-D903	English display	6-11
	PA03484-D905	Chinese display	

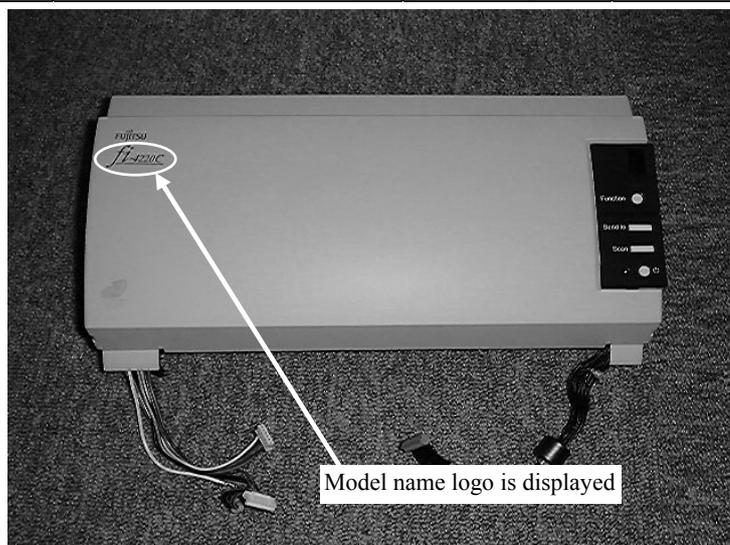


Figure 6-11

NOTICE

This unit includes a Lamp that contains mercury.
 Dispose of the scanner should be conducted as required by local ordinances or regulations.

6-12 Upper ASSY

Description	Parts No.	Remarks	Figures
Upper ASSY	PA03484-E907		6-12

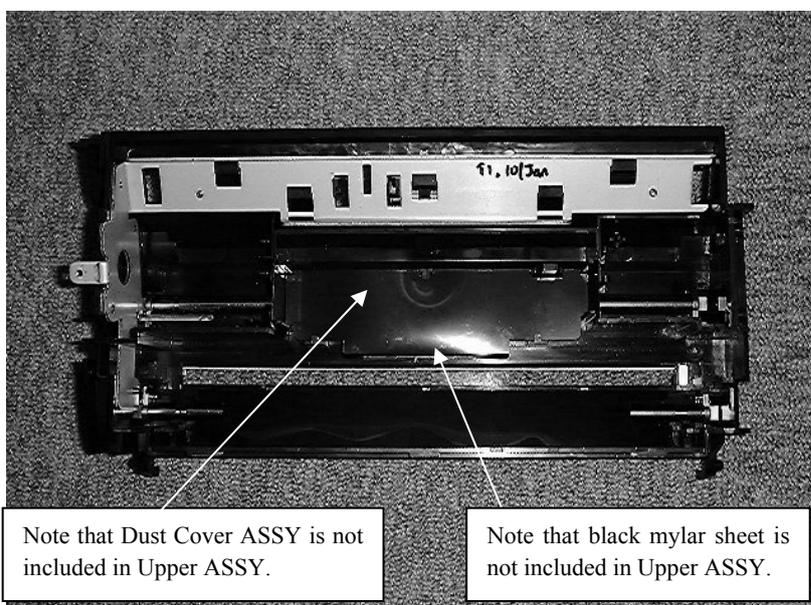


Figure 6-12

Rev	DATE	DESIG.	CHECK	APPR.	DESCRIPTION	TITLE	DRAW. No.		CUST.
08	June 5, 2009	K.Okada	A.Miyoshi	I.Fujioka	Refer to Revision Record on page 2.	fi-5220C IMAGE SCANNER MAINTENANCE MANUAL	P1PA03484-B50X/6		CUST.
07	Mar. 18, 2008	K.Okada	T.Anzai	I.Fujioka	Refer to Revision Record on page 2.				
06	May 28, 2007	K.Okada	K.Okada	T.Anzai	Refer to Revision Record on page 2.				
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6-13 ADF Motor

Description	Parts No.	Remarks	Figures
ADF Motor	PA03484-F902		6-13



Figure 6-13

6-14 US Sensor Upper

Description	Parts No.	Remarks	Figures
US Sensor Upper	PA03484-K905		6-14

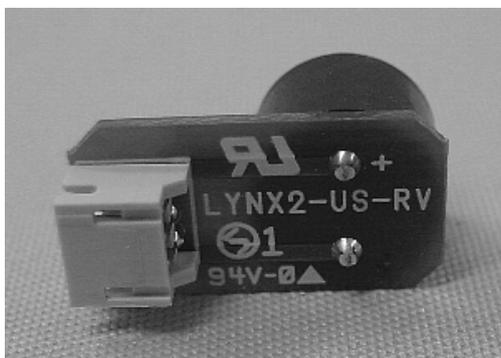


Figure 6-14

						TITLE	fi-5220C IMAGE SCANNER MAINTENANCE MANUAL		
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6-15 Sensor EM

Description	Parts No.	Remarks	Figures
Sensor EM	PA03334-F921 PA03334-F914 02		6-15

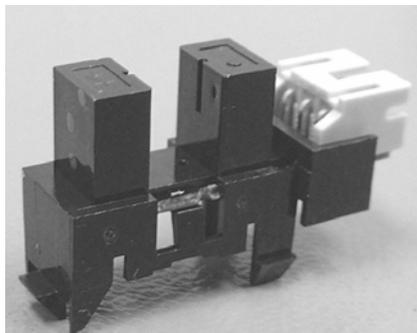


Figure 6-15

6-16 Panel PCA

Description	Parts No.	Remarks	Figures
Panel PCA	PA03484-K903 PA03334-K907 02		6-16

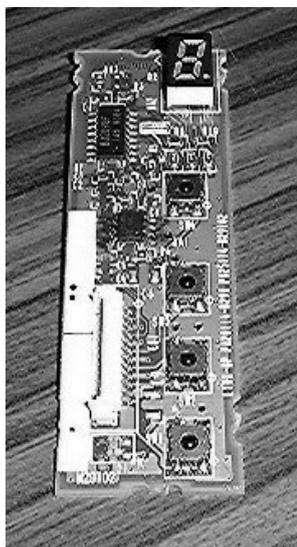


Figure 6-16

08	June 5, 2009	K.Okada	A.Miyoshi	I.Fujioka	Refer to Revision Record on page 2.	TITLE fi-5220C IMAGE SCANNER MAINTENANCE MANUAL	DRAW. No. P1PA03484-B50X/6	CUST.
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06	May 28, 2007	K.Okada	K.Okada	T.Anzai	Refer to Revision Record on page 2.			
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6-17 Control PCA

Description	Parts No.	Remarks	Figures
Control PCA	PA03484-K902		6-17

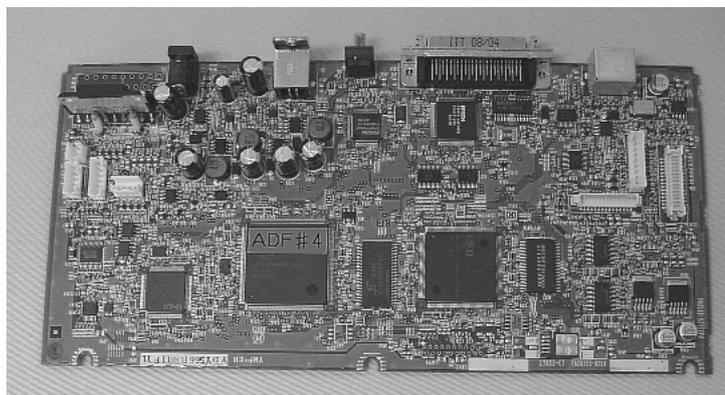


Figure 6-17

6-18 Chute Unit

Description	Parts No.	Remarks	Figures
Chute Unit	PA03484-E905		6-18



Figure 6-18

						TITLE	fi-5220C IMAGE SCANNER MAINTENANCE MANUAL		
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6-19 FB Motor

Description	Parts No.	Remarks	Figures
FB Motor	PA03289-F902		6-19



Figure 6-19

6-20 CR Cable

Description	Parts No.	Remarks	Figures
CR Cable	PA70002-0928		6-20

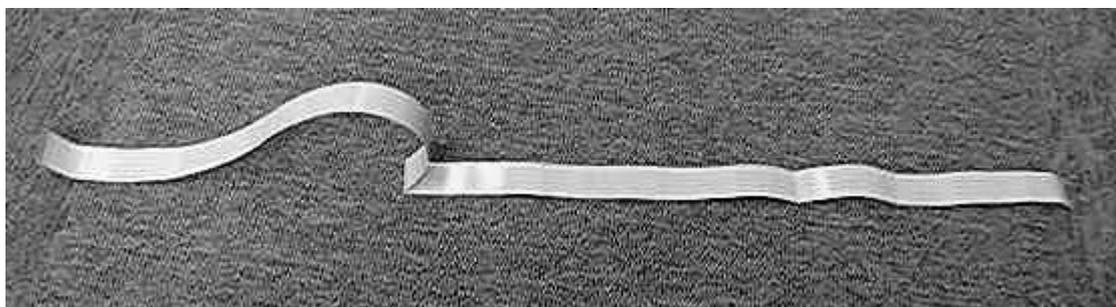


Figure 6-20

Rev	DATE	DESIG.	CHECK	APPR.	DESCRIPTION	TITLE	PAGE	
08	June 5, 2009	K.Okada	A.Miyoshi	I.Fujioka	Refer to Revision Record on page 2.	fi-5220C IMAGE SCANNER MAINTENANCE MANUAL DRAW. No. P1PA03484-B50X/6	136/147	
07	Mar. 18, 2008	K.Okada	T.Anzai	I.Fujioka	Refer to Revision Record on page 2.		CUST.	
06	May 28, 2007	K.Okada	K.Okada	T.Anzai	Refer to Revision Record on page 2.		136/147	
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6-21 Document Cover

Description	Parts No.	Remarks	Figures
Document Cover	PA03484-C902	Consists of cushion and cover	6-21

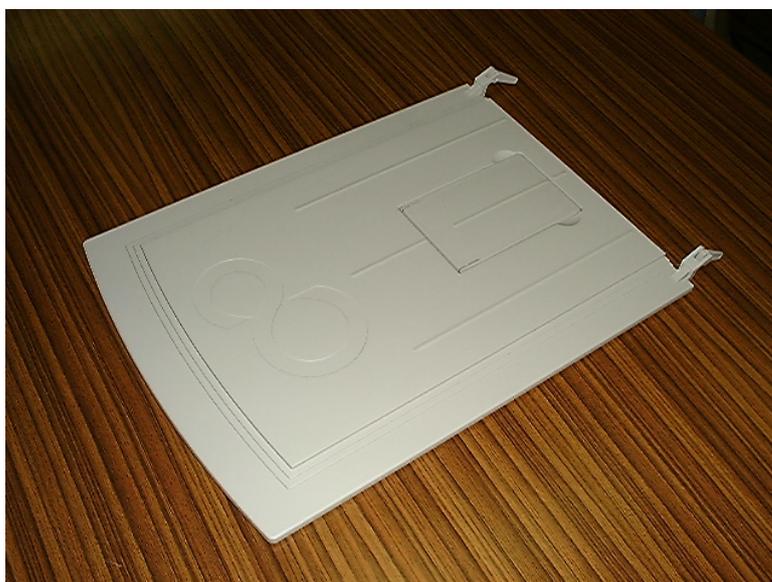


Figure 6-21

6-22 Joint PCA

Description	Parts No.	Remarks	Figures
Joint PCA	PA03484-K910		6-22

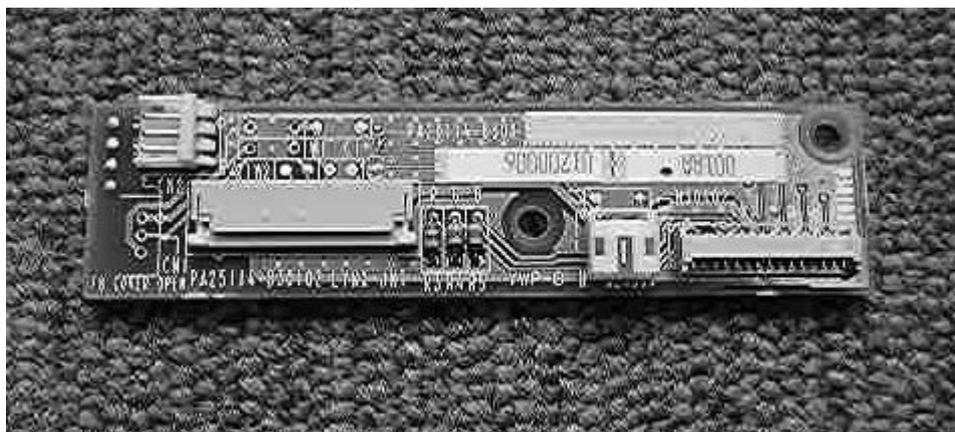


Figure 6-22

						TITLE	fi-5220C IMAGE SCANNER MAINTENANCE MANUAL		
08	June 5, 2009	K.Okada	A.Miyoshi	I.Fujioka	Refer to Revision Record on page 2.	DRAW. No.	P1PA03484-B50X/6	CUST.	
07	Mar. 18, 2008	K.Okada	T.Anzai	I.Fujioka	Refer to Revision Record on page 2.				
06	May 28, 2007	K.Okada	K.Okada	T.Anzai	Refer to Revision Record on page 2.				
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6-23 AC Adapter

Description	Parts No.	Remarks	Figures
AC Adapter	PA03484-K908		6-23



Figure 6-23

02

6-24 AC Cordset E / AC Cordset UK

Description	Parts No.	Remarks	Figures
AC Cordset E	PA63085-2001	For the models PA03484-B501, PA03484-B531	6-23
AC Cordset UK	PA63097-2001		

02



Figure 6-24

08	June 5, 2009	K.Okada	A.Miyoshi	I.Fujioka	Refer to Revision Record on page 2.	TITLE fi-5220C IMAGE SCANNER MAINTENANCE MANUAL	DRAW. No. P1PA03484-B50X/6	CUST.
07	Mar. 18, 2008	K.Okada	T.Anzai	I.Fujioka	Refer to Revision Record on page 2.			
06	May 28, 2007	K.Okada	K.Okada	T.Anzai	Refer to Revision Record on page 2.	PFU LIMITED	PAGE 005	138/147
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6-25 AC Cordset U

Description	Parts No.	Remarks	Figures
AC Cordset U	PA63086-2001	For the models PA03484-B502, PA03484-B532 and PA03484-B505. 02 03	6-25



Figure 6-25

6-26 AC Cordset C

Description	Parts No.	Remarks	Figures
AC Cordset C	PA63088-2001	For the model PA03484-B507 02	

6-27 CR Frame

Description	Parts No.	Remarks	Figures
CR Frame	PA03289-F904		6-27



Figure 6-27

						TITLE	fi-5220C IMAGE SCANNER MAINTENANCE MANUAL		
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06	May 28, 2007	K.Okada	K.Okada	T.Anzai	Refer to Revision Record on page 2.				
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Appendix A Definition of Scanner and Camera Properties

The following describes scanner driver setting that is excerpted from TWAIN driver (ST1 version) manual and modified for fi-5220C.

A.1 Displaying Scanner and Camera Properties

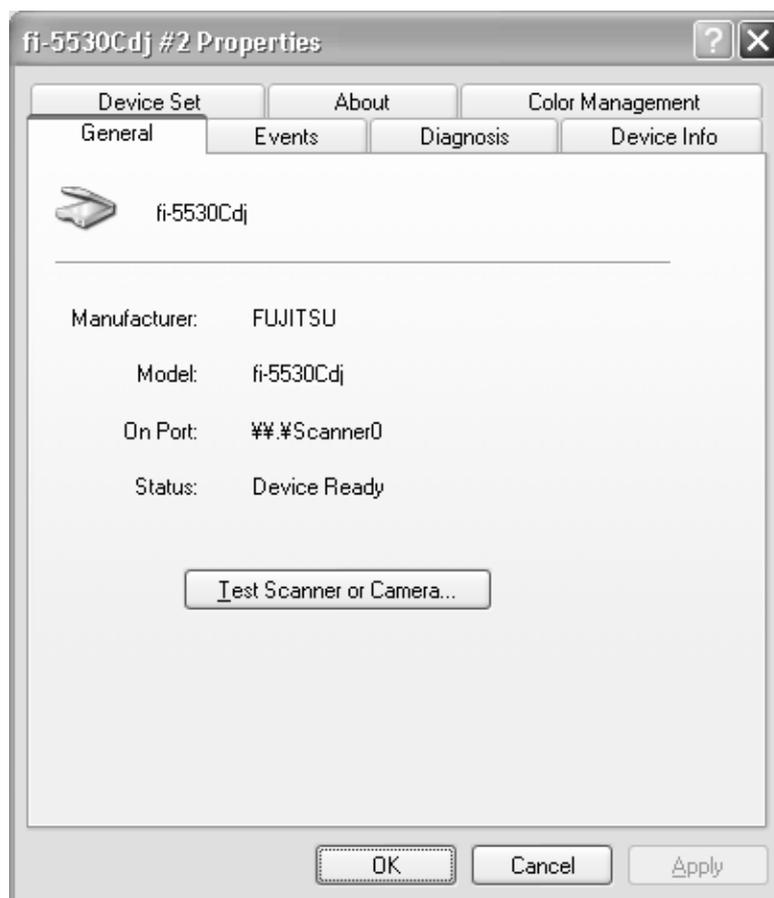
Double-click the [Scanner and Camera] icon on the [Control Panel] to display the corresponding Properties dialog box.

If the scanner driver has been properly installed, the icon of your scanner is displayed. Select the model name. And double-click the icon or select [Properties...] by using right-click. The Properties dialog box shown below is displayed.

In this dialog box, events can be set, the scanner can be checked, and information related to different kinds of related devices can be confirmed and set. An explanation of each tab folder and its use is below.

A.2 General Tab

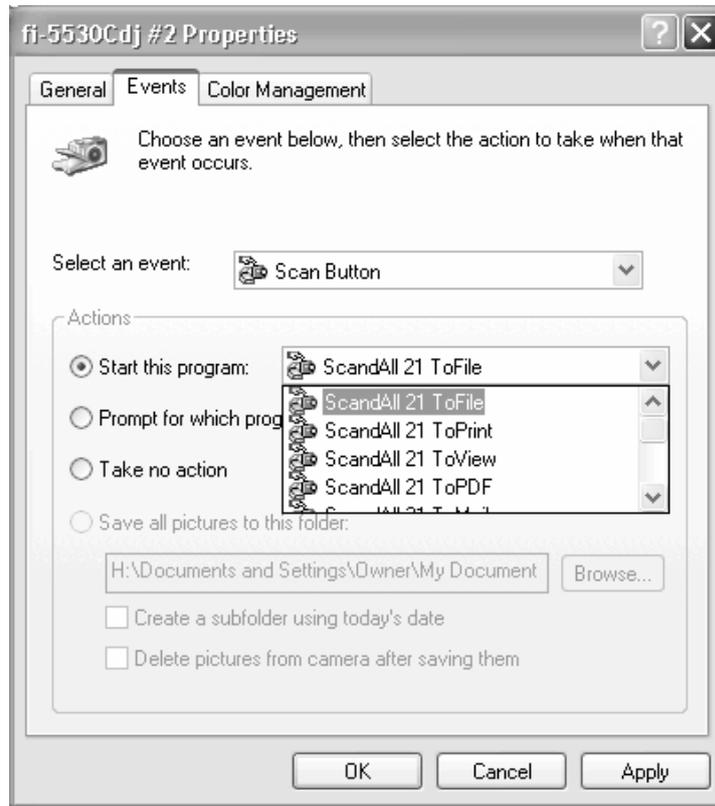
General information on the driver for a connected scanner can be displayed, and the connection can be tested from this folder.



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08	June 5, 2009	K.Okada	A.Miyoshi	I.Fujioka	Refer to Revision Record on page 2.	fi-5220C IMAGE SCANNER MAINTENANCE MANUAL	P1PA03484-B50X/6		
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06	May 28, 2007	K.Okada	K.Okada	T.Anzai	Refer to Revision Record on page 2.				
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A.3 Events Tab

On the Events tab, an application can be specified to be started automatically by “Scanner events” such as “pushing buttons on the scanner”.



(The screen above is for Windows XP)

Select an event (“Scanner event” in case of OS other than Windows XP)

Select a “Scanner event” from the list box to start an application. Select the item to set up from the following events.

”**Scan button**”: When pushing the “Scan” button of the scanner.

”**Send to1-9**”: When pushing the “SendTo” button of the scanner.

Actions (displayed in case of Windows XP)

Select an action when the event selected [Select an event] occurs.

- **Start this program**: The application selected from the right list box starts when the event occurs.
- **Prompt for which program to run**: The window for selecting application appears when the event occurs.
- **Take no action**: Nothing starts even if the event occurs.

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Send to this application (displayed in case of OS other than Windows XP)

Mark on the check box of an application to be started by the operation specified in the above Scanner events. Multiple applications can be specified. When two or more applications are specified, a dialog box appears to select one to be started is by the operation.

Disable device events (displayed in case of OS other than Windows XP)

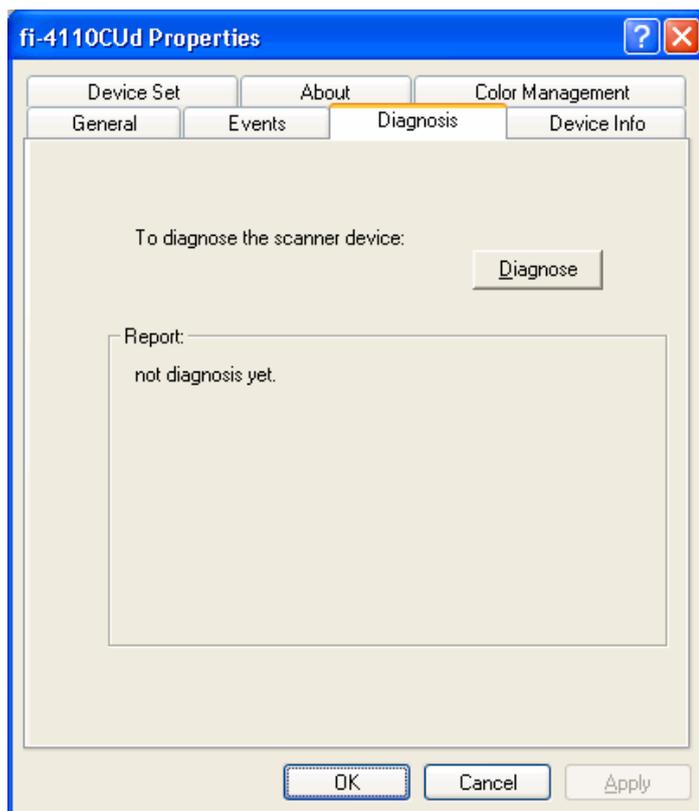
If these functions are not used, mark on this check box.

* If the above settings are not activated by clicking [OK] or [Apply], reboot the PC.

A.4 Diagnostic Tab

To perform more detailed diagnostic tests than those provided in the general tab folder, click the [Diagnose] button.

In Windows 2000 or Windows XP, only a user who has administrator authority can run these tests.



<The message after diagnosis>

“Hardware error not detected”

This means the diagnosis ends normally:

“General error detected. Diagnosis aborted”

This means the diagnosis ends abnormally: Check the followings and try diagnosis again.

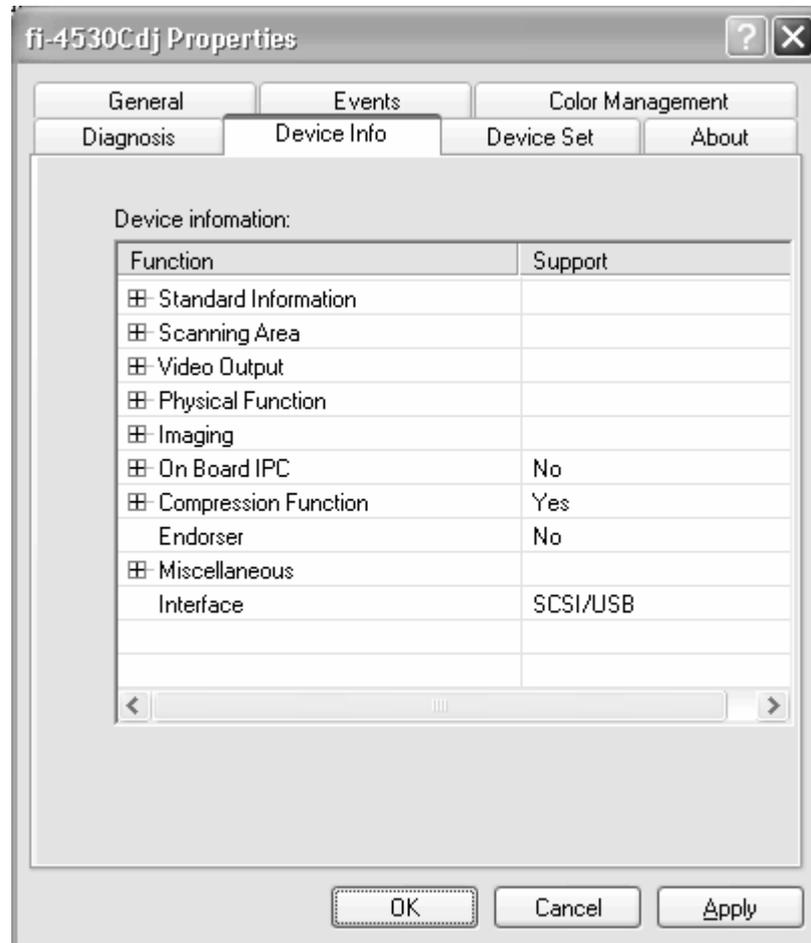
- 1) Is the scanner ON?
- 2) Is the scanner connected to the host PC?
- 3) Does the Function No. Display show an error? Go to Section 3.1 and follow the countermeasures corresponding to the error.

(The example screen is for fi-4110CU)

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A.5 Device Information Tab

A list of the functions compatible with the selected scanner driver is displayed. The items displayed depend on the selected model of scanner. Only hardware functions are displayed. The functions realized by software are not displayed in this tab folder. Therefore, the displayed content may not match the content specified during reading. The contents of this tab folder are not displayed if the scanner driver is either currently in use or not connected to the computer. If they are not displayed, stop the application being used by the scanner driver or check the connection. Then, select this tab folder again to display the contents.



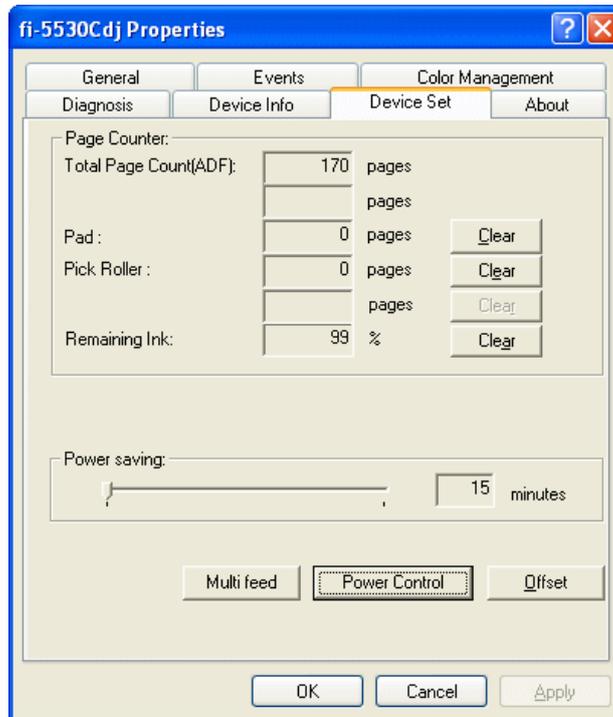
(The example screen is for fi-4530C)

Rev	DATE	DESIG.	CHECK	APPR.	DESCRIPTION	TITLE	DRAW. No.		CUST.
08	June 5, 2009	K.Okada	A.Miyoshi	I.Fujioka	Refer to Revision Record on page 2.	fi-5220C IMAGE SCANNER MAINTENANCE MANUAL	P1PA03484-B50X/6		143/147
07	Mar. 18, 2008	K.Okada	T.Anzai	I.Fujioka	Refer to Revision Record on page 2.				
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A.6 Device Setup Tab

Information related to the operation and maintenance of the scanner driver can be displayed and set up. For some scanner models, some items cannot be set up (grayed out). Changing the setup activates the [Apply] button. The changed setup is reflected on the device only if the [Apply] button or [OK] button is clicked. The contents of this tab folder are not displayed if the scanner driver is either currently in use or not connected to the computer. If they are not displayed, stop the application being used by the scanner driver or check the connection. Then, select this tab folder again to display the data.

In Windows 2000 or Windows XP, only a user who has administrator authority can change the setup from this tab folder.



Page Counter

An approximate total numbers of pages ever read. An equivalent count of the pages scanned after consumables are replaced is displayed.

To set the consumables counter to zero after replacing consumables, click the [Clear] button. This operation can be executed using the operation panel of the device.

<Counters supported by fi-5220C>

Total number of sheets ever scanned (ADF): Incremented after scanning 10 sheets

Total number of sheets ever scanned (FB): Incremented after scanning 10 sheets

Pad counter : Incremented after scanning 500 sheets

Pick counter: Incremented after scanning 500 sheets

Note:

Depending on some scanner models, once the [Device Set] tab appears, the operation panel is unable to be handled. In this case, close this dialog and turn the power ON/OFF of the scanner. After the scanner setup, the operation panel is able to be handled.

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07	Mar. 18, 2008	K.Okada	T.Anzai	I.Fujioka	Refer to Revision Record on page 2.			
06	May 28, 2007	K.Okada	K.Okada	T.Anzai	Refer to Revision Record on page 2.			
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When using a scanner, the following message may be displayed.



If this message appears, replace consumables following the instructions below.

< If replacing consumables immediately >

1. Check [This message not display again].
2. In cases where consumables are replaced after completing all documents being scanned, click [Ignore]. In cases where scanning is stopped for an immediate replacement, click [Cancel].
3. Following [Section 1-7](#), replace the consumables.
4. Select [Page counter] from [Device setup], click [Clear] button to reset the consumables counter.

Note: When [This message not display again.] is marked, the message will not appear until the consumable counter is reset and it reaches the specified value (Pad: 45,000 sheets, Pick roller: 95,000sheets).

< If replacing later (immediate replacement is impossible) >

1. If it is not necessary to display this message again, check [This message not display again]*. If it is necessary to display this message again after scanning xxx pages, check [Warns again after scanning xxx pages].
2. If the scanning is continued, click [Ignore] and close the message. If the scanning is stopped, click [Cancel] and close the message.
3. Replace consumables as soon as possible or when this message appears next time.
4. After the replacement, click [Clear] of [Device Setup] under [Page Counter] to reset the consumables counter.

(* If [This message not display again] is checked, this message will not appear before the consumables counter is reset.)

Power saving:

Specify when the lamp turns off. This is the elapsed time after a scan is complete.

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[Multi feed] button

Use this to specify multi feed detection area.

Normally Multi feed detection will monitor paper overlap over the whole area of the document. This will lead to certain documents such as postcards being mistakenly detected as multi feed because some portion of the document is pasted with photographs or stamps. When scanning these kinds of documents, you can specify an exact detection area to prevent mis-detection.

Click on the button and the following screen will appear.

Enable (Detection Area Selection)

Vertically select an area where multi feed detection will or will not be conducted. Choose wither “Select area for applying Multi feed Detection” or “Select area for not applying Multi feed detection”.

- Select area for applying Multi feed Detection:

Select an area for multi feed detection.

- Select area for not applying Multi feed Detection:

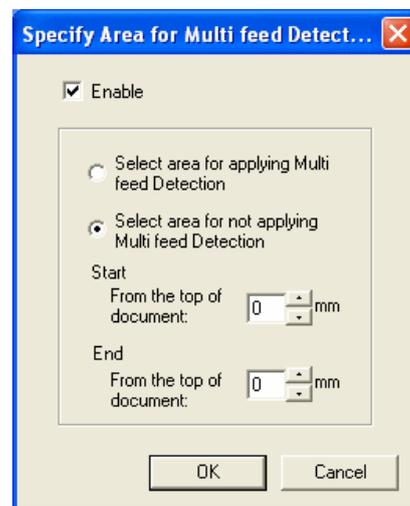
Select an area not to be detected.

- Start

Set start position as distance from the document’s top page.
(Possible values: 0-510mm with Start Position <End Position)

- End

Set end position as distance from the document’s top page.
(Possible values: 0-510mm with Start Position <End Position)



[Power Control] button

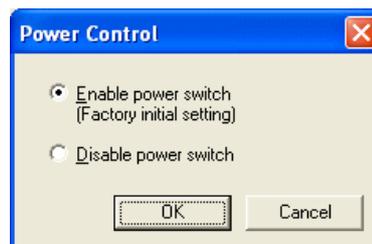
Enable/Disable the scanner’s power switch.

- Enable Power Switch

Scanner power switch is enabled.
The scanner can be turned ON/OFF by the power switch.

- Disable Power Switch

Scanner power switch is disabled.
The scanner will be turned ON/OFF by connecting/disconnecting the power supply.
(Power button will no longer work).

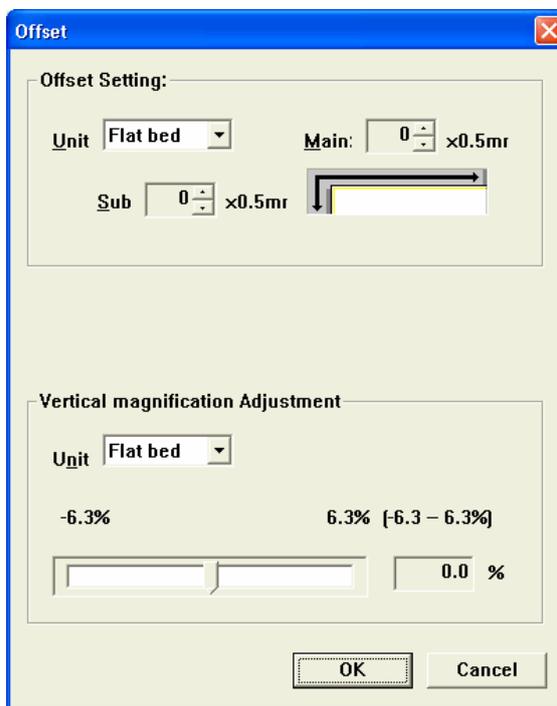


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07	Mar. 18, 2008	K.Okada	T.Anzai	I.Fujioka	Refer to Revision Record on page 2.				
06	May 28, 2007	K.Okada	K.Okada	T.Anzai	Refer to Revision Record on page 2.	PFU LIMITED		PAGE 005	146/147
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[Offset] button

When this button is clicked, the following dialog box is displayed.

Using this dialog box, the offset of the leading edge and magnification for the sub-scanning direction can be changed.



- Offset Setting:

If the position of the scanned image shifts from the original document, fine adjustment is possible. At shipment, the offset has been adjusted to an optimum value within a certain range. Therefore, adjustment is not generally required.

- Vertical magnification Adjustment

The vertical magnification correction value of sub-scanning direction can be changed. The image is expanded or shrunk in the paper feeding direction based on the setting value at shipment. This function is used to adjust the image whose ratio of length and width seems different from the original document.

- [OK] button

The adjusted value is written to the EEPROM.

A.7 About Tab

The version of this driver and a link to the Fujitsu home page are displayed.

A.8 Color Management Tab Folder

Color profiles assigned to the device can be added or deleted from this folder. "sRGB Color Space Profile.icm" is the default driver assigned to this driver.

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