fi-6770/fi-6770A
fi-6750S
Image Scanner
Maintenance Manual

						Name	fi-6770/fi-6770A/fi-6750S Maintenance Manual			
08	Oct. 4, 12	M.Yamada	T.Yoshimoto	Y.Nishibata	Refer to Revision Record on page 2.					
07	Oct. 24,11	M.Markey	Y.Nishibata	T.Iwashimizu	Refer to Revision Record on page 2.	Drawing No.	P1PA03576－B00X/6			
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DESIG.	May 28, 2008	K.Okada	CHECK		T.Anzai	APPR.	I.Fujioka			

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Edition	Date published	Revised contents
01	May 28, 2008	First edition released.
02	June 23, 2008	P9: A8 size description revised. P33, 49, 87, 171: FUSE KIT 6770/6750 deleted. FUSE2, 3 added. P35, 121, 122: Photo, Note and Replacement procedure of Background BS added. P43, 110: Explanation of OPT SPACER B added. P33, 52: Part number of ADF Cable changed. P54: Description of DIMM (table) added. P76: Reference cleaning procedures deleted. P86: Replacement procedure of Control PCA changed. P150: Maintenance Mode activation method changed. P151, 152, 154, 158, 161, 164, 165, 168: Maintenance Mode exiting method added. P152: Background switchover test added. P179~182: Table of Software Operation Panel added. P193, 197: Part number of screws changed.
03	February 23, 2009	P67: Notes when U0 or E0 error occurs added. P198: “Appendix 2: Emulation mode” added.
04	April 27, 2009	P33, 34, 35, 56: Maintenance Parts added. P89: Title changed. P111, 113, 126, 129: Notes at Optical Unit ADF replacement added.
05	July 13, 2009	P34, 49, 50: Remarks on Fuses added. P153, 157, 161, 164: Notes on Maintenance Mode added.
06	July 28, 2010	Chapter 3, Sections 3.1, 3.2, 3.3, 3.4, 3.46 (P33-37, 57): Maintenance parts numbers added. Section 5.12.5 (P133-134): Notes on removal/installation added.
07	October 24, 2011	Chapter 3: Optical component installation maintenance part number of ADF FIX Unit, ADF REV Unit, Optical Unit ADF, Optical Unit FB added, notes changed/added Section 3-1, 3-2, 3-20, 3-25: Part number/notes added
08	October 4, 2012	Chapter 1, Section 1.3: Updated Chapter 3: Maintenance parts numbers updated Chapter 3, Sections 3.21, 3.24, 3.30, 3.36, 3.41, 3.42: Updated Appendix 3: Added

The contents of this manual are subject to change without prior notice.

Preface

This manual provides the technical information such as maintenance, troubleshooting procedure and parts replacement procedure for field Engineers on fi-6770/fi-6770A/fi-6750S image scanner.
This manual is not responsible if used for other than maintenance.

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

Item	Manuals	P/N *
1	fi-6770/fi-6770(A)/fi-6750S Image Scanner Operator's Guide	P3PC-2252-xxEN
2	fi-6770/fi-6770(A)/fi-6750S Image Scanner Getting Started	P3PC-2242-xxEN
3	fi-6770/fi-6770A/fi-6750S Illustrated Parts Catalog	P4PA03576-B0XX/6

* xx represents revision number of the manuals.

Convention

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

WARNING

WARNING indicates that personal injury may result if you do not follow a procedure correctly.

CAUTION

CAUTION indicates that damage to the scanner may result if you do not follow a procedure correctly.

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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How Trademarks are Indicated in This Manual

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

Windows 2000: Microsoft® Windows® 2000 Professional operating system

Windows XP: Microsoft® Windows® XP Professional operating system (32-bit/64-bit)
Microsoft® Windows® XP Home Edition operating system

Windows Server 2003: Microsoft® Windows Server™ 2003 Standard Edition operating system (32-bit/64-bit)

Windows Vista: Windows Vista® Home Basic operating system (32-bit/64-bit)
Windows Vista® Home Premium operating system (32-bit/64-bit)
Windows Vista® Business operating system (32-bit/64-bit)
Windows Vista® Enterprise operating system (32-bit/64-bit)
Windows Vista® Ultimate operating system (32-bit/64-bit)

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

Contents

Chapter 1 Overview

1.1 Scanner Overview

1.1.1 Features

The fi-6770/fi-6770A/fi-6750S, image scanner offers color/monochrome scanning of up to A3 sized paper for ADF scanning and 12" x 18" sized paper for FB scanning. It provides faster color document scanning speed than the preceding model (fi-5750C) and has the following features:

- Selectable position and direction on the ADF
- Initiate scanning from the scanner with "Send to" or "Scan/Stop" button
- Ultra SCSI or USB 2.0 interfaces
- Wide range of paper weight
- Ultrasonic multifeed detection
- Selectable background color (black or white) in the ADF. White background in the FB (Black – optional)

1.1.2 Scanner Specification

No.	Item		Specification				Remarks
1	Operating method		Automatic Document Feeder (ADF) and Flatbed				fi-6750S: Simplex
2	Image sensor		Color CCD (Charge-coupled device) x 3				fi-6750S: x2
3	Light source		White cold cathode discharge lamp				
4	Optical resolution		600dpi x 600dpi				
5	Output resolution	Binary	50-600dpi				
		Grayscale	50-600dpi				
		Color	50-600dpi				
6	Internal video processing		1024 levels				
7	Video output format		Monochrome: 1 bit/pixel Grayscale:8 bit/pixel (R,G,B, Non-Dropout) 4bit/pixel(Generated by the device driver) Color: 8bit and 24 bit/pixel 8bit and 4bit/pixel(Generated by the device driver)				
8	ADF	Scanning speed (Calculated) (Note 1)		fi-6770/fi-6770A		fi-6750S	
				Simplex (ppm)	Duplex (ipm)	Simplex (ppm)	
			Binary/ Gray/ Color	90	180	72	@A4, Landscape, 200 dpi,
				70	140	55	@A4, Portrait, 200 dpi,
				80	160	72	@A4, Landscape, 300 dpi,
				60	120	55	@A4, Portrait, 300 dpi,
				47	94	47	@A4,Landscape, 400 dpi,
				30	60	30	@A4,Landscape, 600dpi,
		Paper size	Minimum A8 Portrait (52 x 74mm) Maximum A3 Portrait (297 x 420mm) or 11x17 (279.4 x 431.8mm) Note: 3m(120 in.), Binary/Grayscale/Color long page scanning available (Note 2)				
		Maximum permissible document width	297 mm (A3 Portrait width)				

No.	Item		Specification	Remarks
8	ADF	Paper thickness (weight)	A4/Letter Size or Smaller : 0.04 to 0.25mm (31 to 209 g/m^2, or 8.3 to 56.1 lb) Over A4/Letter size : 0.06 to 0.25 mm (52g/m^2 to 209g/m^2,or 13.8 to 56.1 lb) A8 size : 0.152 to 0.25mm (127 to 209 g/m^2, or 33.8 to 56.1 lb)	
		Capacity of ADF	**Chute:** Maximum 200 sheets at A4, 20 lb, or 80 g/m^2 **Stacker:** Maximum 300 sheets at A4, 20 lb, or 80 g/m^2	Stacker position is Bottom.
		Sheet setting	Front side down	
		Multi feed detection	Yes (Standard) Ultrasonic sensor or Length check sensor Ultrasonic sensor and Length check sensor	Refer to Section 1.1.7.
		Background	White / Black selectable (Front and back shall be the same color. Default is White)	fi-6750S: Copied side only
		ADF Structure	**ADF position selectable:** 2 (two) positions (Center, Left) **ADF direction:** 2 (two) direction is selectable for left-handed/right-handed person, when ADF is Center.	
9	FB	Scanning speed (Engine)	Binary/Gray/Color: 0.9 sec (@A4, Portrait,200 dpi) 2.0 sec (@A4,Landscape, 600 dpi)	The time for Video gate on
		Paper size	Maximum 304.8 x 457.2mm (12x18 inch)	
		Background	White (Standard)	Black background is optional.
		FB cover open Sensor	Yes (Standard)	
10	Interface	fi-6770 fi-6770A	- Standard I/F Ultra SCSI (Half-pitch 50 pin) x 1 USB2.0 x 1 - CGA (fi-6770: Option) Ultra SCSI (Half-pitch 68 pin) x 1 USB2.0 x 1	*Can be connected to either of standard I/F or CGA.
		fi-6750S	USB2.0 x 1 (Type B)	Standard I/F only
11	Image processing function		Error diffusion, Dither (Standard)	
12	Image compression		Hardware real-time JPEG compression (standard)	Only for Grayscale, Color
13	Image memory		fi-6770/fi-6770A: 384MB x 2 (Total of 768MB) fi-6750S: 384MB x 1 (Total of 384MB)	Not possible to enhance
14	Energy Star® compliance		Yes	Note 3
15	Attached driver		FJ TWAIN, ISIS	
16	Operation Panel		Buttons: Scan/Stop, Send to, Function Lamps: Power, Scanner status (Function Number Display)	
17	Bundled Software		-FJ Twain -ScandAll PRO -ISIS -QuickScan PRO (demo version) -Adobe Acrobat (latest version) -Software Operation Panel (demo version) -Visual Error Recovery Guide -Image Processing Software V2.5 -VRS 4.2 (fi-6770/fi-6770A only)	Supplied by DVD-ROMs
18	Options		Item / Specification / Function Black document pad / PA03338-D960 / Black document pad (FB background) CGA option (fi-6770 only) / PA03576-K001 / Image processing (Threshold)	Processing speed is deteriorated a bit. Software IPC Processing speed is deteriorated a bit. Software IPC

Note 1) Actual scanning speed may be slower due to the system environment of the scanner.
Scanning speed for color is calculated with compression and Ultra SCSI or USB 2.0 interface.

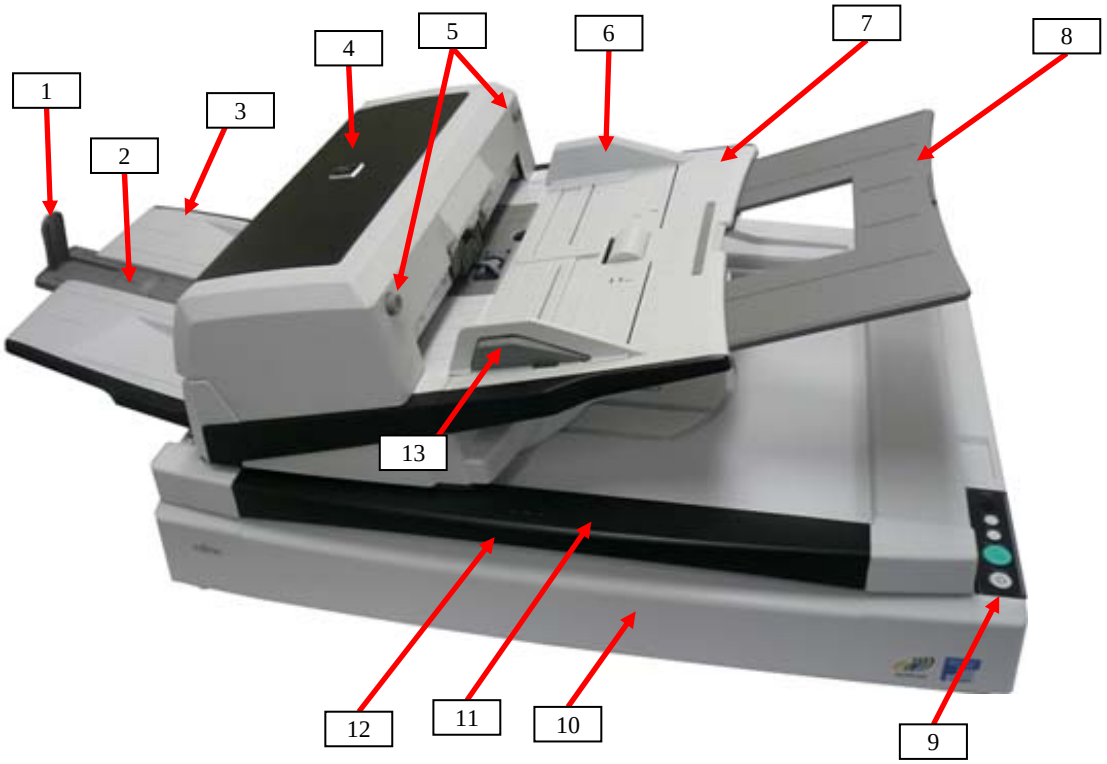
Note 2) The feeding error rate is not applicable when the paper is longer than A3 or 11 x 17.
To specify length 864mm or over, resolution must be 200dpi or less.
Long page scanning may make the scanning speed deteriorated.
Note 3) Automatically sleep mode works, if scanner is not used.

1.1.3 Environmental Specification

No.	Items		Specifications
1	Outer dimensions		690 (W) x 500 (D) x 342 (H) mm, 27.2 (W) x 19.7 (D) x 13.5 (H) in. (Chute extension and Cable for ADF excluded.)
2	Installation space		1030 (W) x 700 (D) x 640 (H) mm, 40.6 (W) x 27.6 (D) x 25.2 (D) in.
3	Weight (kg)		35 kg or less (77.3 lb or less)
4	Noise		53 dB or less
5	Power requirements	Voltage range	AC100V to 240V ± 10%
		Phase	Simple phase
		Frequency range	50/60Hz ± 3Hz
6	Power consumption	In Operation	Max. 216 W or less
		Stand-by	88W or less
		Sleep mode	3W or less (fi-6670, fi-6750S) 08 9.1W or less (fi-6670A)
7	Environmental condition	Temperature	In operation: 5 to 35 C°, 41 to 95 °F Not used: -20 to 60 C°, -4 to 140 °F
		Humidity	In operation: 20 to 80 % Not used: 8 to 95 %
8	Calorific value	In Operation	186 Kcal/Hr or less
		Stand-by	76 Kcal/Hr or less
		Sleep mode	2.6 Kcal/Hr or less (fi-6770, fi-6750S) 08 7.8 Kcal/Hr or less (fi-6770A)

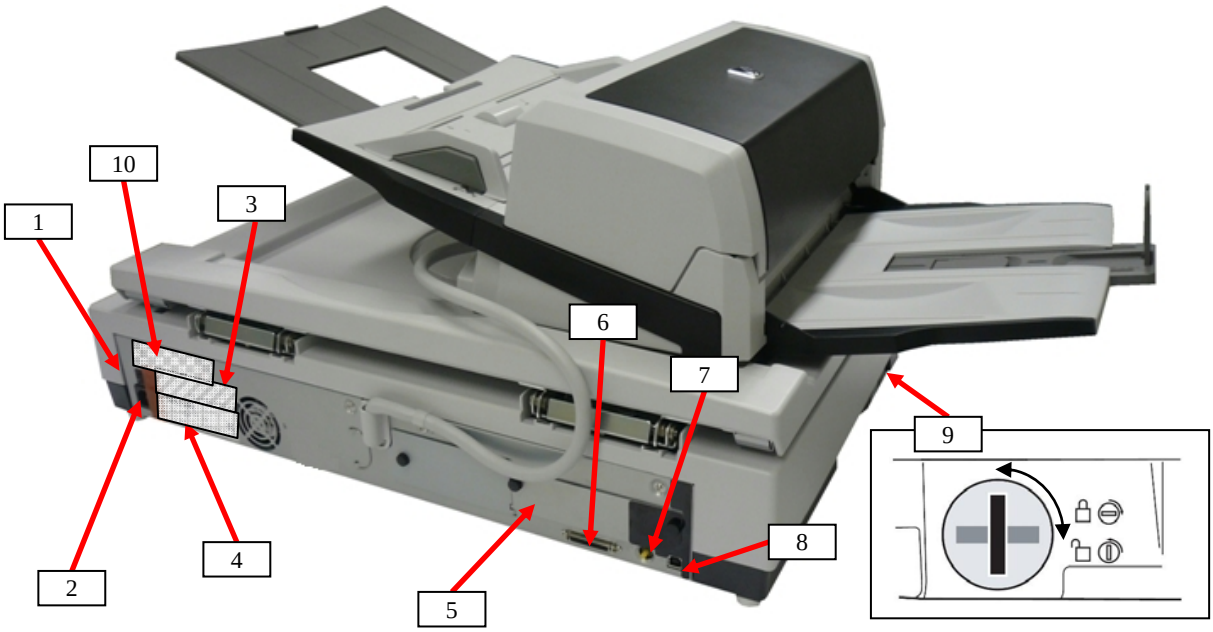
1.1.4 Appearance

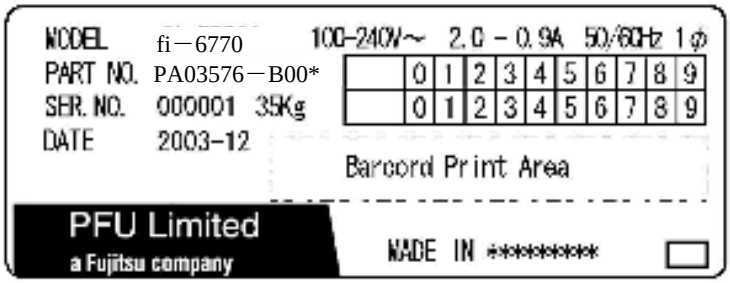
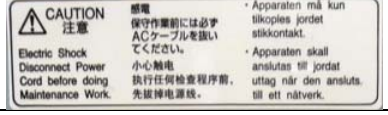
[Front]



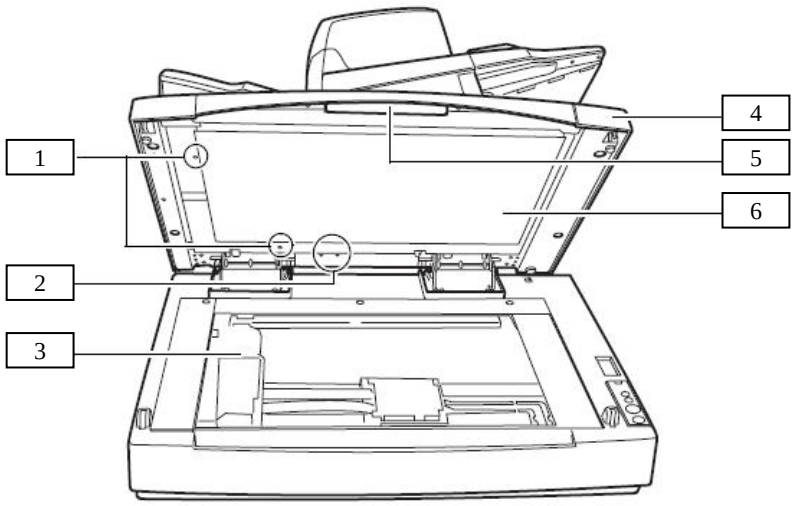
No.	Parts name	Function
1	Paper Stopper	Raise it to prevent the document from falling from the stacker.
2	Stacker extension	Pull out the extension according to the document length.
3	Stacker	Scanned documents are ejected from the ADF onto this stacker. The height of the stacker is adjustable. It is also removable.
4	ADF (Automatic Document Feeder)	Feeds documents to the scanning position automatically. Documents are fed sheet by sheet when loaded for batch scanning. Both sides of documents can be scanned at one time. (fi-6770/fi-6770A only)
5	ADF Open Buttons	Opens the ADF. Push the button down while opening the ADF.
6	Side Guides	Prevents documents from being skewed during feeding. Adjust the guide to the width of the documents loaded.
7	Chute unit (ADF Paper Chute)	Holds in place the document pages/sheets that are to be fed into the ADF. Documents should be loaded face down.
8	Paper Chute Extension	Extended when scanning long documents.
9	Operator Panel	Used to operate the scanner and monitor its status. The Operator Panel includes a Function Number Display, Operating push buttons, and a Check LED.
10	Flatbed	Location where documents that cannot be fed through the ADF are scanned. Allows for scanning thick documents such as books.
11	Document cover	Used to keep paper in place when scanning from the flatbed.
12	FB open/close lever (not shown)	Press this handle to open the document cover
13	Side Guide Button	Adjusts the position of the Side Guide when pressed. Locks the Side Guide at the position when this button is released.

[Rear]



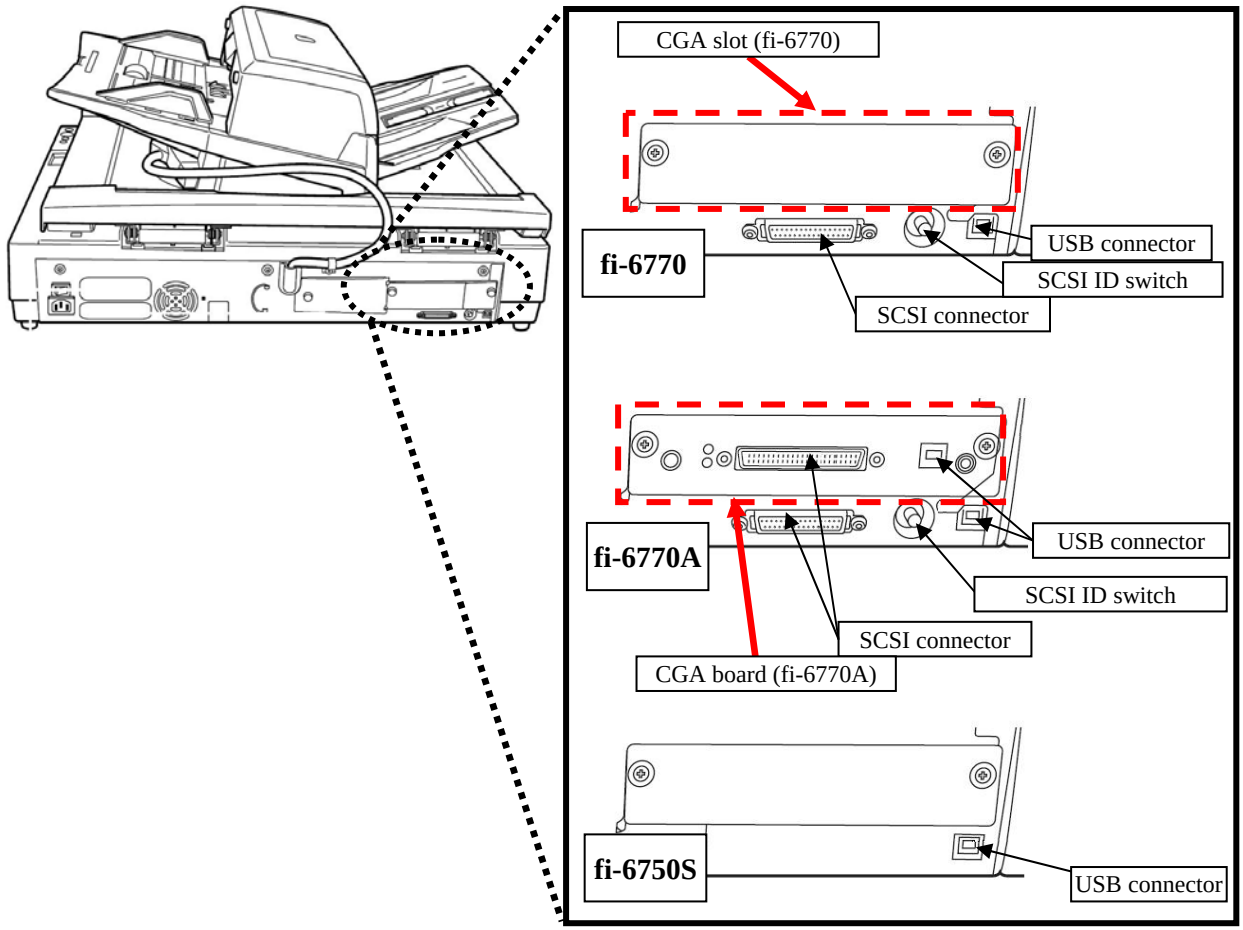
No.	Parts name	Function
1	Main Power Switch	Used to turn the scanner ON and OFF.
2	Power Connector	Connects a power cable.
3	Manufacturing Label	
4	Certification Label	
5	Third Party Slot (CGA board) * Refer to [Interface] for details.	Location where a CGA Interface Card or optional boards are installed. * fi-6770: Used when CGA board is extended as option. fi-6770A: Standard equipment fi-6750S: Not available
6	SCSI Interface Connector * Refer to [Interface] for details.	Connects a SCSI interface cable. * fi-6750S has no SCSI interface.
7	SCSI ID Switch * Refer to [Interface] for details.	Used to set the SCSI-ID. (Default SCSI ID is “5”.) The ID which has been set here is reflected to the SCSI-ID of the CGA. * fi-6750S has no SCSI ID switch.
8	USB Interface Connector * Refer to [Interface] for details.	Connects a USB interface cable.
9	Transport Lock	Locks the carrier unit inside the Flatbed during transportation. Use a coin or flat-blade screwdriver to unlock. Turn the slot to a vertical position to release the lock; to a horizontal position to lock.
10	Electric Shock Hazard Label	

[Inside of Flatbed]

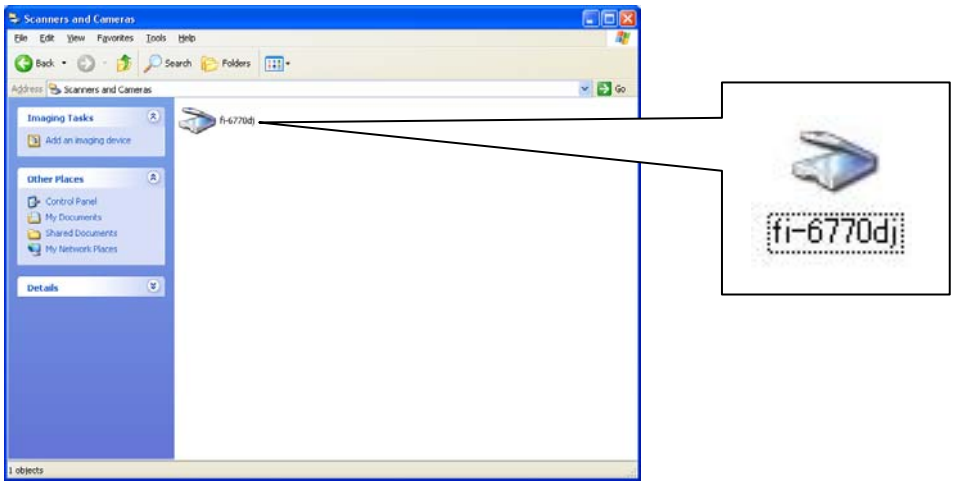


No.	Parts name	Function
1	ADF Lock Screw	Fixes the ADF when transported
2	Screw Storage Hole	Stores the ADF Lock Screws removed after the ADF has been unlocked.
3	Document Bed	Place documents on the glass when scanning through the flatbed.
4	Document Cover	Holds the loaded documents at the scanning position when closed.
5	Handle	Used to open and close the Document Cover.
6	Document Holding Pad	Holds documents on the Document Bed. The color of the standard pad is white. Black pad is optionally availale.

[Interface]

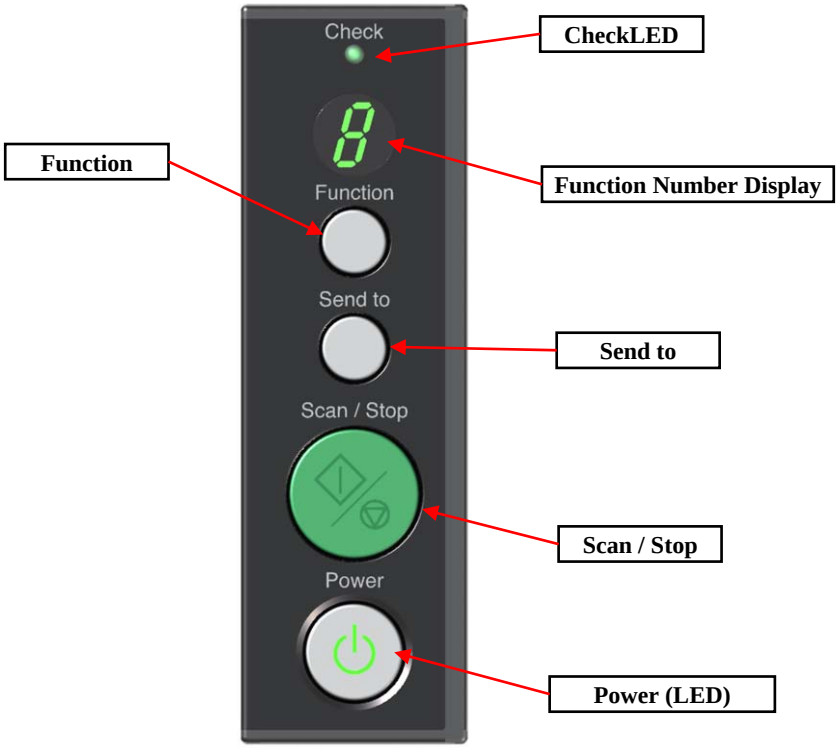


When connected to each interface, the name displayed on the Windows screen differs as shown in the table below.



Scanner model	Display / Connector position	Scanner driver		
		FUJITSU TWAIN32	FUJITSU ISIS	Kofax VRS
fi-6770	Scanner (SCSI/USB connector) side	fi-6770dj	fi-6770	
	CGA board side (option)			Kofax VRS Scanner
fi-6770A	Scanner (SCSI/USB connector) side	fi-6770dj	fi-6770	
	CGA board side			Kofax VRS Scanner
fi-6750S	Scanner (USB) connector	fi-6750Sj	fi-6750S	

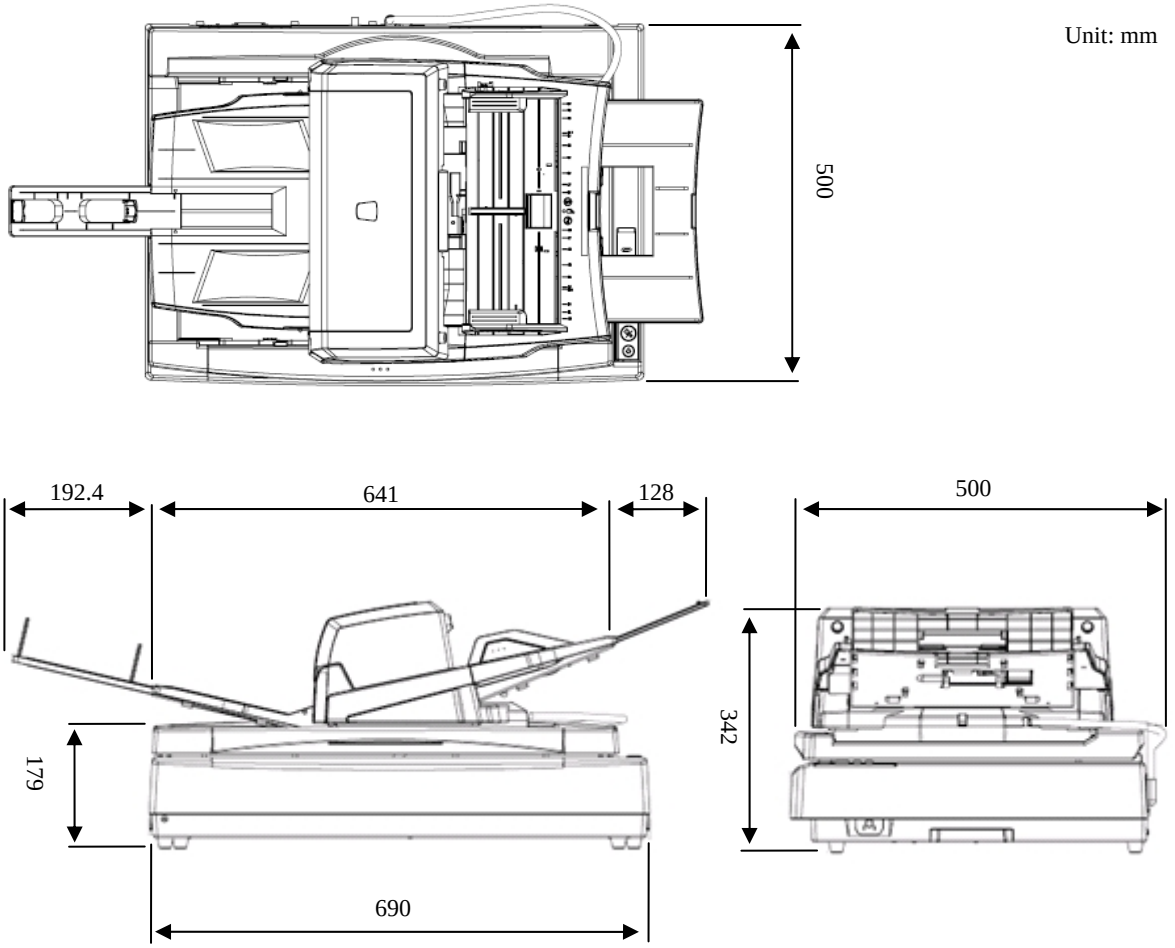
[Operator Panel]



Name		Function
Function Number. Display		Indicates the function number and error status (alarm).
Button	Function	Changes the Function activated by the [Send to] button.
	Send to	Launches the linked application software to run scanning, etc. Resets an error. Launches the Software Operation Panel when "C" is displayed on the Function Number Display. (Keep pressing more than 1 second to activate.)
	Scan/Stop	Launches the linked application software to run scanning, etc. Resets an error. (Keep pressing more than 1 second to activate.) Cancels ongoing scanning (Initializes the Function Number Display.).
	Power/Power LED	Turns the scanner ON and OFF. Lights in green when the scanner is turned ON.
LED	Check LED	Lights (in orange) when an error occurs.

1.1.5 Outer Dimensions

Unit: mm



1.1.6 Document Specification

- Recommended Document Type

- Woodfree paper
- Paper containing wood

- Paper thickness

Paper thickness is expressed by the "Paper weight" specification. The following paper weights are within spec for ADF scanning.

When scanning paper other than the type or weight listed above, perform a test-scan with a few sheets before executing the actual task in order to check whether or not the document can be scanned, if this test fails, scan from the flatbed.

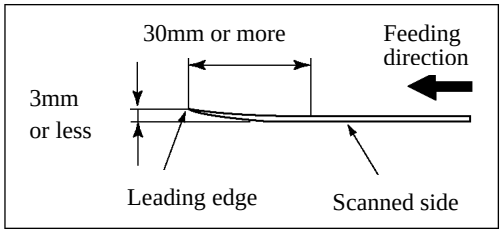
Paper size	A8	A7 ~ A5	A4 / Letter / Legal	B4	A3 / 11x17
Paper weight	127~209.3 g/ m^2	31 ~ 209.3 g/ m^2		52.3 ~ 209.3 g/m^2	

"Portrait" orientation only available for the following sizes of documents:

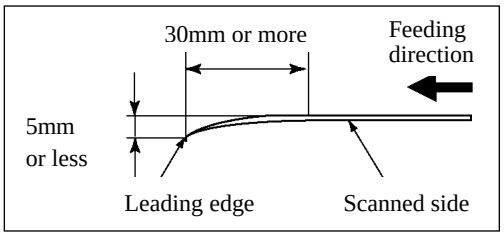
A8, Legal, B4, A3, 11x17

- Precautions

Scanning the following documents through the ADF is not recommended



- Document 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
- Photo (developing paper)



Do not scan the following documents through the ADF:

- Paper-clipped or stapled documents
- Documents where the ink is still wet
- Documents smaller than A8 (Portrait) in size
- Documents larger than A3 (297mm) size
- Documents other than paper such as fabric, metal foil or transparencies

NOTICE

- Carbonless paper contains chemical substances that may harm the Brake Rollers or paper-feeding rollers (e.g. Pick Rollers) when documents are fed. Pay attention to the following:
  Cleaning: If document jams occur frequently, clean the Brake Rollers and the Pick Rollers.
  Replacing parts: The service life of the Brake Rollers and the Pick Rollers for scanning "carbonless paper" may be shorter than that for scanning "wood containing paper."
- The service life of the Brake Rollers and the Pick Rollers for scanning "wood containing paper" may become shorter than that for scanning "woodfree paper."
- The Brake Rollers or Pick Rollers could be damaged if any photos or sticky notes on your document have contact with the Brake Rollers or Pick Rollers during scanning.
- Scanning documents of calendered paper, such as photos, ay damage their surface.

1.1.7 Multi feed Detection Conditions

One of the following 3 methods of multi feed detection is available in the scanner.

- Check overlapping (Ultrasonic)
- Check length
- Check overlapping and length

The following conditions are required for each selection:

1) Check overlapping

- Paper weight: 31 ~ 209g/m^2 (0.04 ~ 0.26mm)
- 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
- No other paper should be attached to the paper being scanned (photos, receipts, etc.)

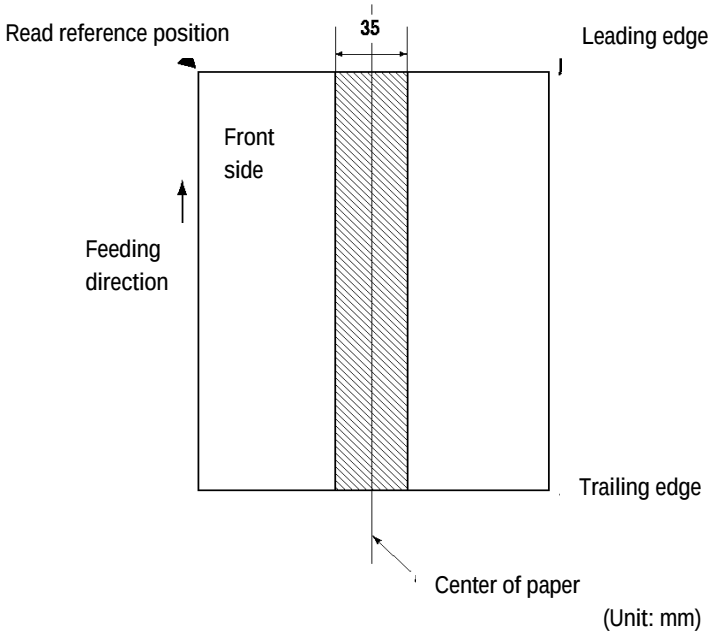
2) Check length

- 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: 31 ~ 209g/m^2 (0.04 ~ 0.26mm)
- 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
- No other paper should be attached to the paper being scanned (photos, receipts, etc.)

When overlapping check is specified and glued paper or electro-statically charged paper is fed, a false multi feed may occur. Multi feeds may be detected erroneously depending on the condition of the documents.



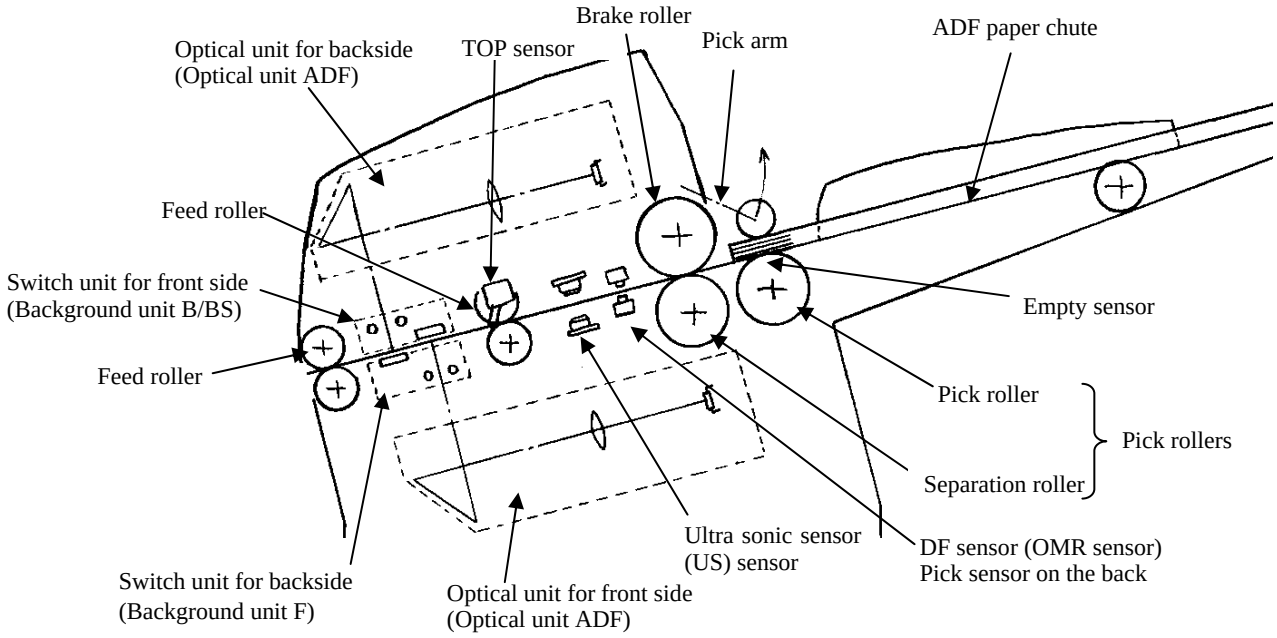
1.2 ADF Unit

1.2.1 Multi feed Detection Conditions

(1) Paper separation

The Pick arm is usually raised except when scanning operation is performed. When the Empty sensor detects that documents are loaded on the Chute unit and PC starts scanning, the Pick arm presses documents onto the Pick roller to insure proper picking. The Pick roller rotates to send the lowest document to the ADF. Documents are separated respectively by the Separation roller and the Brake roller. The Pick sensor detects paper jams. The DF sensor detects whether there is notch on the leading edge of paper (Job separation sheet). The Ultra sonic sensor and the DF sensor detect when multifeed errors occur. The TOP sensor located at the Feed roller determines when to begin scanning. The front side of the document is scanned by the lower optical unit, and backside is scanned by the upper unit. The scanned documents are deposited on the stacker by the Feed rollers. When the Pick sensor detects the trailing edge of a document, the next document is picked.

The paper feeding unit also includes the Cover open sensor and Pick arm position detection sensor.



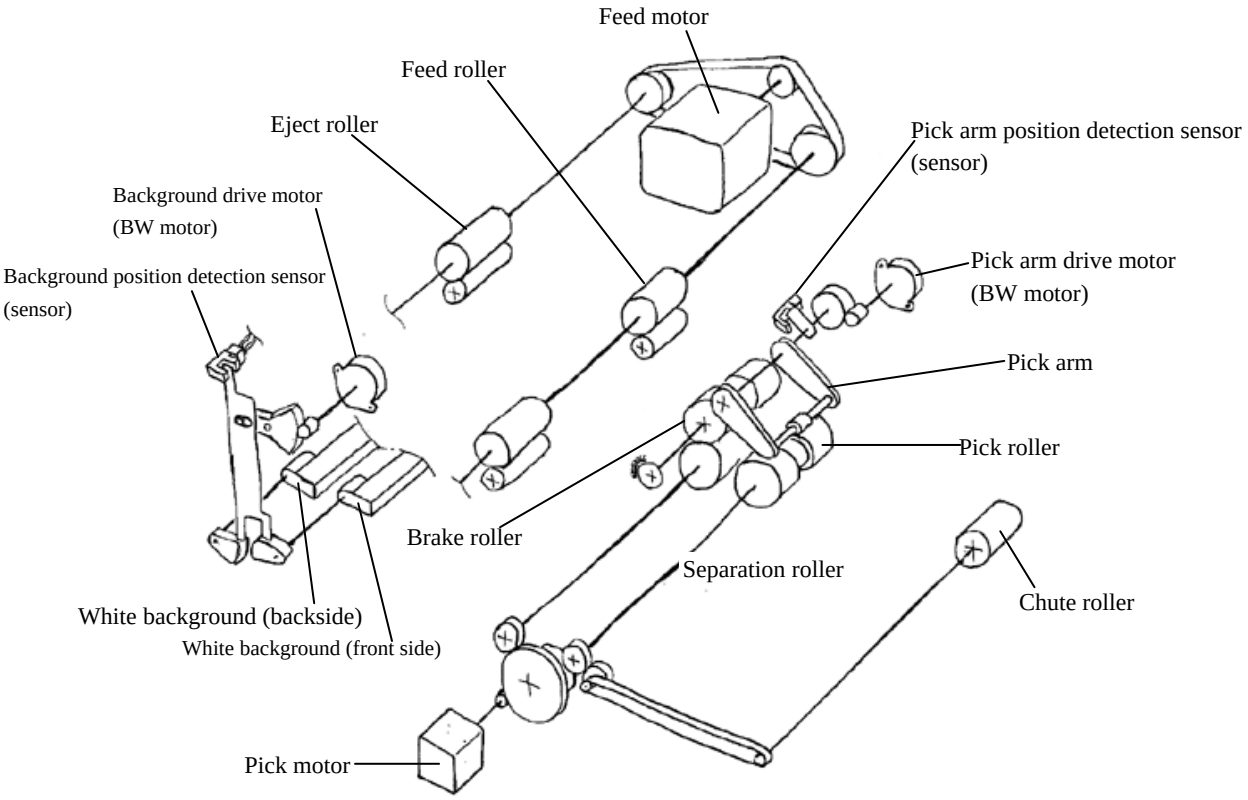
(2) Consumables

The Pick roller and Separation roller are included in the pick roller. The Brake roller is sold separately. These items are consumables and are the user's responsible to replace. (Refer to Section 7.3.1 for details).

The scanner supports two consumable counters, the brake roller counter and the pick roller counter. These counters indicate the number of sheets scanned since each consumable has been replaced. Users can check the counters from the "Scanners and Cameras" in Windows Control Panel or the Software Operation Panel on the PC or using the scanner built-in Maintenance mode. They can also reset the counters from these locations after the consumables have been replaced. (See Section 7.3 for details.)

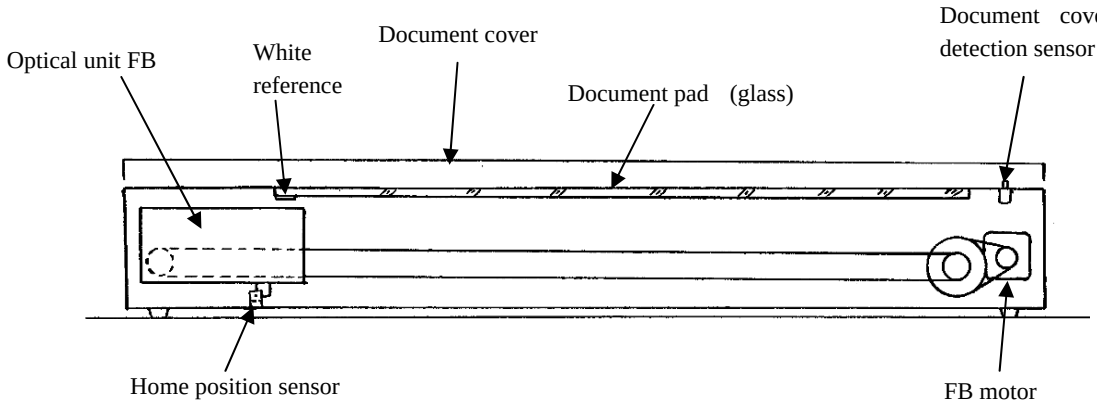
(3) Drive unit

The Pick roller, Separation roller and Chute roller are turned by the Pick motor. The Feed roller and Eject roller are turned by the Feed motor. The Pick arm and background are driven up and down by the respective BW motors. The motor drive circuit is located on the ADF junction PCA. If abnormal electric current runs through the motor drive circuit, the current is cut off by the motor fuse located in the Control PCA. The motor fuse for the ADF motor is the same as that of the FB.



1.2.2 Flatbed Section

(1) Configuration



(2) FB Scanning Control

During initial processing, immediately after power up, the FB optical unit moves to the home position sensor. If FB scanning is specified, the scanner moves the FB optical unit to scan the white reference (white area on the underside of the glass assembly) and adjusts the gain of the 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 is issued.

After successful gain adjustment, the scanner scans the specified length of the document while moving the FB optical unit in the sub-scanning direction at the speed that corresponds to the specified scanning resolution. If abnormally high electric current runs through the FB motor, the current is cut off by the motor fuse (which is shared with the ADF) on the Control PCA.

The FB optical unit uses a lamp to illuminate the documents, and an inverter.

(3) Document Cover Open Detection

The sensor OP can detect whether the document cover is open or closed.

(4) Black Background (optional)

Black document pad is also available as optional.

1.2.3 Reading Station

(1) Optical system

In case of ADF scanning, documents are set in the ADF paper chute, front side face down. The front side of the document is scanned by the lower Optical unit in the ADF, and the backside of the document is scanned by the upper Optical unit in the ADF. These two optical units have the same parts number.

In case of FB scanning, documents are scanned by the FB optical unit.

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

(2) Light source and heater

The scanner uses two lamps (White cold cathode discharge lamp) for ADF front / ADF back / FB respectively which lights the scanning area of front and back side in order to get sufficient CCD output. The lamp is turned ON or OFF by an inverter that is controlled by the Control PCA.
The life of the lamps is approximately 10,000 hours, which means the lamps last the life of the scanner.

The lamps have heaters and thermistors attached, which are controlled to stabilize the lamp temperatures while the power is supplied. The power of the lamps and heaters are cut OFF during sleep mode.

The ADF Optical units and the FB optical unit have two lamps with heaters respectively. The two lamps with heaters in the Background unit F are replaced by replacing the complete Background unit F. The two lamps with heaters in the Background unit B/BS are replaced by replacing the complete Background unit B/BS. The two lamps in the FB are replaced as a set.

(3) Scan controller

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

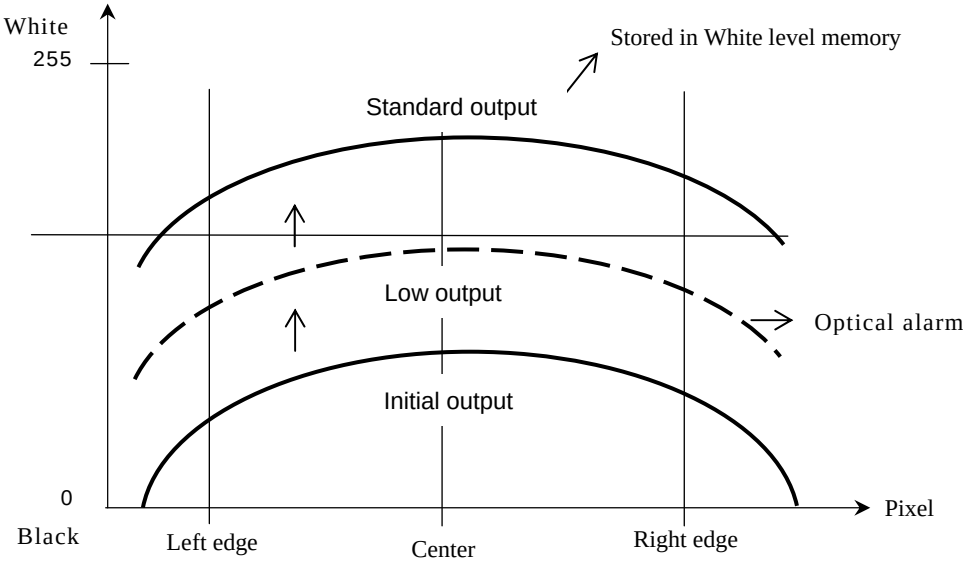


Figure 1.2.3 AGC (Automatic Gain Control)

When the gain adjustment is completed successfully, the scanner feeds the document to the scanning position at the speed that corresponds to the specified scanning resolution. The leading edge of the document is detected by the TOP sensor in front of the scanning position. The document is fed from the TOP sensor by some defined length for front and back side scanning (the length which determines sub-scanning offset), the scanner starts scanning the image. The scanner terminates the 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).

1.3 Controller

(1) Control PCA

The Control PCA controls the units in the block diagram below by 2 types of software, one for interface control (SDC) and another for mechanical control (MDC). The firmware can be updated through the SCSI/USB interface using the firmware update tool. Firmware version number can be confirmed in the procedure described in Section 6.1.7.

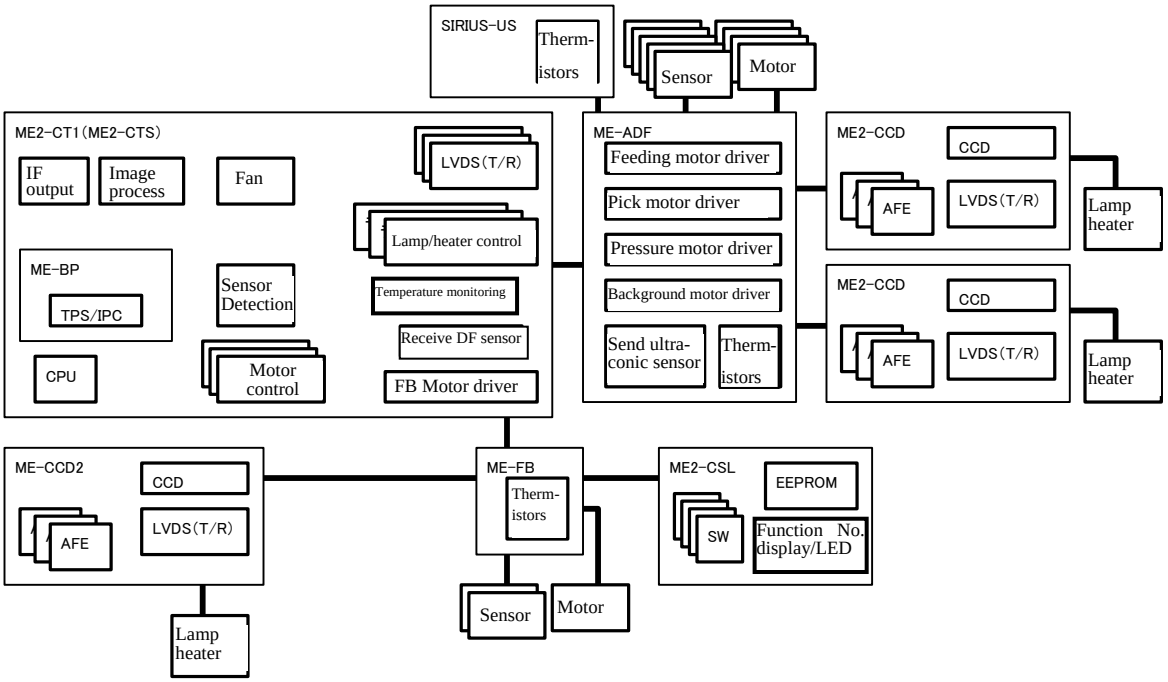


Figure 1.3 Function Block Diagram

The Control PCA includes the following connectors and a switch (Section 1.1.4).

- DC voltage input connector
- SCSI connector (1) fi-6770/fi-6770A only
- USB connector (1)
- SCSI ID setting rotary switch
- CGA board (SCSI connector x1, USB connector x1 fi-6770A only
- Connector for third party slot (CGA slot) Available on fi-6770 only as an option

If both the SCSI and USB cables are connected at the same time:

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

(2) Panel PCA

The Panel PCA on the operator panel includes not only the switches and lamps described in [Operator Panel] in Section 1.1.4, but also the EEPROM that records the information below. When replacing the Panel PCA with a new one, you need to save all the data stored in the EEPROM to the Control PCA temporarily (Section 6.2). Once the Panel PCA is replaced the data that was copied to the Control PCA needs to be copied to the new Panel PCA (Section 6.1.8).

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

(3) ADF junction PCA

This is a printed circuit board in the ADF that is used for signal relay between the Control PCA and each unit (optical unit, motors and sensors) in the ADF. This printed circuit board also includes the drive circuits for the motors in the ADF.

(4) FB junction PCA

This is a printed board in the FB that is used for signal relay between the Control PCA and each unit (carrier unit, motors and sensors) in the FB.

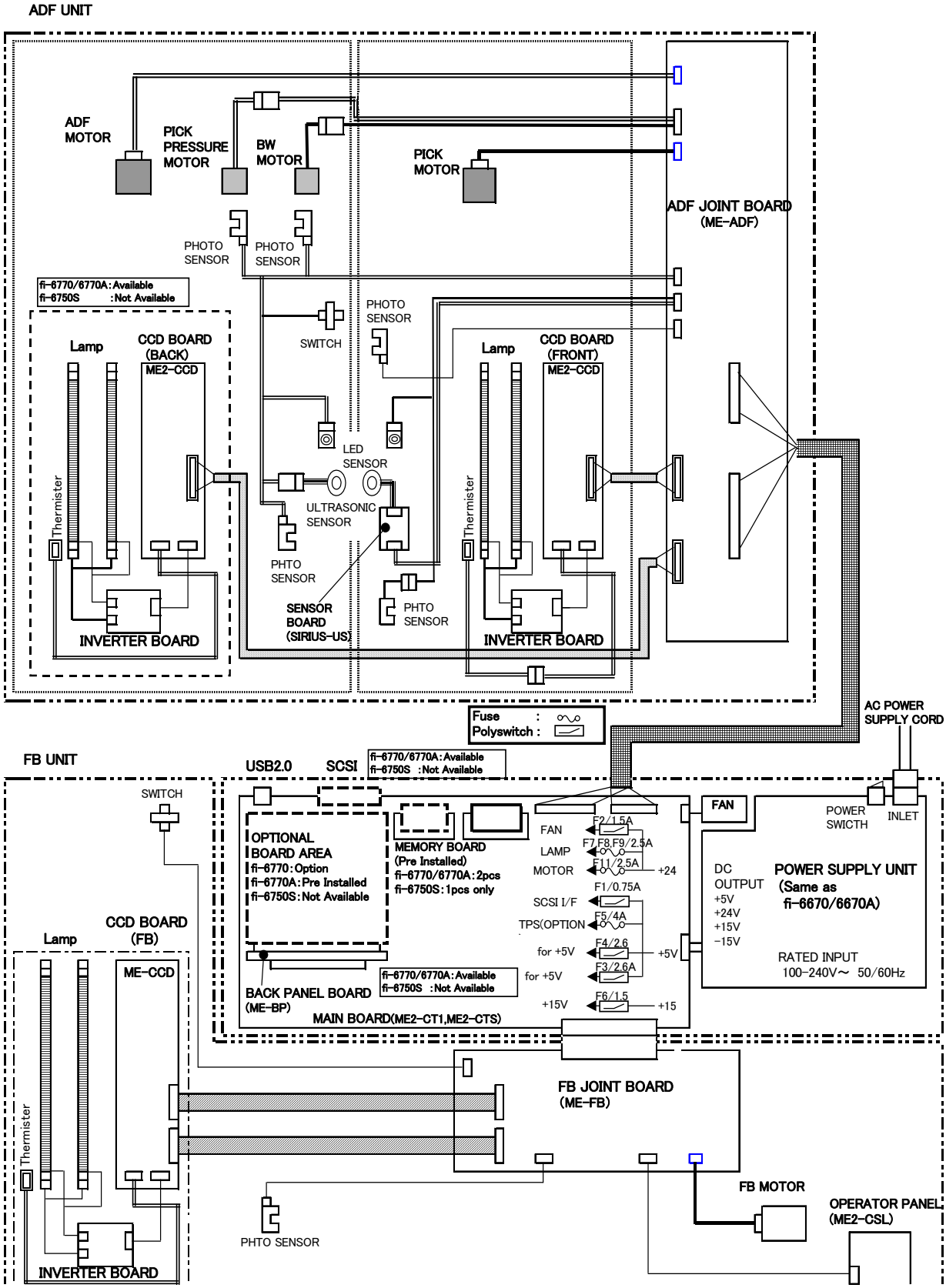
(5) Sleep mode

If a scan operation is not performed for over the specified period, the scanner automatically goes into the Sleep mode. The Sleep mode is set at 15 minutes at the factory. You can change the timer for this mode in the Software Operation Panel in Section 7.1.5. During this mode, the lamp heaters turn off and the Function No. display is turned OFF, only the power LED remains ON.

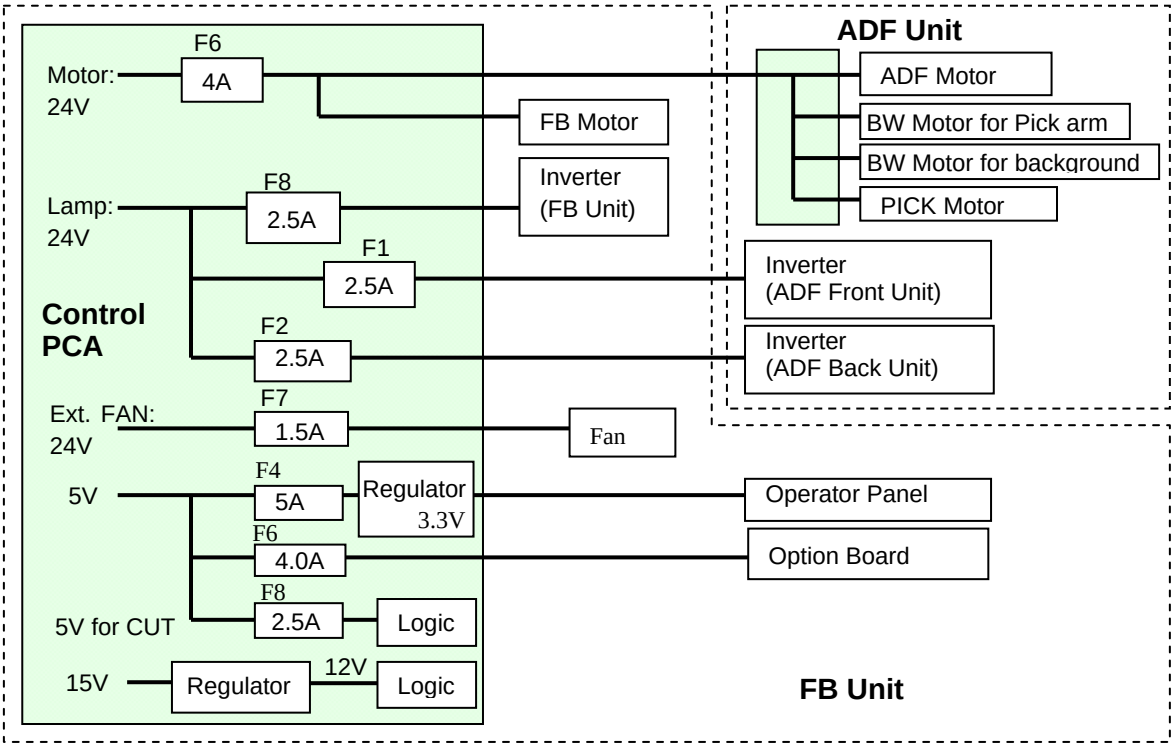
Perform either of the operations below in order to return from the Sleep mode.

- Set document on the ADF paper chute.
- Press either of buttons on the operator panel.
- Execute a command from the scanner driver.

1.4 Cable Connection Diagram



1.5 Diagram of Power Supply System



The Pin assignment of the connector between the Power supply and the Control PCA (CN15) is as follows.

CONNECTOR(CN15)

PIN 1	+24V
PIN 2	GND
PIN 3	-15V
PIN 4	GND
PIN 5	+15V
PIN 6	ON/OFF SIGNAL
PIN 7	+5V
PIN 8	+5V
PIN 9	GND
PIN 10	GND

Chapter 2 Installation

2.1 Unpacking the Scanner

⚠CAUTION

Injury: This scanner weighs 35kg, 77.2lb. (Shipping weight: 44kg, 97.0lb.). One person should not carry the scanner alone because the danger of dropping it.

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

1. Remove the upper package box.
2. Remove the accessory box.
3. Remove the cushions TF and TR, then remove the scanner from the box.
4. Remove the scanner from the polyethylene bag.
5. Remove all the accessories and remove the tape protecting the scanner.

The following table lists the packaging configuration.

No.	Items	Quantity
1	Upper package box	1
2	Accessory box (Attachment includes ADF paper chute, stacker, CD-ROM, Manual, etc.)	1
3	Cushion TR	1
4	Cushion TF	1
5	Scanner in Polyethylene bag	1
6	Cushion BR	1
7	Cushion BL	1
8	Lower package box	1

Table 2.1 Packaging configuration

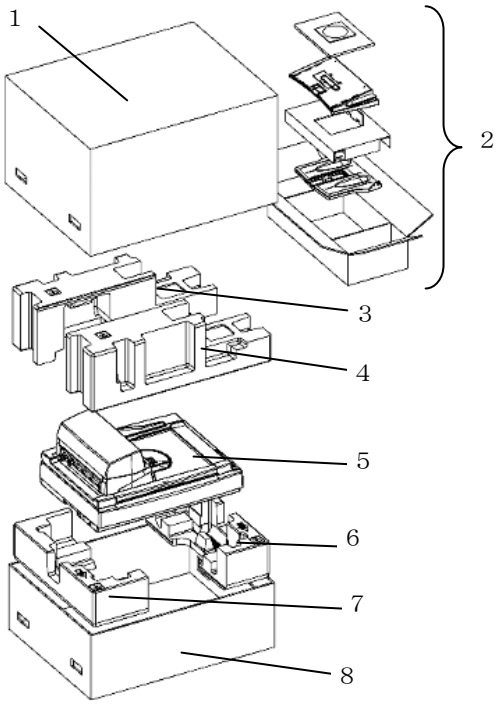


Figure 2.1

2.2 Installing the Scanner

2.2.1 For Safety Installation

Before installing the scanner, read the following precautions carefully to avoid scanner trouble.

Refer to Section 1.1.3 “Environmental Specification” for information on input power and Section 1.1.5 for 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.

NOTICE

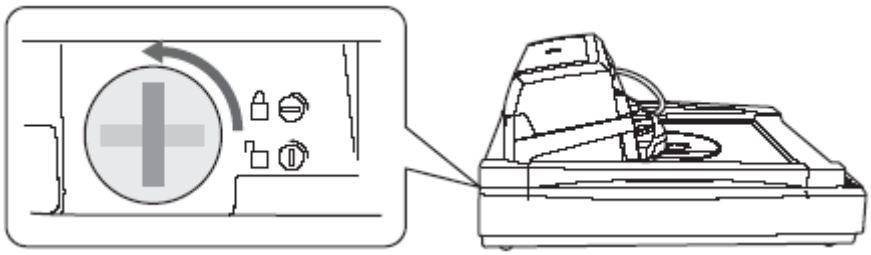
Make sure the rubber pads on the bottom of the scanner are level on the table or desk.

2.2.2 Installation

Install the scanner following the procedures below.

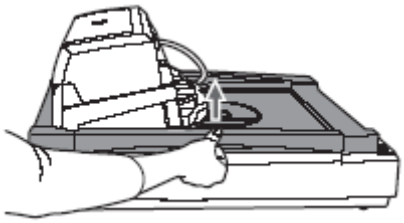
(1) Place the scanner at its installation site.

(2) Using a coin or the like, rotate the Transport Lock (Refer to [Rear] in Section 1.1.4 for the position) counterclockwise by 90 degree to unlock it. Make sure the slot in the Transport Lock is in the vertical position.

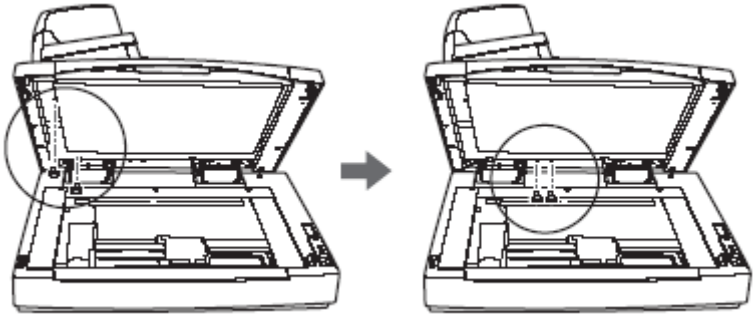


(3) Adjust the position of the ADF.

1. Holding the handle, lift open the Document Cover.



2. Remove the ADF Lock Screws, and then set them to the Lock Screw Storage Holes.



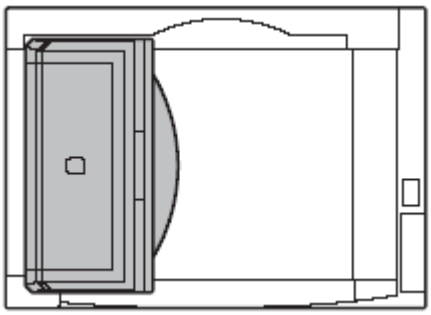
3. Gently close the Document Cover.
4. Change the position of the ADF.

NOTICE

1. Be careful not to pinch your fingers when moving the ADF.
2. Never rotate the ADF by more than 180 degree. Doing so may damage the ADF.

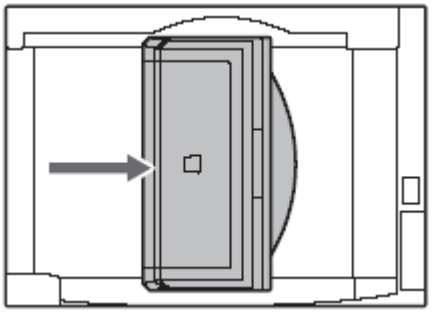
The ADF can be set to any of the following three positions:
After repositioning the ADF, be sure that the ADF is firmly locked to the new position.

- Traditional (Factory default)



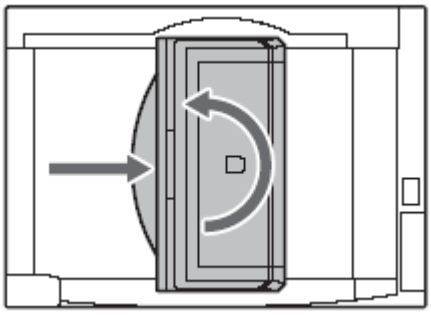
- Standard (Space-saving type and for right-handed operators)

Slide the ADF toward the center of the scanner.
Note the following explanation in this manual is based upon this standard type of the scanner.



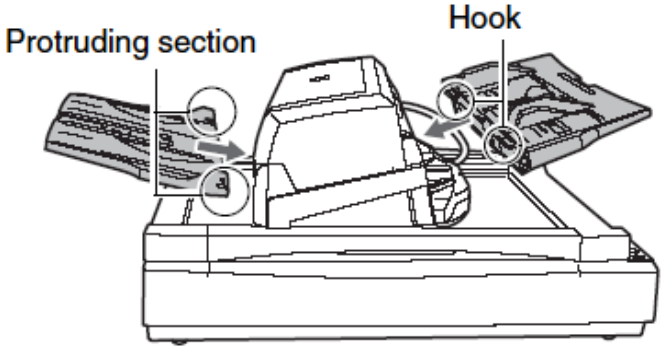
- Reversed (Space-saving type and for left-handed operators)

Slide the ADF toward the center of the scanner, and then rotate it counterclockwise by 180 degree.

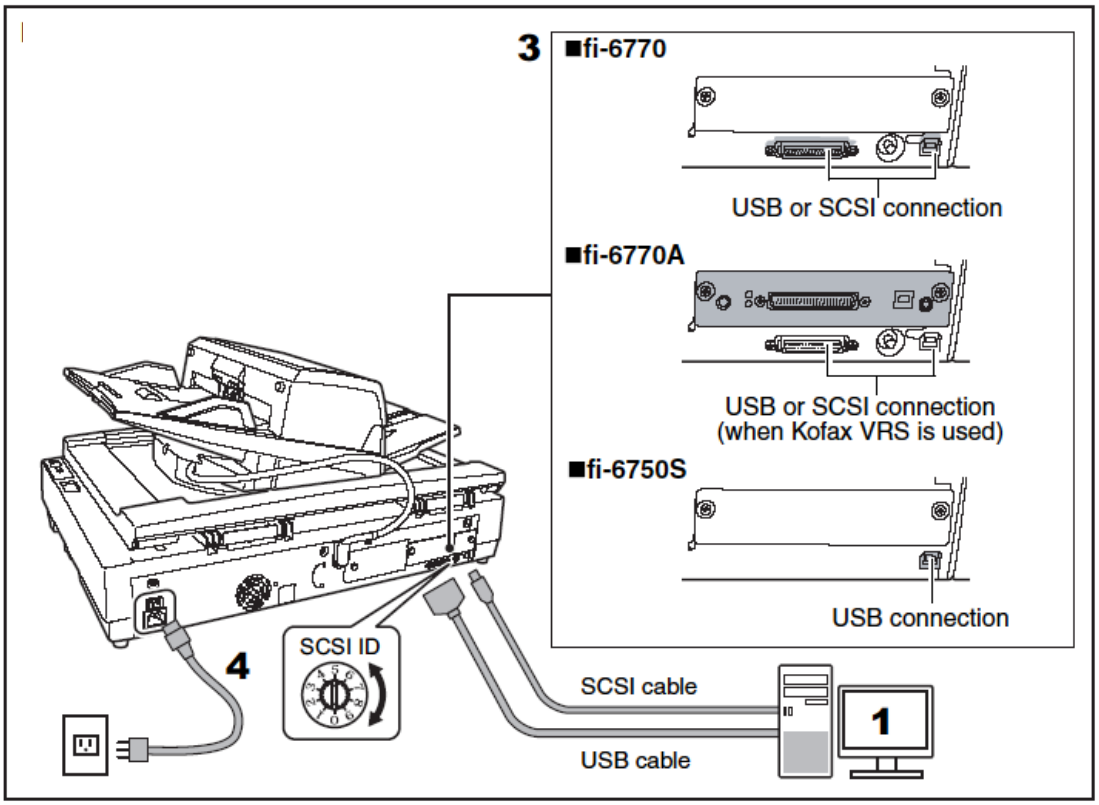


(4) Attach the Chute ASSY (ADF Paper Chute) and the Stacker ASSY on the scanner (Section 5.7.1, 5.7.3).

1. Insert the hooks of the Chute ASSY (ADF Paper Chute) into their corresponding holes on the scanner.
2. Fit the protruding sections of the Stacker ASSY into their corresponding slots on the scanner.



(5) Make sure that the PC you are going to connect the scanner to is turned off. Connect the scanner to the PC either with a USB or SCSI cable. Refer to Section 1.1.4 for the positions of the connection ports.



Note 1 Use either the USB interface or the SCSI interface.

Note 2 If Kofax VRS is not used on the fi-6770A, connect the cable to USB Connector 1 or SCSI Connector 1 on the scanner.

Note 3 When using the USB interface:

- Be sure to use the USB cable which comes as an accessory with this scanner.
- When connecting to an 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.
- If you connect the scanner with USB 2.0, it is required that the USB port and the Hub be compliant with USB 2.0. The scanning speed slows down when you connect the scanner with USB 1.1.

Note 4 When using the SCSI interface, the following SCSI cable and SCSI card must be purchased.

- **SCSI cable:**
  Use a SCSI cable whose connector on the computer side mates the connector on the SCSI card attached to your computer.
  On the scanner side, use either of the following SCSI cable types depending on the connector (1 or 2) used:
  SCSI Connector 1: 50-pin high-density type
  SCSI Connector 2: 68-pin high-density type
- **SCSI card:**
  Find the recommended SCSI card information on the Fujitsu website (FAQ):
  http://www.fujitsu.com/global/support/computing/peripheral/scanners/scsi/
- In a SCSI daisy chain configuration, connect the scanner so that it is the terminated device.
- The SCSI ID initially set at the factory is [5]. If the SCSI ID of another SCSI device is set to the same ID, change the scanner's SCSI ID to either one of [0] through [7].

(6) Connect the Power cable to the Power Connector of your scanner to the power outlet.

NOTICE

1. Be sure to use the supplied power cable. Use of other power cables may cause electrical shock or malfunction.
2. Do not use the supplied power cable for other products. Doing so may cause electrical shock or malfunction.

(7) Install the bundled software.

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

- FUJITSU TWAIN 32 (Scanner driver)
- FUJITSU ISIS (Scanner driver)
- Software Operation Panel (For configuring the scanning operation and consumable control)
- Error Recovery Guide (When a scanner error occurs, a guide to resolve the error can be displayed on the screen.)
- ScandAll PRO (demo version) (FUJITSU TWAIN 32 / ISIS scanner driver needs to be installed)
- QuickScan Pro™ (trial) (FUJITSU ISIS scanner driver needs to be installed)
- Scan to Microsoft SharePoint (Software for uploading the images scanned by ScandAll PRO onto SharePoint site)
- Image Processing Software Option * (Software option for binary-image-processing to the scanned images)
- Kofax VRS * (Software option for creating high-quality images with an easy operation)
- Manual
- Adobe Acrobat 8.1 Standard

*: Enclosed with fi-6770A.

Installing the TWAIN 32 /ISIS scanner driver automatically installs the scanner Software Operation Panel simultaneously.

Chapter 3 Maintenance Parts

The maintenance parts for devices differ according to the part/device number. Make sure to confirm the part/device number when selecting any of the following parts listed under "Maintenance parts that require special attention".

Maintenance parts that require special attention

FB UNIT, FB JUNCTION PCA, PANEL UNIT, PANEL PCA, CONTROL PCA, POWER SUPPLY

No.	Description	Part Number	Quantity						Old/New		Replacement Procedure	Appearance	Remarks
			fi-6770				fi-6770A						
			-B00X		-B10X		-B03X			*0			
0	ADF UNIT	PA03576-D800	1				1		O2	*1 *5	5.9.1		Includes ADF FIX UNIT and ADF REV UNIT. See Note *1 and *5 when using the Old or New part.
		PA03576-D870	1				1		O1				
		PA03576-D970	1		1		1		N				
1	ADF FIX UNIT (Old optical component installed *6)	PA03576-D812	1				1		O	*5 *6	5-9-2	3-1	See Note *5 and *6 when using the Old and New part.
		PA03576-D972	1				1		N				
	ADF FIX UNIT (New optical component installed *6)	PA03576-D988	1		1		1			*6			See Note *6
2	OPTICAL UNIT ADF (Old optical component *6)	PA03576-D805		1				1		*6	5-12-2	3-20	See Note *6
	OPTICAL UNIT ADF (New optical component *6)	PA03576-D935		1		1		1					
3	BACK GROUND UNIT F	PA03576-D801		1				1	O	*5	5-12-5	3-3	See Note *5 when using the Old and New part.
		PA03576-D974		1		1		1	N				
4	INVERTER	PA03338-D815		1		1		1			5-12-3	3-5	
5	US SENSOR	PA03334-F902		1		1		1			5-10-3	3-6	For scanning the front side
6	US PCA	PA03334-K906		1		1		1			5-10-4	3-7	
7	SENSOR	PA03338-D816		1		1		1			5-10-5	3-8	For detecting hopper empty
8	PICK SENSOR	PA03338-D845		1		1		1			5-10-2	3-9	
9	DF SENSOR	PA03338-D817		1		1		1			5-10-8	3-10	Black (of black/transparent per set)
10	PICK MOTOR	PA03576-D803		1		1		1			5-12-4	3-12	
11	HK RING ME	PA03338-D941		1		1		1			5-12-6	3-13	4 pieces per set
12	ADF JUNCTION PCA	PA03338-D823		1		1		1			5-12-1	3-15	
13	ADF REV UNIT (Old optical component installed *6)	PA03576-D813	1				1		O2	*1 *5 *6	5-9-2	3-2	See the Note *1, *5, and *6 when using Old or New part.
		PA03576-D871	1				1		O1				
		PA03576-D971	1				1		N				
	ADF REV UNIT (Optical component not installed)	PA03576-D831							O2	*1 *5			
		PA03576-D891							O1				
		PA03576-D991							N				
	ADF REV UNIT (New optical component installed *6)	PA03576-D987	1		1		1			*6			See Note *6
14	OPTICAL UNIT ADF (Old optical component *6)	PA03576-D805		1				1		*6	5-11-2	3-20	See Note *6
	OPTICAL UNIT ADF (New optical component *6)	PA03576-D935		1		1		1					
15	BACK GROUND UNIT B	PA03576-D802		1				1	O	*5	5-11-8	3-4	See Note *5 when using the Old and New part.
		PA03576-D975		1		1		1	N				
16	INVERTER	PA03338-D815		1		1		1			5-11-1	3-5	
17	US SENSOR	PA03334-F902		1		1		1			5-10-6	3-6	For scanning the backside
18	SENSOR	PA03338-D816		2		2		2			5-11-3 5-11-6	3-8	For detecting pick arm position For detecting background position
19	DF SENSOR	PA03338-D817		1				1			5-10-8	3-10	Transparent (of black/transparent per set)
20	GUIDE S ASSY	PA03576-D815		1				1			5-10-2	3-11	
21	BW MOTOR	PA03338-D822		2				2			5-11-3 5-11-5	3-14	
22	FEED MOTOR	PA03576-D804		1				1			5-11-4	3-16	
23	BELT ADF	PA03338-D915		1				1			5-11-4	3-17	

No.	Description	Part Number	Quantity						Old/New		Replace-ment Procedure	Ap-pear-ance	Remarks
			fi-6770				fi-6770A						
			-B00X		-B10X		-B03X			*0			
18	SENSOR	PA03338-D816		2		2		2			5-11-3 5-11-6	3-8	For detecting pick arm position For detecting background position
19	DF SENSOR	PA03338-D817		1				1			5-10-8	3-10	Transparent (of black/transparent per set)
20	GUIDE S ASSY	PA03576-D815		1				1			5-10-2	3-11	
21	BW MOTOR	PA03338-D822		2				2			5-11-3 5-11-5	3-14	
22	FEED MOTOR	PA03576-D804		1				1			5-11-4	3-16	
23	BELT ADF	PA03338-D915		1				1			5-11-4	3-17	

No.	Description	Part Number	Quantity						N/Old	Replacement Procedure	Appearance	Remarks
			fi-6770				fi-6770A					
			-B00X		-B10X		-B03X					
24	TOP SENSOR	PA03338-D826		1		1		1		5-10-7	3-18	
25	SENSOR OP	PA03338-D917		1		1		1		5-11-7	3-19	
26	FB UNIT	PA03576-D806	1							5-9-5	3-21	
		PA03576-D817					1					
		PA03576-D874			1							
27	FB MOTOR	PA03576-D863		1		1		1		5-13-9	3-22	Includes Belt
28	CCD CABLE FB	PA03338-D924		2		2		2		5-13-6	3-23	
29	FB JUNCTION PCA	PA03338-D836		1				1		5-13-2	3-24	
		PA03338-D872				1						
30	SENSOR OP	PA03338-D917		1		1		1		5-13-3	3-19	For detecting document cover open/close
31	SENSOR	PA03338-D816		1		1		1		5-13-4	3-8	For detecting home position
32	OPTICAL UNIT FB (Old optical component *6)	PA03338-D833	1				1		*6	5-13-5	3-25	See Note *6
	OPTICAL UNIT FB (New optical component *6)	PA03576-D936	1		1		1					
33	INVERTER	PA03338-D815		1		1		1		5-13-7	3-5	
34	LAMP FB	PA03338-D925		1		1		1		5-13-8	3-26	
35	PANEL UNIT	PA03576-D810	1				1			5-13-1	3-41	
		PA03576-D876			1							
36	PANEL PCA	PA03576-D811		1				1		5-13-1	3-42	
		PA03576-D877				1						
37	DOCUMENT COVER	PA03576-D814	1		1		1			5-9-3	3-27	
38	CUSHION	PA03576-D816		1		1		1		5-14-2	3-28	
39	HINGE UNIT	PA03576-D862	2		2		2			5-9-4	3-29	
40	ADF-CABLE	PA03576-D846	1		1		1			5-14-1	3-40	
41	CONTROL PCA	PA03576-D807	1				1			5-8-4	3-30	
		PA03576-D875			1							
42	DIMM	PA03576-D839		2		2		2		5-8-7	3-45	
43	FUSE 2	PA03576-D842		4		4		4		5-8-5	3-32	Rated current: 2.5A Nennstrom: 2,5 A *3 05
44	FUSE 3	PA03576-D843		1		1		1		5-8-5	3-33	Rated current: 4.0A Nennstrom: 4,0 A *4 05
45	(Reserved)											
	(Reserved)											
46	POWER SUPPLY	PA03338-D840	1				1			5-8-2	3-36	
		PA03338-D873			1							
47	FAN ASSY	PA03338-D847	1				1			5-8-3	3-43	
48	CGA BOARD	PA03576-K801	(1)		(1)		1			5-8-6	3-44	*2
49	DIMM	PA03576-D839	(1)		(1)		1			5-8-6	3-45	*2
50	STACKER ASSY	PA03576-D808	1		1		1			5-7-3	3-37	
51	CHUTE ASSY	PA03573-D809	1		1		1			5-7-1	3-38	
52	CHUTE ROLLER	PA03338-D933		1		1		1		5-7-2	3-39	

No.	Description	Part Number	Quantity						Old/New	* 0	Replacement Procedure	Appearance	Remarks
			fi-6750S										
			-B30X		-B40X								
0	ADF UNIT	PA03576-D830	1						O2	* 1	5.9.1		Includes ADF FIX UNIT and ADF REV UNIT. See Note *1 and *5 when using the Old or New part.
		PA03576-D890	1						O1	* 5			
		PA03576-D990	1		1				N				
1	ADF FIX UNIT (Old optical component installed *6)	PA03576-D834	1						O	* 5	5-9-2	3-1	See Note *5 and *6 when using the Old and New part.
		PA03576-D992	1						N	* 6			
	ADF FIX UNIT (New optical component installed *6)	PA03576-D994	1		1					* 6			See Note *6
2	OPTICAL UNIT ADF (Old optical component *6)	PA03576-D805		1						* 6	5-12-2	3-20	See Note *6
	OPTICAL UNIT ADF (New optical component *6)	PA03576-D935		1		1							
3	BACK GROUND UNIT F	PA03576-D801		1					O	* 5	5-12-5	3-3	See Note *5 when using the Old and New part.
		PA03576-D974		1		1			N				
4	INVERTER	PA03338-D815		1		1					5-12-3	3-5	
5	US SENSOR	PA03334-F902		1		1					5-10-3	3-6	For scanning the front side
6	US PCA	PA03334-K906		1		1					5-10-4	3-7	
7	SENSOR	PA03338-D816		1		1					5-10-5	3-8	For detecting hopper empty
8	PICK SENSOR	PA03338-D845		1		1					5-10-2	3-9	
9	DF SENSOR	PA03338-D817		1		1					5-10-8	3-10	Black (of black/transparent per set)
10	PICK MOTOR	PA03576-D803		1		1					5-12-4	3-12	
11	HK RING ME	PA03338-D941		1		1					5-12-6	3-13	4 pieces per set
12	ADF JUNCTION PCA	PA03338-D823		1		1					5-12-1	3-15	
13	ADF REV UNIT (Optical component not installed)	PA03576-D831	1						O2	* 1	5-9-2	3-2	See the Note *1, *5, and *6 when using Old or New part.
		PA03576-D891	1						O1	* 5			
		PA03576-D991	1		1				N				
14	OPTICAL UNIT ADF (Old optical component *6)	PA03576-D805		—		—				* 6	5-11-2	3-20	See Note *6
	OPTICAL UNIT ADF (New optical component *6)	PA03576-D935		—		—							
15	BACKGROUND UNIT BS	PA03576-D833		1					O	* 5	5-11-8	3-4	See Note *5 when using the Old and New part.
		PA03576-D976		1		1			N				
16	INVERTER	PA03338-D815		—		—					5-11-1	3-5	
17	US SENSOR	PA03334-F902		1		1					5-10-6	3-6	For scanning the backside
18	SENSOR	PA03338-D816		2		2					5-11-3 5-11-6	3-8	For detecting pick arm position For detecting background position
19	DF SENSOR	PA03338-D817		1		1					5-10-8	3-10	Transparent (of black/transparent per set)
20	GUIDE S ASSY	PA03576-D815		1		1					5-10-2	3-11	
21	BW MOTOR	PA03338-D822		2		2					5-11-3 5-11-5	3-14	
22	FEED MOTOR	PA03576-D804		1		1					5-11-4	3-16	
23	BELT ADF	PA03338-D915		1		1					5-11-4	3-17	

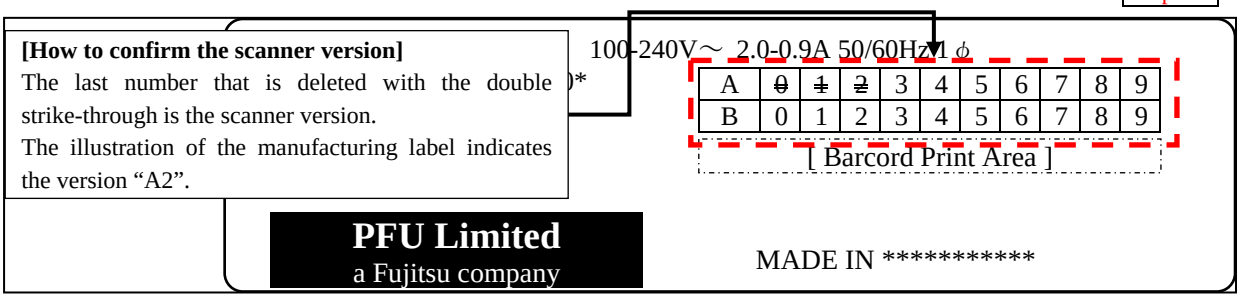
No.	Description	Part Number	Quantity						New/Old	Replacement Procedure	Appearance	Remarks
			fi-6750S									
			-B30X		-B40X							
24	TOP SENSOR	PA03338-D826		1		1				5-10-7	3-18	
25	SENSOR OP	PA03338-D917		1		1				5-11-7	3-19	
26	FB UNIT	PA03576-D835	1							5-9-5	3-21	
		PA03576-D889			1							
27	FB MOTOR	PA03576-D863		1		1				5-13-9	3-22	Includes Belt
28	CCD CABLE FB	PA03338-D924		2		2				5-13-6	3-23	
29	FB JUNCTION PCA	PA03338-D836		1						5-13-2	3-24	
		PA03338-D872				1						
30	SENSOR OP	PA03338-D917		1		1				5-13-3	3-19	For detecting document cover open/close
31	SENSOR	PA03338-D816		1		1				5-13-4	3-8	For detecting home position
32	OPTICAL UNIT FB (Old optical component *6)	PA03338-D833	1						*6	5-13-5	3-25	See Note *6
	OPTICAL UNIT FB (New optical component *6)	PA03576-D936	1		1							
33	INVERTER	PA03338-D815		1		1				5-13-7	3-5	
34	LAMP FB	PA03338-D925		1		1				5-13-8	3-26	
35	PANEL UNIT	PA03576-D810	1							5-13-1	3-41	
		PA03576-D876			1							
36	PANEL PCA	PA03576-D811		1						5-13-1	3-42	
		PA03576-D877				1						
37	DOCUMENT COVER	PA03576-D814	1		1					5-9-3	3-27	
38	CUSHION	PA03576-D816		1		1				5-14-2	3-28	
39	HINGE UNIT	PA03576-D862	2		2					5-9-4	3-29	
40	ADF-CABLE	PA03576-D846	1		1					5-14-1	3-40	
41	CONTROL PCA	PA03576-D832	1							5-8-4	3-30	
		PA03576-D888			1							
42	DIMM	PA03576-D839		1		1				5-8-7	3-45	
43	FUSE 2	PA03576-D842		3		3				5-8-5	3-32	Rated current: 2.5A Nennstrom: 2,5 A *3 05
44	FUSE 3	PA03576-D843		—		—				5-8-5	3-33	Rated current: 4.0A Nennstrom: 4,0 A *4 05
45	(Reserved)											
	(Reserved)											
46	POWER SUPPLY	PA03338-D840	1							5-8-2	3-36	
		PA03576-D873			1							
47	FAN ASSY	PA03338-D847	1							5-8-3	3-43	
48	CGA BOARD	PA03576-K801								5-8-6	3-44	*2
49	DIMM	PA03576-D839								5-8-6	3-45	*2
50	STACKER ASSY	PA03576-D808	1		1					5-7-3	3-37	
51	CHUTE ASSY	PA03573-D809	1		1					5-7-1	3-38	
52	CHUTE ROLLER	PA03338-D933		1		1				5-7-2	3-39	

<Note> 07

*0: Compatibility

06 *1: The “Old1” and “New” maintenance part have a ball bearing for the shaft bearing at the Feed roller side.
This part is applied to the scanner with version “A2” and later.
When replacing the part on the scanner with version “A2” or later, be sure to replace it with the “Old1” or “New” part.
The compatibility for each part version is as follows: 07

Old2 → Old1, New: Compatible, New, Old1 → Old2: Not compatible



*2: If the CGA option [fi-677CGA] is installed on the fi-6770, order the same part.
The CGA option cannot be installed on fi-6750S.

05 *3: Silk-printed numbers on the Fuses for fi-6770X: F7, F8, F9, F11
Silk-printed numbers on the Fuses for fi-6750X: F7, F9, F11
Use the specified Fuses only.

*3: Seidendrucknummer auf den Sicherungen für fi-6770X: F7, F8, F9, F11
Seidendrucknummer auf den Sicherungen für fi-6770X: F7, F9, F11
Verwenden Sie nur die angegebenen Sicherungen.

*4: Silk-printed number on the Fuse for fi-6770X: F5
No Fuse 3 mounted on fi-6750X.
Use the specified Fuse only.

*4: Seidendrucknummer auf der Sicherung für fi-6770X: F5
Im fi-6750X befindet sich keine Sicherung 3.
Verwenden Sie nur die angegebene Sicherung.

06 *5: The “New” maintenance parts are of higher dust-proofness. They are adopted on the scanner with version “A8” or later.
When replacing the part on the scanner on which the new parts are installed (A8 or later), be sure to order the new part to replace.
The compatibility for each part version is as follows: 07
Note that old parts are compatible with the new parts. (Old → New: Compatible, New → Old: NOT compatible)

07 *6: According to the device number, the optical component included in the optical unit is either dye-based (old) or pigment-based (new).
When replacing with a maintenance part, refer to table 1, and after checking the installed optical component of the target device, replace as follows:

1) When replacing the "(Old) Optical component" with another "(Old) Optical component", replace according to the normal replacement procedure.
2) When replacing the "(New) Optical component" with another "(New) Optical component", replace according to the normal replacement procedure.
3) When replacing the "(Old) Optical component" with the "(New) Optical component", change the CCD unit information and the firmware as described below in “Replacement Procedure”.
4) When replacing the "(New) Optical component" with the "(Old) Optical component", change the CCD unit information as described below in “Replacement Procedure”.

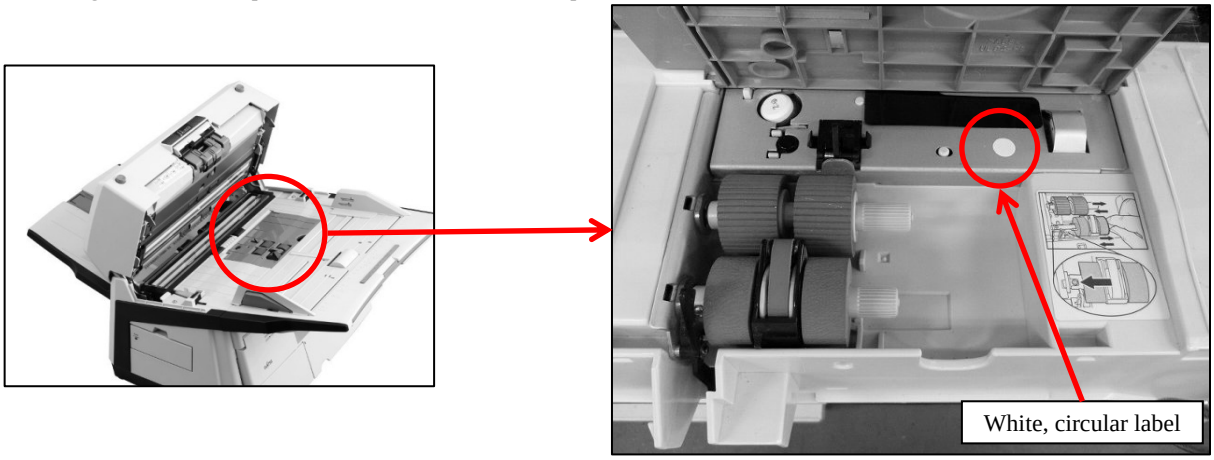
[Note] If the above instructions are ignored, and an optical component that differs from the previously installed optical component is installed, a difference (in color) will be produced in the scanned image.

<Target Maintenance Parts>
ADF FIX Unit
ADF REV Unit
Optical Unit ADF
Optical Unit FB

Table 1: Old Optical Component/New Optical Component According to Model Type

Device		Installed with "Old Optical Component" (Dye-based Filter)		Installed with "New Optical Component" (Pigment-based Filter)		Remarks
Model	Part No.	Serial No.	Version	Serial No.	Version	
FI-6770	PA03576-B001	000001 ~ 699999	A0 ~ A9	700001 ~	B1 or later	
	PA03576-B002	000001 ~ 699999	A0 ~ A9	700001 ~	B1 or later	
	PA03576-B005	000001 ~ 699999	A0 ~ A9	700001 ~	B1 or later	
	PA03576-B007	000001 ~ 699999	A0 ~ A9	700001 ~	B1 or later	
FI-6770A	PA03576-B031	000001 ~ 699999	A0 ~ B0	700001 ~	B3 or later	
	PA03576-B032	000001 ~ 699999	A0 ~ B0	700001 ~	B3 or later	
	PA03576-B035	000001 ~ 699999	A0 ~ B0	700001 ~	B3 or later	
	PA03576-B037	000001 ~ 699999	A0 ~ B0	700001 ~	B3 or later	
FI-6750S	PA03576-B301	000001 ~ 699999	A0 ~ A9	700001 ~	B1 or later	
	PA03576-B302	000001 ~ 699999	A0 ~ A9	700001 ~	B1 or later	
	PA03576-B305	000001 ~ 699999	A0 ~ A9	700001 ~	B1 or later	
	PA03576-B307	000001 ~ 699999	A0 ~ A9	700001 ~	B1 or later	
FI-6750LA	PA03576-B321	800001 ~ 899999	A0 ~ A9	700001 ~ 799999	B1 or later	

<Reference>
An identifying mark is attached as follows to devices installed with the "New optical component".
*There is no identifying mark on devices installed with the "Old optical component". For the identifying mark of the target maintenance part, refer to the section for each part.



A white, circular label is attached to the metal plate that can be seen by opening the Pick Roller Cover.

Replacement Procedure

Perform the following replacement procedure. For 6X70, refer to “For fi-6770/fi-6770A”. For 6X50, refer to “For fi-6750S/LA”

For fi-6770/fi-6770A

A. The procedure to setup the CCD unit information.

1. Scope

This document describes the procedure to setup the CCD unit information to scanner.

When you have replaced the CCD units (optical unit etc), be sure to run the CCD unit information setup tool (ExchangeParts.exe) in order to adjust the image quality.
As you will need to select part numbers for the units (PAxxxx-xxxx) during the setup, be sure to take a note of them in advance.

2. Using the CCD unit information setup tool：ExchangeParts.exe

Prerequisites

- Computer where a scanner driver (FJ TWAIN or FJ ISIS) is installed
- Native USB Interface connection

1) Turn on your scanner

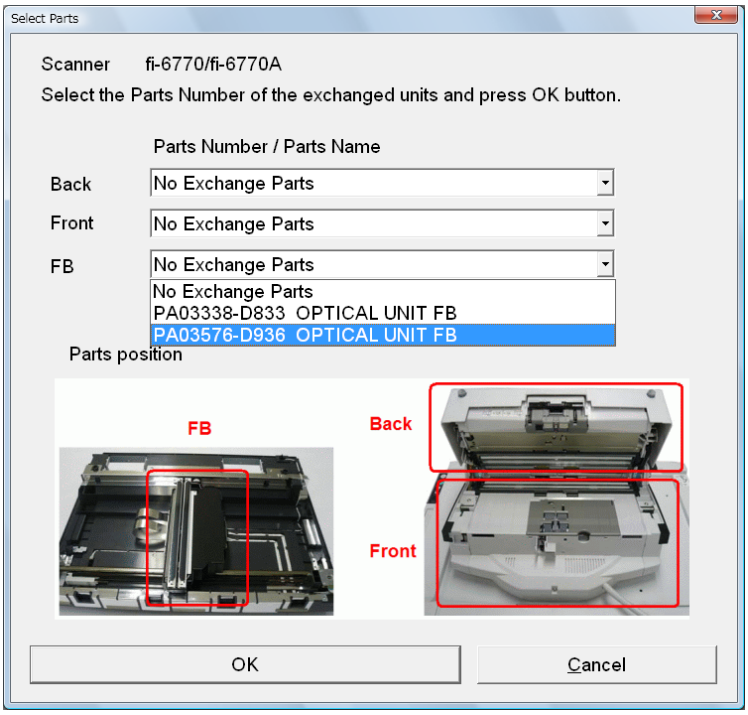
Connect your scanner with the computer online, and turn on the scanner.
Here, be sure to connect the cable to the native USB connector (but not to the USB connector on the CGA board).
Refer to the Note at the next page.

2) Run the tool and select the part numbers for the replaced CCD units

Unzipping the “ME2 ExchangeParts_V01L01.zip" will create the “ExchangeParts.exe” and three other files (Total four files).

Run ExchangeParts.exe. Then, the following dialog box appears prompting you to select part numbers for the replaced units.

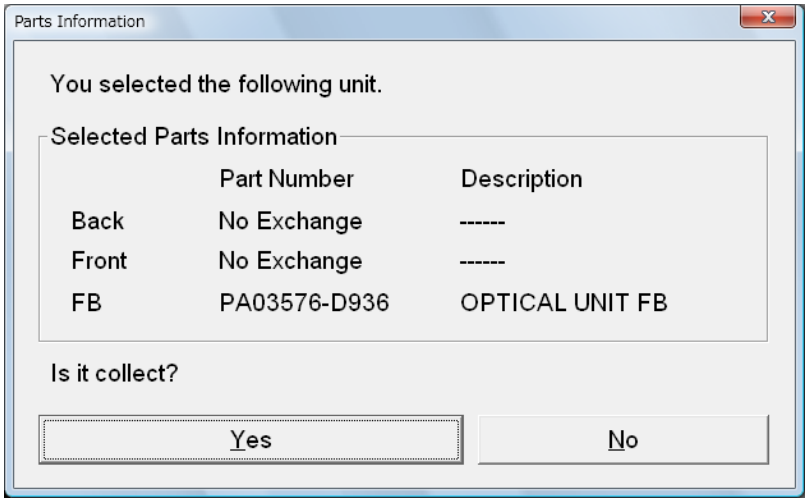
If no dialog box appears, check for the connection of your scanner. In the dialog box, select part numbers for all the units you replaced, and then click [OK].



3) Confirm the part numbers for the replaced CCD units

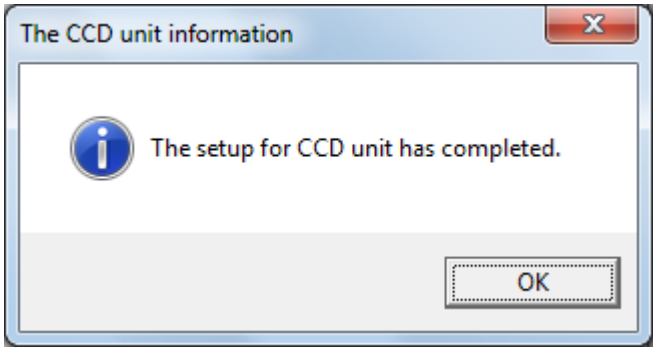
Clicking [OK] in the dialog box (in the previous step) will output the following confirmation message.

When the selected part numbers are correct, click [Yes]. Then, the CCD unit information will be configured in your scanner. When the numbers are incorrect, click [No] and select the part numbers again.



4) Complete

Clicking [OK] in the dialog box (in the previous step) will output the following message box, and this procedure completes.



Important:

- When replacing the CCD unit regardless of whether the CCD unit is old or new revision, it is necessary to configure the CCD unit information in the scanner by the tool.
- When the EEPROM cannot be saved or restored while replacing the operation panel of the scanner that comes with the new revision CCD, it is necessary to configure the CCD unit information in the scanner by the tool.

B) The procedure to update the firmware of fi-6770/ fi-6770A

1. Scope

This document describes the procedure to update the firmware of fi-6770/ fi-6770A.

Following table shows the information for this rework.

Table A:

Model	**fi-6770/fi-6770A**	
Firmware	**SDC, MDC**	
Data files	**0015594K.mot** **0015596J.mot**	
New Scanner revision	**PA03576-B001/ B002 / B005 / B007**	**B0**
	PA03576-B031/ B032 / B035 / B037	**B1**
New Firmware revision	**SDC : 0K00** **MDC : 0J00**	

2. Firmware data for this rework

Please download data file containing the updated version firmware and its updater from the following web site.

http://imaging-ss.trad.pfu.co.jp/downloads/firmwares/fi-6770.html

The updater works with the following OS.

Windows® 2000

Windows® XP

Windows® Vista

* If update is required in Windows® 2000, Windows® XP or Windows® Vista, the user is required to login with the ID which has the administrator authority.

3. Confirmation before the firmware update

Before updating firmware, make sure that the scanner driver is installed correctly in your PC. Details about scanner driver installation are written in the User's Guide attached to Scanner.

4. Update procedure

Please update the firmware by following the procedure below.
Note that the following shows displays for fi-6770/ fi-6770A.

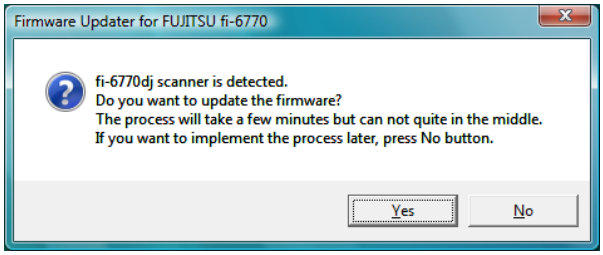
1) Power on the scanner, then power on the PC.
2) Unzip the following file onto an arbitrary folder.

"FisRomUp_For_Fi-6770_K_J.zip"

Note: It should be unzipped onto the [C:] drive (or a folder within) in order to keep the file path at minimum.

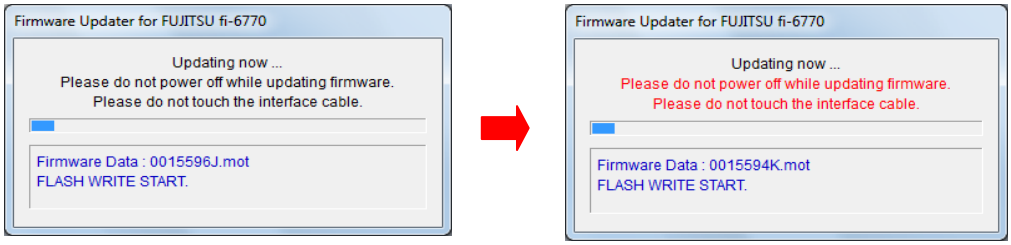
3) Execute "FisRomUp.exe" in the following folder which has extracted previously:
i.e. *C:\ Firmware Update for FUJITSU "Fi-6770_K_J\FisRomUp.exe"*
4) Confirmation window appears. Click "Yes" to start updating the firmware.

Both two firmwares are updated at once.



5) The following screen appears while updating firmware.

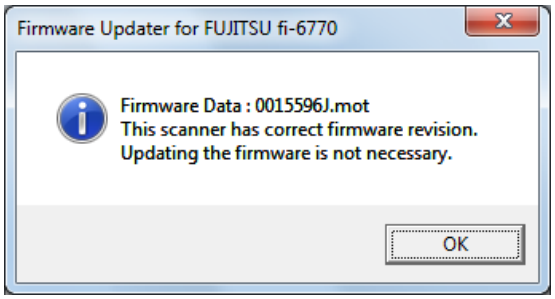
Caution: **Do not power off the scanner and PC during updating.**



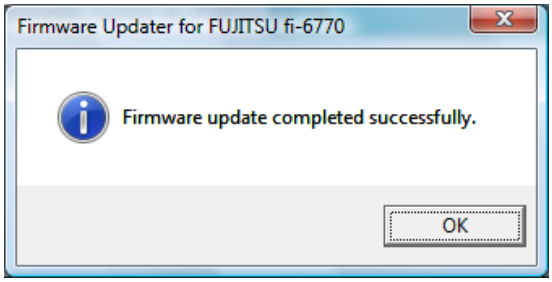
MDC Firmware

SDC Firmware

If the scanner already has the correct firmware revision, the following appears. Click "OK" to continue.



6) When firmware update is completed, the following appears. Click “OK” to terminate the update procedure.



5. Confirming the firmware revision in Maintenance mode #6

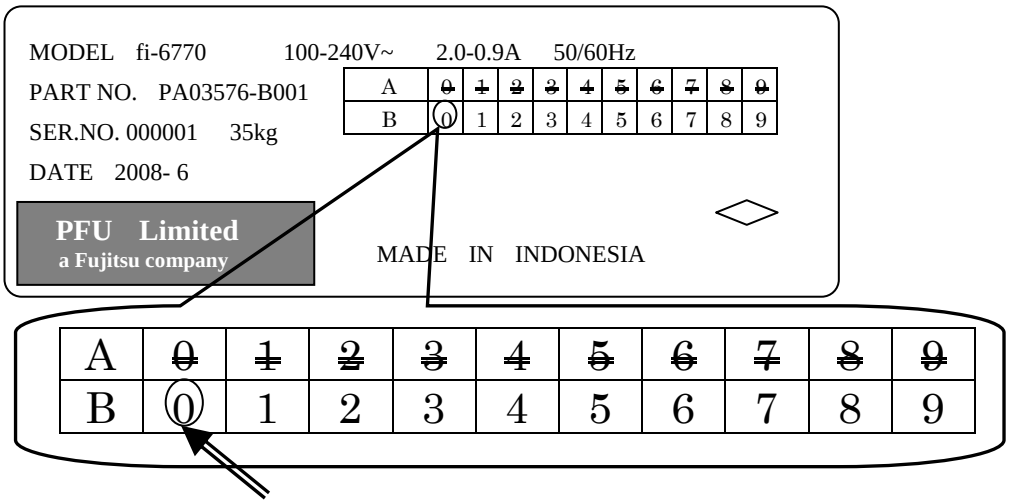
You can confirm the current firmware revision in the maintenance mode #6 or newer in the Maintenance manual.

Firmware version number SDC…… – 1100
MDC…… = 1000

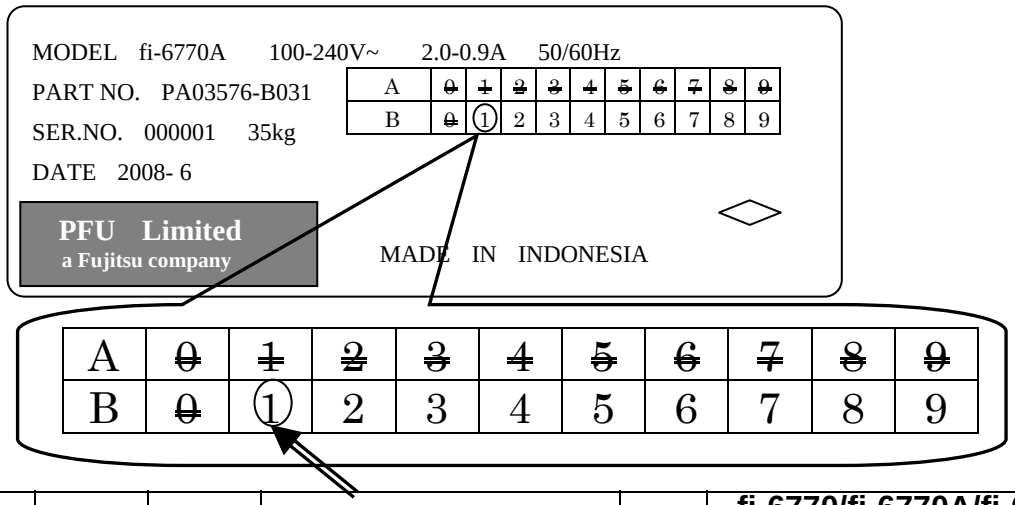
6. Marking the firmware revision label

At the last, mark out the suitable revision number according to PART NO. on the scanner revision label attached to backside of the scanner by using a fine marker.

(PART NO.: PA03576- B001/ B002/ B005/ B007) Mark out **B0**



(PART NO.: PA03576- B031/ B032 /B035 /B037) Mark out **B1**



C) The procedure to update CGA firmware of fi-6770A

1. Application

This section informs the procedure to update the CGA firmware for fi-6770A.

2. Required information

Please have the following information ready.

a) The firmware data listed in Table A.

Table A

CGA	Contents	Data Files
CGA Board Model No.	PA03576-K001	-
CGA Firmware	C (stated as "V2.86.014" in Firmware Uploader	0015706C.bin & 0015707B.bin

Note : <u>When this firmware will be updated, the FPGA will be updated at the same time.</u>

b) The firmware updater supports the following OS versions.

Windows® 2000
Windows® XP
Windows® Vista
Windows® 7

* If update is required in Windows® 2000, Windows® XP, Windows® Vista or Windows® 7, the user is required to login with the ID which has the administrator authority.

3. Update procedure

Proceed to update according to the instructions below.

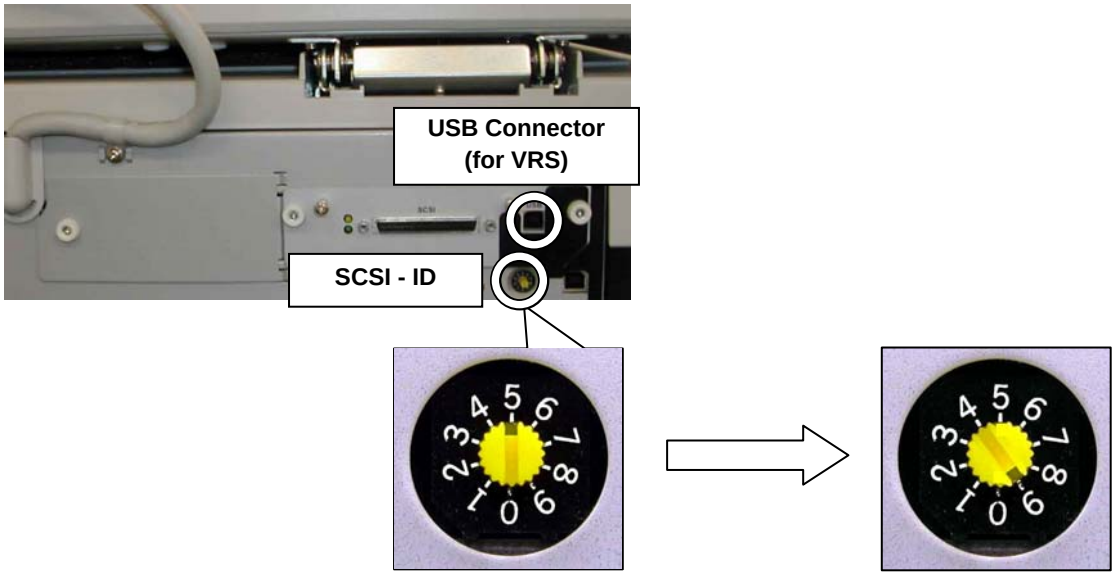
3.1 Installing TWAIN or ISIS Driver

Install either TWAIN or ISIS Driver if it has not been installed yet.

3.2 Updating firmware

1) Turn off the scanner power.
Set SCSI-ID to 9 and connect USB cable to the CGA board side.

<u>Please remember the present SCSI-ID.</u>



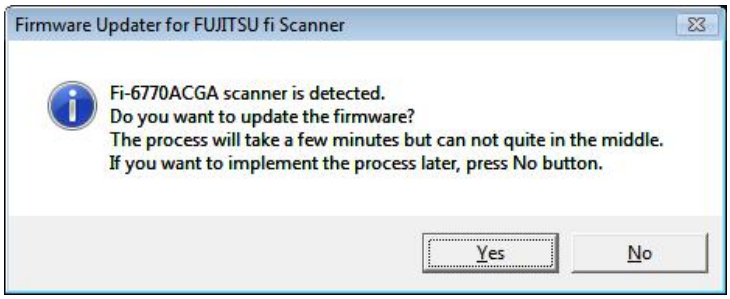
*This figure shows the status that SCSI-ID is "5". SCSI-ID to "9"

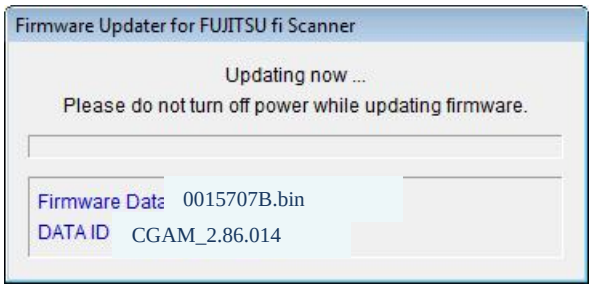
2) Turn on the scanner power.

3) Unzip the following file onto an arbitrary folder.
"FisFwDl_For_Fi-6x70A(CGA)_C.zip"
Note: It should be unzipped onto the [C:] drive (or a folder within) in order to keep the file path at minimum.

4) If two LEDs of CGA board turns off, execute "FisFwDl.exe" which has previously been extracted from the above folder.

5) Click on "Yes" to start updating.





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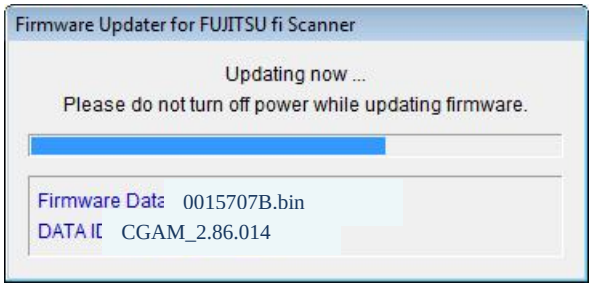

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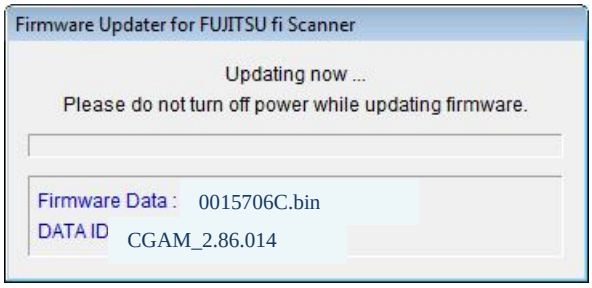
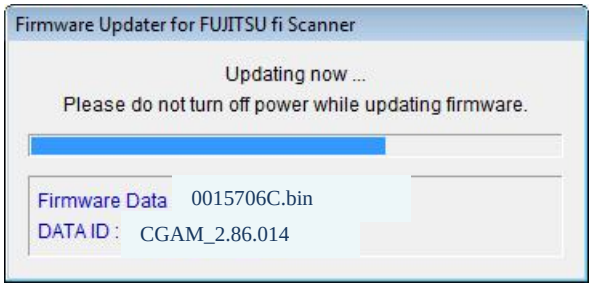
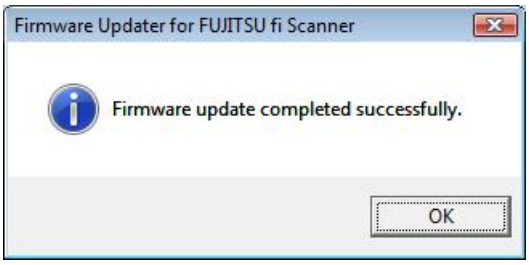


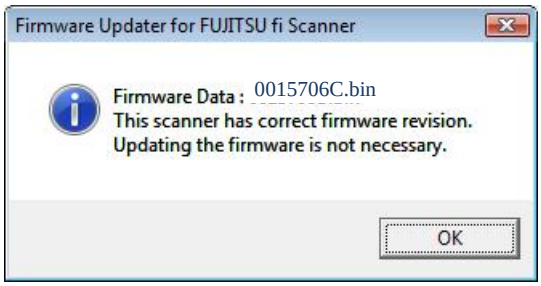
↓



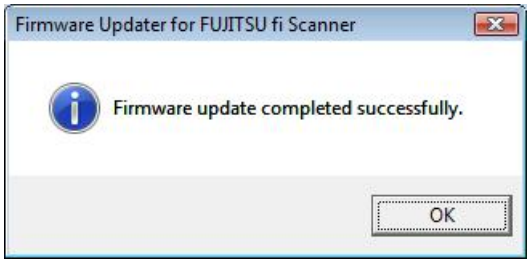
↓



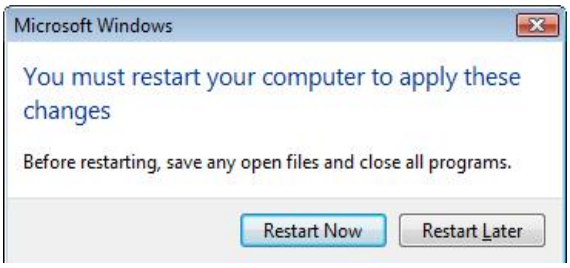
6) If the CGA board has the correct firmware revision, the following appears. Click “OK” to continue.



7) When firmware update is completed, the following appears. Click on “OK” to terminate the update procedure.

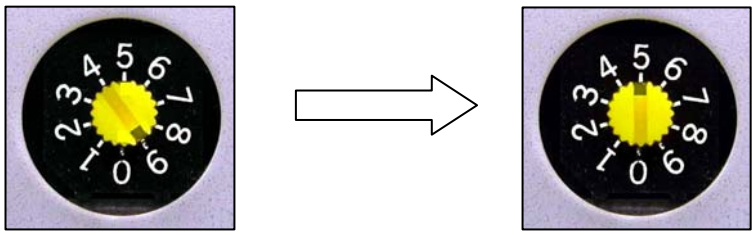


8) Click on “Yes” to restart your computer and switch the scanner power from OFF to ON.



Note: User must turn off the scanner and turn the power back on, otherwise the update will not be effective.

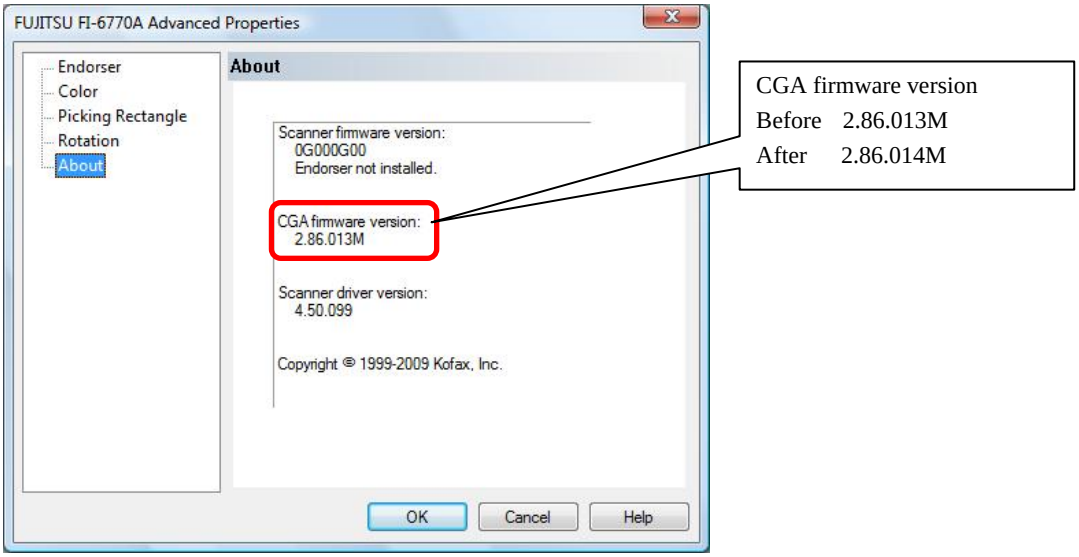
9) **<u>After completing the update, please return to SCSI-ID setting.</u>**



This figure shows the example that SCSI-ID is “5” before the update procedure.

4. How to confirm the version after updating

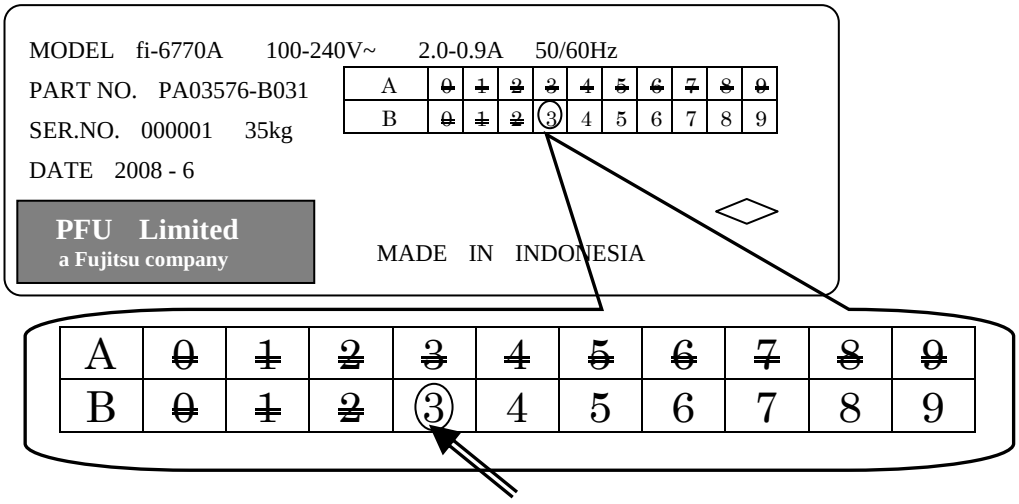
Confirm the CGA firmware version from the following dialog box.
Go to [About] panel of [FUJITSU FI-6670A Advanced Properties] and check the CGA firmware version.



5. Marking the firmware revision label

At the last, mark out the suitable revision number according to PART NO. on the scanner revision label attached to backside of the scanner by using a fine marker.

(PART NO.: PA03576- B031/ B032/ B035/ B037) Mark out **B3**



For fi-6750S/LA

A. The procedure to setup the CCD unit information.

1. Scope

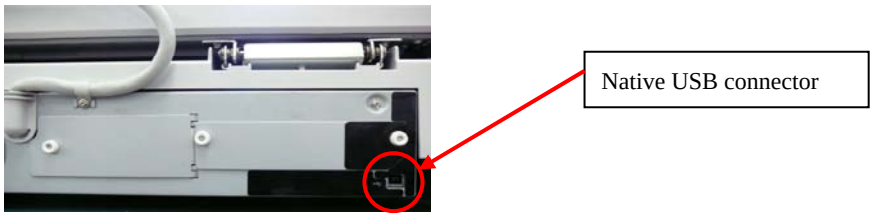
This document describes the procedure to setup the CCD unit information to scanner.

> When you have replaced the CCD units (optical unit etc), be sure to run the CCD unit information setup tool (ExchangeParts.exe) in order to adjust the image quality.
> As you will need to select part numbers for the units (PAxxxx-xxxx) during the setup, be sure to take a note of them in advance.

2. Using the CCD unit information setup tool : ExchangeParts.exe

Prerequisites

- Computer where a scanner driver (FJ TWAIN or FJ ISIS) is installed
- Native USB Interface connection

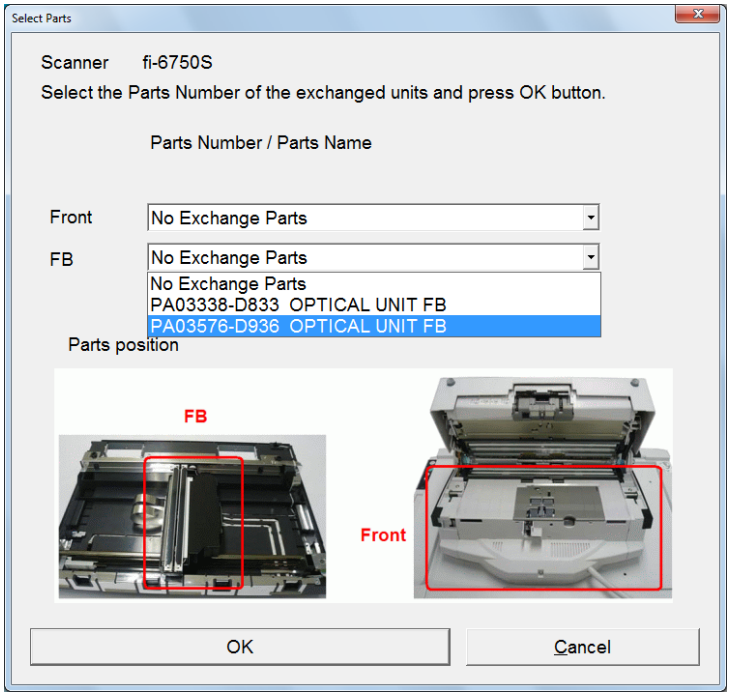


1) Turn on your scanner

Connect your scanner with the computer online, and turn on the scanner.
Here, be sure to connect the cable to the native USB connector (but not to the USB connector on the CGA board). Refer to the Note at the next page.

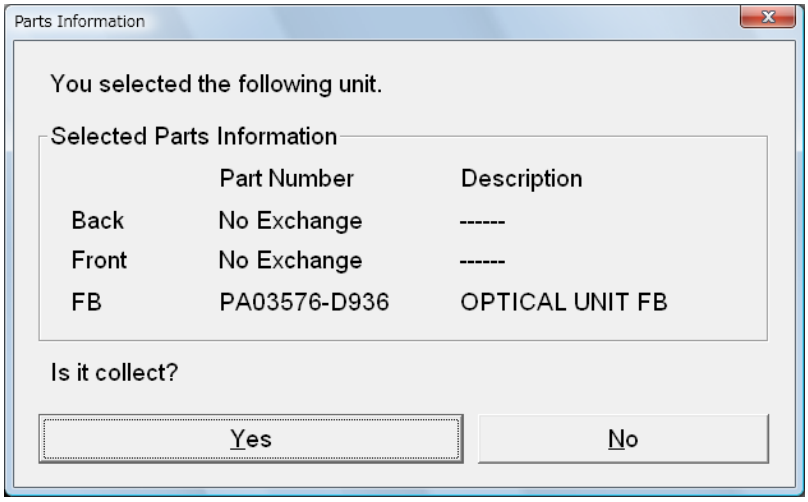
2) Run the tool and select the part numbers for the replaced CCD units

Unzipping the “ME2 ExchangeParts_V01L01.zip" will create the “ExchangeParts.exe” and three other files (Total four files).
Run ExchangeParts.exe. Then, the following dialog box appears prompting you to select part numbers for the replaced units.
If no dialog box appears, check for the connection of your scanner. In the dialog box, select part numbers for all the units you replaced, and then click [OK].



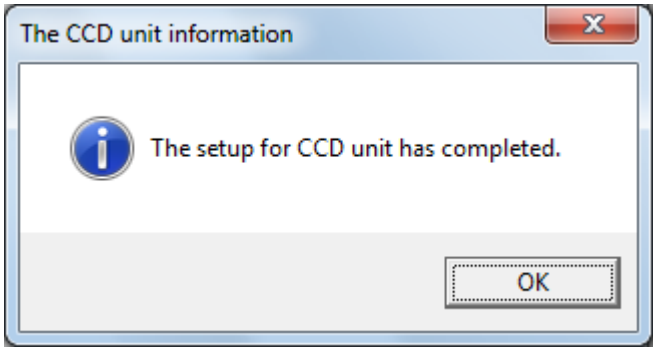
3) Confirm the part numbers for the replaced CCD units

Clicking [OK] in the dialog box (in the previous step) will output the following confirmation message.
When the selected part numbers are correct, click [Yes]. Then, the CCD unit information will be configured in your scanner. When the numbers are incorrect, click [No] and select the part numbers again.



4) Complete

Clicking [OK] in the dialog box (in the previous step) will output the following message box, and this procedure completes.



Important:

- When replacing the CCD unit regardless of whether the CCD unit is old or new revision, it is necessary to configure the CCD unit information in the scanner by the tool.
- When the EEPROM cannot be saved or restored while replacing the operation panel of the scanner that comes with the new revision CCD, it is necessary to configure the CCD unit information in the scanner by the tool.

B) The procedure to update the firmware of fi-6750S/LA

1. Scope

This document describes the procedure to update the firmware of fi-6750S/LA.

Following table shows the information for this rework.

Table A:

Model	**fi-6750S/LA**	
Firmware	**SDC, MDC**	
Data files	**0015602K.mot** **0015604J.mot**	
New Scanner revision	**PA03576-B301/ B302 / B305 / B307**	**B0**
	PA03576-B321	
New Firmware revision	**SDC : 0K00** **MDC : 0J00**	

2. Firmware data for this rework

Please download data file containing the updated version firmware and its updater from the following web site.
http://imaging-ss.trad.pfu.co.jp/downloads/firmwares/fi-6750S.html
The updater works with the following OS.

Windows® 2000
Windows® XP
Windows® Vista

* If update is required in Windows® 2000, Windows® XP or Windows® Vista, the user is required to login with the ID which has the administrator authority.

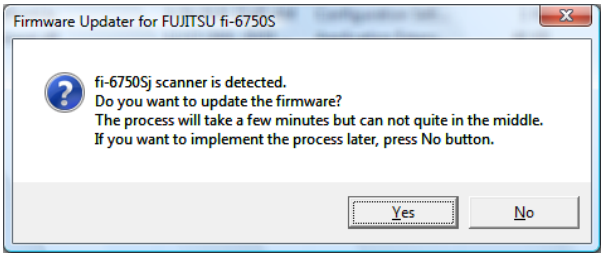
3. Confirmation before the firmware update

Before updating firmware, make sure that the scanner driver is installed correctly in your PC. Details about scanner driver installation are written in the User's Guide attached to Scanner.

4. Update procedure

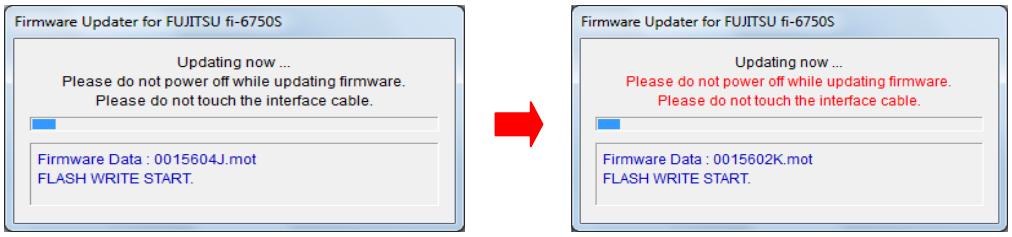
Please update the firmware by following the procedure below.
Note that the following shows displays for fi-6750S/LA.

1) Power on the scanner, then power on the PC.
2) Unzip the following file onto an arbitrary folder.
   "FisRomUp_For_Fi-6750_K_J.zip"
   Note: It should be unzipped onto the [C:] drive (or a folder within) in order to keep the file path at minimum.
3) Execute "FisRomUp.exe" in the following folder which has extracted previously:
   i.e. *C:\ Firmware Update for FUJITSU "Fi-6750_K_J\FisRomUp.exe"*
4) Confirmation window appears. Click "Yes" to start updating the firmware.
   Both two firmwares are updated at once.



5) The following screen appears while updating firmware.

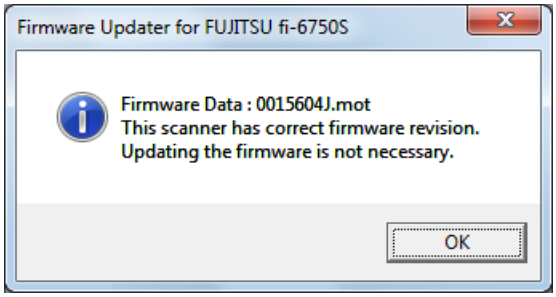
Caution: **Do not power off the scanner and PC during updating.**



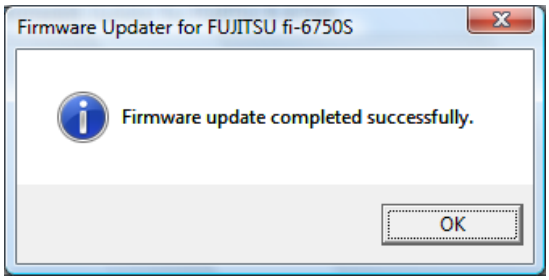
MDC Firmware

SDC Firmware

If the scanner already has the correct firmware revision, the following appears. Click “OK” to continue.



6) When firmware update is completed, the following appears. Click “OK” to terminate the update procedure.



5. Confirming the firmware revision in Maintenance mode #6

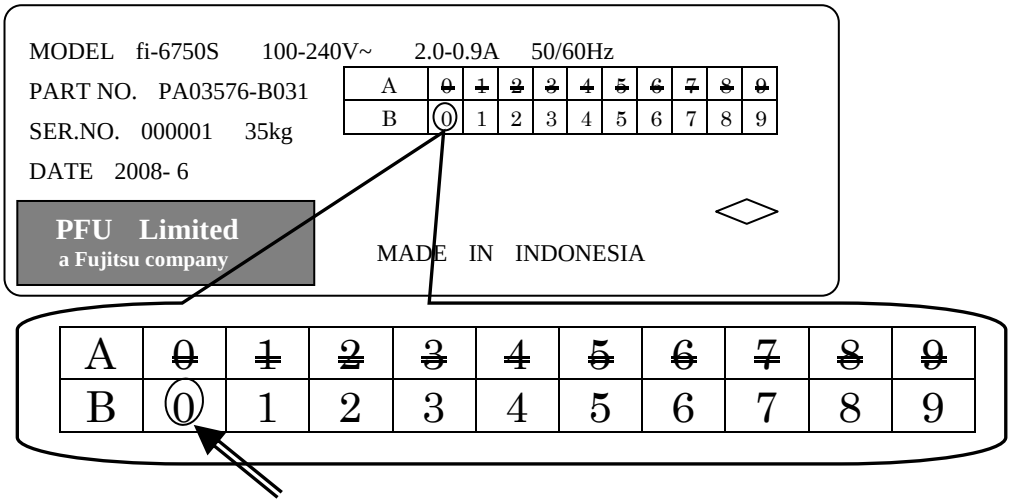
You can confirm the current firmware revision in the maintenance mode #6 or newer in the Maintenance manual.

Firmware version number SDC…… – 1100
MDC…… = 1000

6. Marking the firmware revision label

At the last, mark out the suitable revision number according to PART NO. on the scanner revision label attached to backside of the scanner by using a fine marker.

(PART NO.: PA03576- B031/ B032/ B035/ B037) Mark out **B0**

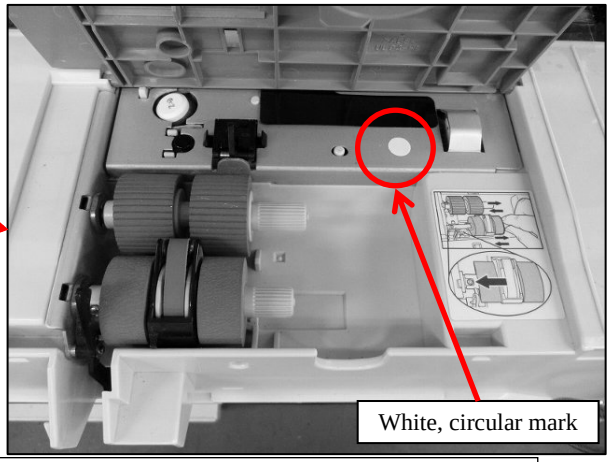


06

3.1 ADF FIX Unit

Description	Parts No.	Remarks
ADF FIX UNIT	(Old optical component installed part) **For fi-6770/6770A** PA03576-D812 (Old) PA03576-D972 (New) **For fi-6750S** PA03576-D834 (Old) PA03576-D992 (New)	The following parts are included: Optical unit ADF, Background unit F, Inverter, US sensor, US PCA, Sensor (for detecting hopper empty), Pick sensor, DF sensor, Pick motor, HK Ring ME, ADF junction PCA White level adjustment sheet and Ultrasonic sensor adjustment sheet are enclosed. After replacing this part, perform the sensor test, sub-scanning magnification adjustment, offset adjustment, white level adjustment and ultrasonic sensor adjustment, and reset the consumable counters.
	(New optical component installed part) **For fi-6770/6770A** PA03576-D988 **For fi-6750S** PA03576-D994	Note 1 The “New” maintenance parts are of higher dust-proofness. They are adopted on the scanner with version “A8” or later. When replacing the part on the scanner on which the new parts are installed (A8 or later), be sure to order the new part to replace. Note that old parts are compatible with the new parts. (Old → New: Compatible, New → Old: NOT compatible) Note 2 For details on handling the "Old Optical Component" and the "New Optical Component", refer to "*6" in the section "Chapter 3, Maintenance Parts", and prepare the correct part.

<Reference>
An identifying mark is attached as follows to devices installed with the "New optical component".
*There is no identifying mark on devices installed with the "Old optical component".

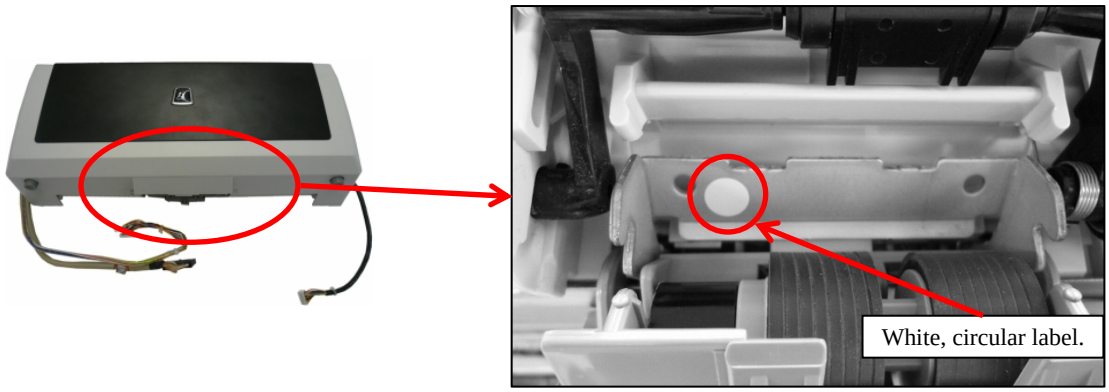


A white, circular label is attached to the metal plate that can be seen by opening the Pick Roller Cover.

3.2 ADF REV Unit

Description	Parts No.	Remarks
ADF REV UNIT	04 (Old optical component installed part) **For fi-6770/fi-6770A** PA03576-D813 (Old2) PA03576-D871 (Old1) PA03576-D971 (New)	The following parts are included: Optical unit ADF, Background unit B/BS, Inverter, US sensor, Sensor (for detecting pick arm position and background position), DF sensor, Guide S ASSY, BW motor, Feed motor, Belt ADF, TOP sensor, Sensor OP White level adjustment sheet and Ultrasonic sensor adjustment sheet are enclosed. After replacing this part, perform the sensor test, sub-scanning magnification adjustment, offset adjustment, white level adjustment and ultrasonic sensor adjustment, and reset the consumable counters.
	(Optical component not installed) **For fi-6750S** PA03576-D831 (Old2) PA03576-D891 (Old1) PA03576-D991 (New)	04 Note 1 The “Old1” and “New” maintenance part have a ball bearing for the shaft bearing at the Feed roller side. This part is applied to the scanner with version “A2” and later. When replacing the part on the scanner with version “A2” or later, be sure to replace it with the “Old1” or “New” part. The “Old” part is compatible with the “New” part as follows: Old2 → Old1, New: Compatible, New, Old1 → Old2: Not compatible
	(Old optical component installed part) **For fi-6770/6770A** PA03576-D987 (New)	Note 2 The “New” maintenance parts are of higher dust-proofness. They are adopted on the scanner with version “A8” or later. When replacing the part on the scanner on which the new parts are installed (A8 or later), be sure to order the new part to replace. Note that old parts are compatible with the new parts. (Old → New: Compatible, New → Old: NOT compatible) Note 3 For details on handling the "Old Optical Component" and the "New Optical Component", refer to "*6" in the section "Chapter 3, Maintenance Parts", and prepare the correct part.

<Reference>
An identifying mark is attached as follows to devices installed with the "New optical component".
*There is no identifying mark on devices installed with the "Old optical component".



A white, circular label is attached to the metal plate that can be seen by opening the Pick Roller Cover.

3.3 Background Unit F

Description	Parts No.	Remarks
Background unit F	PA03576-D801 (Old) PA03576-D974 (New)	Includes the lamp for front side scanning and the background for backside scanning. White level adjustment sheet is enclosed. After replacing this part, perform the offset adjustment and white level adjustment. Note 1 The "New" maintenance parts are of higher dust-proofness. They are adopted on the scanner with version "A8" or later. When replacing the part on the scanner on which the new parts are installed (A8 or later), be sure to order the new part to replace. Note that old parts are compatible with the new parts. (Old → New: Compatible, New → Old: NOT compatible)

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3.4 Background Unit B/BS

Description	Parts No.	Remarks
For fi-6770/fi-6770A Background Unit B For fi-6750S Background Unit BS	**For fi-6770、6770A** PA03576-D802 (Old) PA03576-D975 (New) **For fi-6750S** PA03576-D833 (Old) PA03576-D976 (New)	Includes the lamp for backside scanning and the background for front side scanning. White level adjustment sheet is enclosed. After replacing this part, perform the offset adjustment and white level adjustment. The lamp is not included in PA03576-D833, PA03576-D976 (for fi-6750S). Note 1 The "New" maintenance parts are of higher dust-proofness. They are adopted on the scanner with version "A8" or later. When replacing the part on the scanner on which the new parts are installed (A8 or later), be sure to order the new part to replace. Note that old parts are compatible with the new parts. (Old → New: Compatible, New → Old: NOT compatible)

Background Unit B
for fi-6770/fi-6770A
PA03576-D802

Background Unit BS
for fi-6750S
PA03576-D833

3.5 Inverter

Description	Parts No.	Remarks
Inverter	PA03576-D815	After replacing this part, perform the white level adjustment.

3.6 US Sensor

Description	Parts No.	Remarks
US sensor	PA03334-F902	After replacing this part, perform the ultrasonic sensor adjustment.

3.7 US PCA

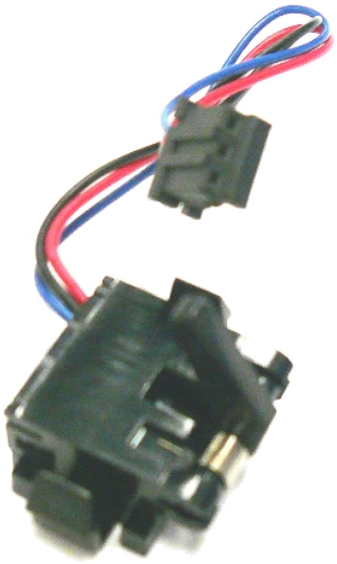
Description	Parts No.	Remarks
US PCA	PA03334-K906	After replacing this part, perform the ultrasonic sensor adjustment.

3.8 Sensor

Description	Parts No.	Remarks
Sensor	PA03338-D816	After replacing this part, perform the sensor test.

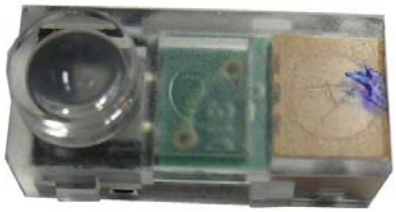
3.9 Pick Sensor

Description	Parts No.	Remarks
Pick sensor	PA03338-D845	After replacing this part, perform the sensor test.



3.10 DF Sensor

Description	Parts No.	Remarks
DF sensor	PA03338-D817	2 pieces per set



3.11 Guide S ASSY

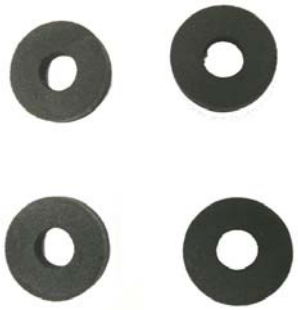
Description	Parts No.	Remarks
Guide S ASSY	PA03576-D815	

3.12 Pick Motor

Description	Parts No.	Remarks
Pick motor	PA03576-D803	After replacing this part, perform the sub-scanning magnification adjustment.

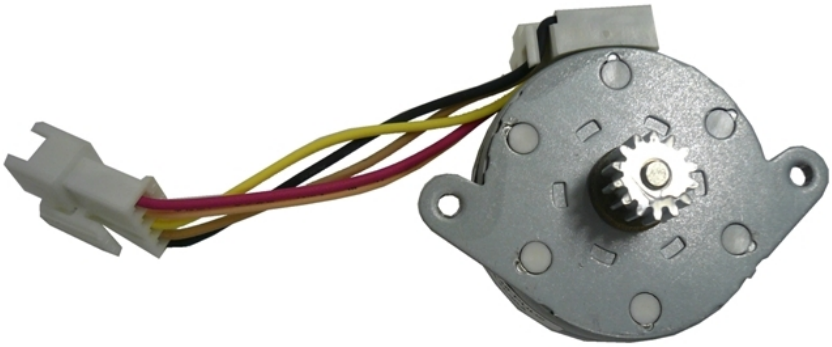
3.13 HK Ring ME

Description	Parts No.	Remarks
HK Ring ME	PA03338-D941	4 pieces per set After replacing this part, perform the sub-scanning magnification adjustment and offset adjustment.



3.14 BW Motor

Description	Parts No.	Remarks
BW motor	PA03338-D822	After replacing this part, perform the sensor test.

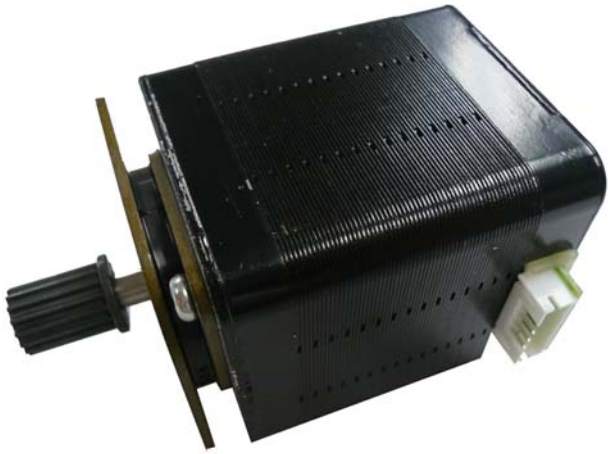


3.15 ADF Junction PCA

Description	Parts No.	Remarks
ADF junction PCA	PA03338-D823	After replacing this part, perform the offset adjustment, white level adjustment and sensor test.

3.16 Feed Motor

Description	Parts No.	Remarks
Feed motor	PA03576-D804	After replacing this part, perform the sub-scanning magnification adjustment and offset adjustment.

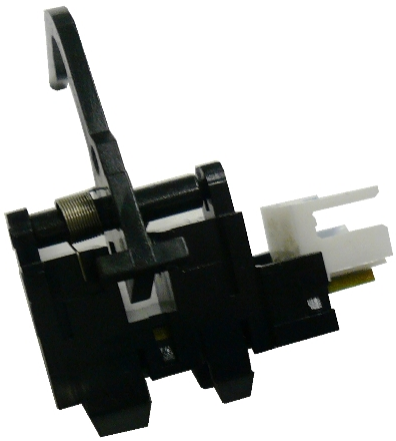


3.17 Belt ADF

Description	Parts No.	Remarks
Belt ADF	PA03338-D915	After replacing this part, perform the sub-scanning magnification adjustment and offset adjustment.

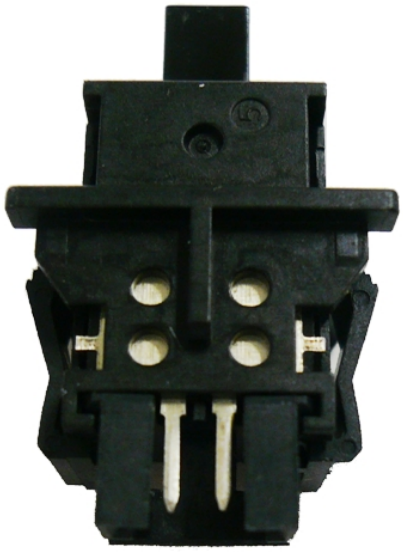
3.18 TOP Sensor

Description	Parts No.	Remarks
TOP sensor	PA03338-D826	After replacing this part, perform the sensor test and offset adjustment.



3.19 Sensor OP

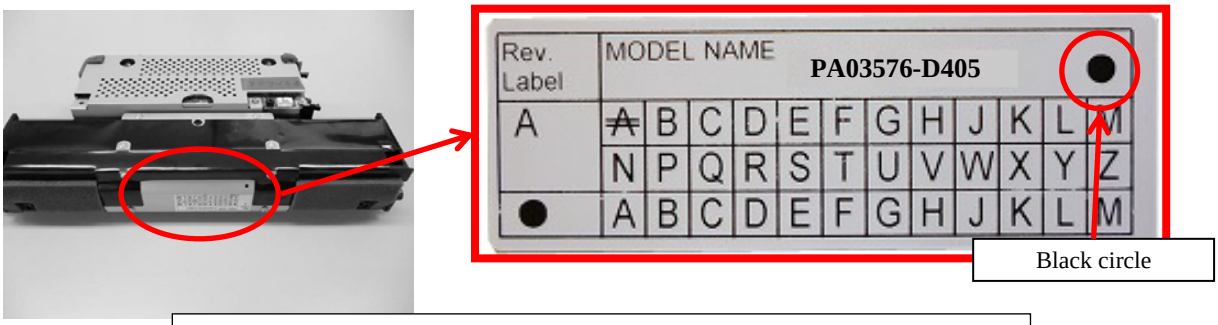
Description	Parts No.	Remarks
Sensor OP	PA03338-D917	After replacing this part, perform the sensor test.



3.20 Optical Unit ADF

Description	Parts No.	Remarks
Optical unit ADF	(Old optical component part) PA03576-D805	The following parts are enclosed. - White level adjustment is enclosed. - OPT SPACER B (Use it when the one for backside scanning is lost) After replacing this part, perform the offset adjustment and white level adjustment. * Note 1 For details on handling the "Old Optical Component" and the "New Optical Component", refer to "*6" in the section "Chapter 3, Maintenance Parts", and prepare the correct part.
	(New optical component part) PA03576-D935	

<Reference>
An identifying mark is attached as follows to devices installed with the "New optical component".
*There is no identifying mark on devices installed with the "Old optical component".



A black circle is printed on the right side of the Rev. Label.

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3.21 FB Unit

Description	Parts No.	Remarks
FB Unit	**For fi-6770** PA03576-D806 PA03576-D882 *1 **For fi-6770A** PA03576-D817 **For fi-6750S** PA03576-D835 PA03576-D898 *1	The following parts are included: FB junction PCA, Sensor OP (for detecting document cover open), Sensor (for detecting home position), CCD cable FB, FB motor The following parts are NOT included: Panel unit, Optical unit FB, bracket of PCA unit White level adjustment sheet is enclosed. After replacing this part, perform the sensor test, sub-scanning magnification, offset adjustment and white level adjustment. *1 Note that maintenance parts differ from previous devices because the model number has changed as functions such as automatic power off have been added.

	fi-6770		fi-6750S		fi-6770A
	PA03576-B00X	PA03576-B10X	PA03576-B30X	PA03576-B40X	PA03576-B03X
FB Unit	PA03576-D806	PA03576-D882	PA03576-D835	PA03576-D898	PA03576-D817

3.22 FB Motor

Description	Parts No.	Remarks
FB motor	PA03576-D863	Includes Belt. After replacing this part, perform the sub-scanning magnification adjustment and offset adjustment.

3.23 CCD Cable FB

Description	Parts No.	Remarks
CCD cable FB	PA03338-D924	

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3.24 FB Junction PCA

Description	Parts No.	Remarks
FB Junction PCA	**For fi-6770 / fi-6750S** PA03338-D836 PA03576-D872 *1 **For fi-6770A** PA03338-D836	*1 Note that maintenance parts differ from previous devices because the model number has changed as functions such as automatic power off have been added.

	fi-6770		fi-6750S		fi-6770A
	PA03576-B00X	PA03576-B10X	PA03576-B30X	PA03576-B40X	PA03576-B03X
FB Junction PCA	PA03338-D836	PA03576-D872	PA03338-D836	PA03576-D872	PA03338-D836

PA03338-D836

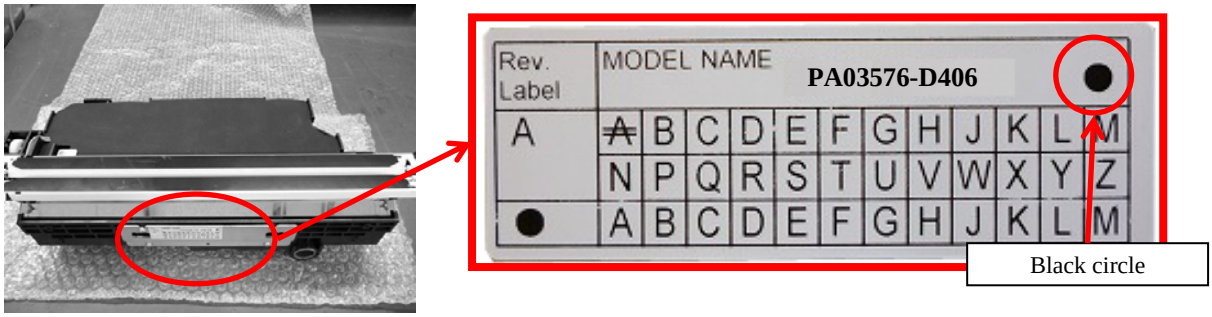
PA03576-D872

Difference between the models
- The PA03576-D872 has an arrow on the FB Junction PCA.

3.25 Optical unit FB

Description	Parts No.	Remarks
Optical unit FB	(Old optical component part) PA03338-D833	Includes Lamp FB and Inverter. White level adjustment sheet is enclosed. After replacing this part, perform the offset adjustment and white level adjustment. * Note 1 For details on handling the "Old Optical Component" and the "New Optical Component", refer to "*6" in the section "Chapter 3, Maintenance Parts", and prepare the correct part.
	(New optical component part) PA03576-D936	

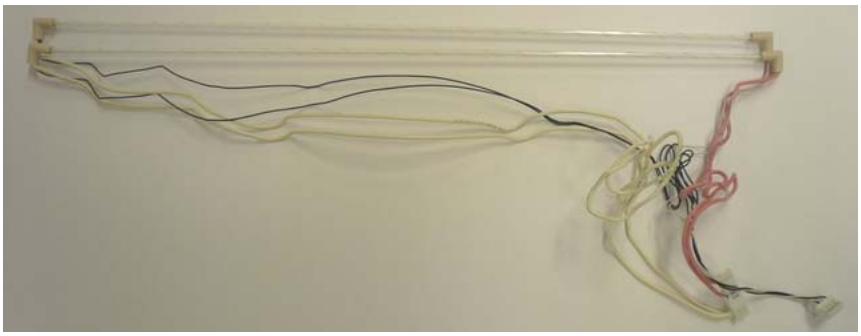
<Reference>
An identifying mark is attached as follows to devices installed with the "New optical component".
*There is no identifying mark on devices installed with the "Old optical component".



A black circle is printed on the right side of the Rev. Label.

3.26 Lamp FB

Description	Parts No.	Remarks
Lamp FB	PA03338-D925	After replacing this part, perform the white level adjustment.



3.27 Document Cover

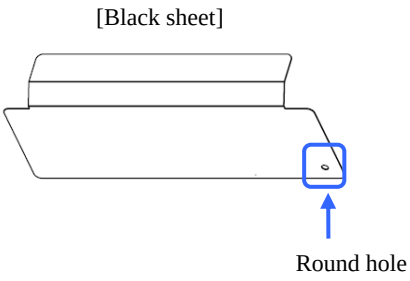
Description	Parts No.	Remarks
Document Cover	PA03576-D814	Includes Cushion. Two black sheets required for assembly are enclosed.

3.28 Cushion

Description	Parts No.	Remarks
Cushion	PA03576-D816	

3.29 Hinge Unit

Description	Parts No.	Remarks
Hinge Unit	PA03576-D862	A black sheet required for assembly is enclosed. There is a round hole on the black sheet.



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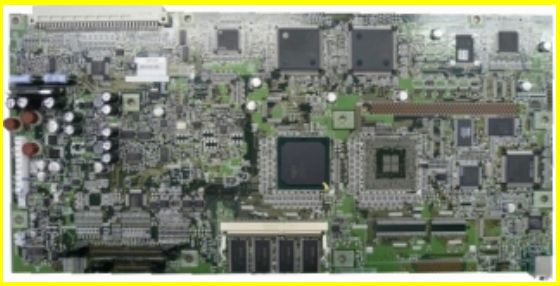
3.30 Control PCA

Description	Parts No.	Remarks
Control PCA	**For fi-6770** PA03576-D807 PA03576-D875 *1 **For fi-6770A** PA03576-D807 **For fi-6750S** PA03576-D832 PA03576-D888	Fuses are replaceable. Use the specified Fuses only. Verwenden Sie nur die angegebenen Sicherungen. 05 *1 Note that maintenance parts differ from previous devices because the model number has changed as functions such as automatic power off have been added.

Control PCA
for fi-6770/fi-6770A



Control PCA
for fi-6750S/6750LA

	fi-6770		fi-6750S		fi-6770A
	PA03576-B00X	PA03576-B10X	PA03576-B30X	PA03576-B40X	PA03576-B03X
Control PCA	PA03576-D807	PA03576-D875	PA03576-D832	PA03576-D888	PA03576-D807

3.31 (Reserved)

3.32 Fuse 2

Description	Parts No.	Remarks
FUSE 2	PA03576-D842	Rated current: 2.5A "F7, F8, F9, F11" Nennstrom: 2,5 A "F7, F8, F9, F11" 05

3.33 Fuse 3

Description	Parts No.	Remarks
FUSE 3	PA03576-D843	Rated current: 4.0A "F5" Nennstrom: 4,0 A "F5" 05

3.34 (Reserved)

Description	Parts No.	Remarks

3.35 (Reserved)

Description	Parts No.	Remarks

3.36 Power Supply

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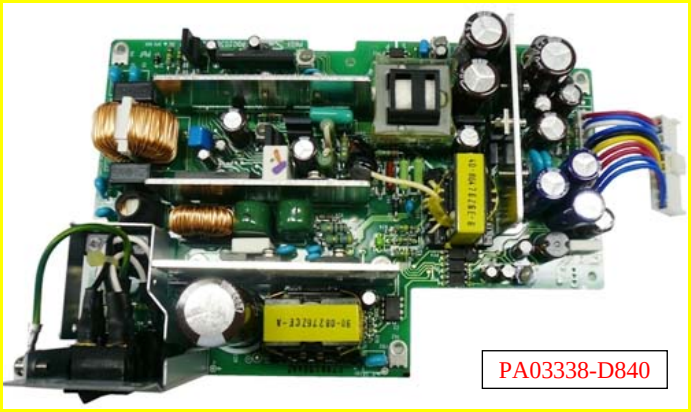
Description	Parts No.	Remarks
Power Supply	PA03338-D840 PA03576-D873 *1	*1 Note that maintenance parts differ from previous devices because the model number has changed as functions such as automatic power off have been added.



PA03338-D840

PA03576-D873

	fi-6770		fi-6750S		fi-6770A
	PA03576-B00X	PA03576-B10X	PA03576-B30X	PA03576-B40X	PA03576-B03X
Power Supply	PA03338-D840 PA03576-D873	PA03576-D873	PA03338-D840 PA03576-D873	PA03576-D873	PA03338-D840 PA03576-D873

3.37 Stacker ASSY

Description	Parts No.	Remarks
Stacker ASSY	PA03576-D808	

3.38 Chute ASSY

Description	Parts No.	Remarks
Chute ASSY	PA03576-D809	Includes Chute roller.

3.39 Chute Roller

Description	Parts No.	Remarks
Chute roller	PA03338-D933	

3.40 ADF-Cable

Description	Parts No.	Remarks
ADF-cable	PA03576-D846	

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3.41 Panel Unit

Description	Parts No.	Remarks
Panel unit	**For fi-6770/6750S** PA03576-D810 PA03576-D876 *1 **For fi-6770A** PA03576-D810	Includes Panel PCA. EEPROM data must be saved before this unit is replaced and restored after replacement. * Refer to Section 6.2 for how to save the EEPROM data. * Refer to Section 6.1.8 for how to restore the EEPROM data. *1 Note that maintenance parts differ from previous devices because the model number changed by adding functions such as automatic power off.

PA03576-D810

PA03576-D876

Difference between the models
- The PA03576-D876 has an arrow on the panel PCA.

	fi-6770		fi-6750S		fi-6770A
	PA03576-B00X	PA03576-B10X	PA03576-B30X	PA03576-B40X	PA03576-B03X
Panel unit	PA03576-D810	PA03576-D876	PA03576-D810	PA03576-D876	PA03576-D810

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3.42 Panel PCA

Description	Parts No.	Remarks
Panel PCA	**For fi-6770/6750S** PA03576-D811 PA03576-D877 *1 **For fi-6770A** PA03576-D811	EEPROM data must be saved before this unit is replaced and restored after replacement. * Refer to Section 6.2 for how to save the EEPROM data. * Refer to Section 6.1.8 for how to restore the EEPROM data. *1 Note that maintenance parts differ from previous devices because the model number has changed as functions such as automatic power off have been added.

Panel PCA (front view)

Panel PCA (rear view)
(PA03576-D811)

Panel PCA (rear view)
(PA03576-D877)

Difference between the models
- The PA03576-D877 has an arrow on the panel PCA.

	fi-6770		fi-6750S		fi-6770A
	PA03576-B00X	PA03576-B10X	PA03576-B30X	PA03576-B40X	PA03576-B03X
Panel PCA	PA03576-D811	PA03576-D877	PA03576-D811	PA03576-D877	PA03576-D811

3.43 Fan ASSY

Description	Parts No.	Remarks
Fan ASSY	PA03338-D847	

3.44 CGA Board

Description	Parts No.	Remarks
CGA Board	**For fi-6770 only** PA03576-K801	Exclusive part for fi-6770A. DIMM is NOT installed.

3.45 DIMM

Description	Parts No.	Remarks
DIMM	PA03576-D839	The DIMM installed on the Control PCA and that on the CGA Board are an identical part.

Model name	The number of DIMM's on Control PCA	The number of DIMM's on CGA Board	Total	Remarks
fi-6770	2	Not in use	2	CGA board is not installed on fi-6670 as standard, but fi-677CGA can be installed as an option.
fi-6770A	2	1	3	
fi-6750S	1	Not in use	1	CGA board is not installed on fi-6750S as standard, and it cannot optionally be installed as well.

3.46 ADF Unit

Description	Parts No.	Remarks
ADF Unit	04 **For fi-6770/fi-6770A** PA03576-D800 (Old2) PA03576-D870 (Old1) PA03576-D970 (New) **For fi-6750S** PA03576-D830 (Old2) PA03576-D890 (Old1) PA03576-D990 (New)	ADF FIX UNIT and ADF REV UNIT are included. White level adjustment sheet and Ultrasonic sensor adjustment sheet are enclosed. 04 Note 1 The "Old1" and "New" maintenance part have a ball bearing for the shaft bearing at the Feed roller side. This part is applied to the scanner with version "A2" and later. When replacing the part on the scanner with version "A2" or later, be sure to replace it with the "Old1" or "New" part. The "Old" part is compatible with the "New" part as follows: Old2 → Old1, New: Compatible, New, Old1 → Old2: Not compatible Note 2 The "New" maintenance parts are of higher dust-proofness. They are adopted on the scanner with version "A8" or later. When replacing the part on the scanner on which the new parts are installed (A8 or later), be sure to order the new part to replace. Note that old parts are compatible with the new parts. (Old → New: Compatible, New → Old: NOT compatible)

Chapter 4 Troubleshooting

This section describes the self-diagnostic functions of the scanner, temporary errors and detection algorithms, and how to troubleshoot them.

4.1 Operator panel display sequence at power-on

The following display is shown during initial processing (self-diagnostics).

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

When the initial processing starts, the following is displayed.

Function No. Display	Power LED	Check LED	Description
	ON	OFF	Displays “P” without blinking. Indicates the scanner is currently in initial processing (self-diagnostics).

When the intensity of the lamp becomes near the reference value, the following is displayed.

Function No. Display	Power LED	Check LED	Description
	ON	OFF	Displays “0” without blinking. Indicates the light intensity of the lamp almost reaches the reference value.

When the initial processing terminates properly, the following is displayed.

Function No. Display	Power LED	Check LED	Description
	ON	OFF	Displays default Function No. without blinking. Indicates the 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”.
Any error at initial processing (self-diagnosis) appears on the Function Number Display.

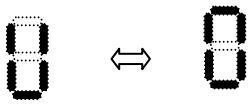
4.2 Temporary Errors and Alarm Detection Algorithm

4.2.1 Temporary Errors

Temporary errors occur during scanning operation and can be remedied by the operator. They are displayed on the PC screen through the driver or on the operator panel.
The display and detection algorithm of the temporary errors are described below.

Temporary error scanner display

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

Function No. Display	Power LED	Check LED	Description (supplement)
	ON	ON (orange)	Displays “U” or “J” and an error number (0 ~ 9) alternately. Example) When error “U0” occurs, the display sequence is: “U” ➔ “SP” ➔ “0” ➔ “SP” …… * “SP” signifies “Light off: Displays nothing.” The interval of the display changes is about 0.5 second.

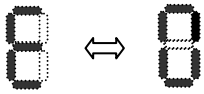
When Scan/Stop or Send to button is pressed while an error is displayed, the Function Number display returns to the “Ready” status.

4.2.2 Alarms

Alarms require maintenance 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).

Alarm displayed on the operator panel

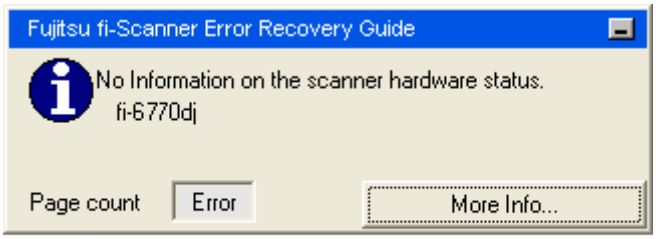
When an alarm occurs, the scanner displays the following on the operator panel:

Function No. Display	Power LED	Check LED	Description (supplement)
	ON	ON (orange)	Displays “A,” “C,” “E,” “F,” “H,” or “L” and an error number (0 ~ 9) alternately. Example) When error “E0” occurs, the display sequence is: “E” ➔ “SP” ➔ “0” ➔ “SP” …… * “SP” signifies “Light off: Displays nothing.” The interval of the display changes is about 0.5 second.

When Scan/Stop or Send to button is pressed while an error is displayed, the Function Number display returns to the “Ready” status.

4.2.3 Error Recovery Guide

If the application “Error Recovery Guide” (step (11) of Section 2.2.2) is installed in the PC, the corresponding error name and error code are displayed on the PC screen when any error or scanner alarm comes up.



4.3 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 connected to another computer system.)

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

Scanner section

[Category: Device]

Error description	Related section	Error Recovery Guide message
Scanner does not turn ON. (No display on the operator panel)	4.3.1	---
Scanning does not start.	4.3.2	---
Scanned image is distorted.	4.3.3	---

[Category: Image]

Error description	Related section	Error Recovery Guide message
Resolution or gradation of scanned image is unsatisfactory.	4.3.4	---
Too much jitter on image scanned on FB	4.3.5	---
Image scanned on FB is misaligned	4.3.6	---
Magnification of image scanned on FB is incorrect	4.3.7	---
Too much jitter on image scanned on ADF	4.3.8	---
Image scanned on ADF is misaligned	4.3.9	---
Magnification of image scanned on ADF is incorrect	4.3.10	---
Vertical streaks appear in scanned image	4.3.11	---
Calibrating white level of scanned image	4.3.12	---

[Category: Temporary error]

Function No.Display Check LED	Error description	Related section	Error Recovery Guide message
None ---	"No paper on the ADF paper chute"	4.3.13	No Document in Hopper [038003 20]
J1 ON	Paper jam	4.3.14	Top sensor jam [038001 31] Pick error [038001 50] Eject jam [038001 36] Pick sensor jam [0380013A]
J9 ON	Paper jam		Dirty roller [038001 39]
J2 ON	Multi feed	4.3.15	Multifeed Detected (Length) [038007 56] Multifeed Detected (US sensor) [038007 58]
U4 ON	ADF cover open	4.3.16	Open Cover [038002 , 40]

[Category: Alarm]

Function No.Display Check LED	Error description	Related section	Error Recovery Guide message
U0 ON	Shipping lock error	4.3.17	Shipping Lock [048005 10]
C0 ON	Memory (LSI) alarm	4.3.30	LSI1(VDCC3)Memory Read-Write error [044400 , E5] LSI2(Pisces) Memory Read-Write error [044400 , E6]
C0 ON	LSI alarm		LSI1(VDCC3) [044400 , E9] LSI2(Pisces) [044400 , EA]

Scanner section

[Category: Alarm] (Cont'd)

Function No.Display Check LED	Error description	Related section	Error Recovery Guide message
C8 ON	Internal communication alarm	4.3.31	MDC command timeout1 [044400 , F0]
E0 ON	Feed mechanical alarm on FB	4.3.17	FB Motor can't move [048005 87]
E1 ON	Optical alarm (FB)	4.3.18	AGC Control Failure(FB) [048006 7E]
E2 ON	Optical alarm (ADF front)	4.3.19	AGC Control Failure(ADF front) [048006 , 74]
E3 ON	Optical alarm (ADF back)		AGC Control Failure(ADF back) [048006 , 75]
E6 ON	Operator panel alarm	4.3.22	---
E7 ON	EEPROM alarm	4.3.23	EEPROM Alarm [044400 D2]
E8	SCSI fuse blown	4.3.24	---
E9 ON	Image memory alarm	4.3.25	Memory malfunction 044400 F5 044400 F6 044400 F7 044400 F8
F	Flash RAM alarm	4.3.32	---
F2 ON	Drive system (pick arm) alarm	4.3.20	Pick arm overrun [048005 , C4]
F4 ON	Drive system (Background switchover) alarm	4.3.26	Front-side Background overrun [048005 , C2]
F6 ON	Fan alarm	4.3.27	FAN Stop [048007 , EC]
H1 ON	Motor fuse blown	4.3.20	Motor fuse alarm [048001 , 81]
H5 ON	TPS fuse blown	4.3.35	---
H7 ON	Lamp fuse blown	4.3.21	Lamp fuse alarm [048003 , 84]
L6 ON	Ultrasonic sensor alarm	4.3.28	Sensor malfunction [044400 02]
L9 ON	OMR sensor alarm	4.3.29	OMR sensor malfunction [044400 03]
---	Optical alarm	4.3.16	Dirty optical system(front) [048006 , 72] Dirty optical system(back) [048006 , 73]
---	IPC (option board) alarm	4.3.26	IPC timeout [048008 , ED]
---	Illegal command	4.3.33	Invalid command [052000 FA] Invalid CDB field [052400 FA] Unsupported logical unit (LUN) [052500 FA] Invalid field parameter list [052600 FA] Command sequence error [052C00 FA] Wrong windows combination [052C02 FA]
---	Interface alarm	4.3.34	Message error [0B4300 FC] Select/Reselect Failure [0B4500 FC] SCSI parity error [0B4700 FC] Initiator Detected Error Message Received [0B4800 FC] Overlapped Command Attempted [0B4E00 FC] Image transfer error [0B8001 FC]

NOTICE

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

4.3.1 Scanner Does not Turn ON (No display on the Operator Panel)

Item No.	Check items	How/where to check
1	Is the AC cable connected correctly? Does the same symptom occur after turning OFF and ON the scanner?	Press the "O" area of power switch to turn the scanner OFF, and press the "I" area to turn it ON.
2	Connect the AC cable to a different wall outlet.	
3	Replace AC cable and see if the error is resolved.	---
4	Replace Panel PCA and see if the error is resolved.	Refer to Section 5.13.1.
5	Replace Power supply and see if the error is resolved.	Refer to Section 5.8.2.
6	Replace Control PCA and see if the error is resolved.	Refer to Section 5.8.4.

4.3.2 Scanning Does not Start

Item No.	Check items	How/where to check
1	Does the same symptom appear after turning OFF and ON the scanner?	Press the "O" area of power switch to turn the scanner OFF, and press the "I" area to turn it ON.
2	Check the items listed in the right column.	・ Is the AC cable connected properly? ・ Is the interface cable (SCSI or USB) connected properly? ・ Is the SCSI ID correctly set? ・ Is there documents loaded on the Chute unit? ・ Is the ADF cover completely closed? ・ If any temporary error or alarm is indicated, follow the corresponding troubleshooting.

4.3.3 Scanned Image is Distorted

Due to loose connectors, cut wire in cables, or defective parts, scanned images may have consistent or random patterns of distortion on them.

Item No.	Check items	How/where to check
1	Check the items listed in the right column.	・ Is the interface cable (SCSI or USB) connected properly? ・ If any temporary error or alarm is indicated, follow the corresponding troubleshooting.
2	Are the cables between the Control PCA and the Optical unit damaged? Or are the connectors connected properly?	ADF front scanning: Section 5.12.2 ADF back scanning: Section 5.11.2 FB scanning: Section 5.13.5
3	Replace the Optical unit and see if the error is resolved.	ADF front scanning: Section 5.12.2 ADF back scanning: Section 5.11.2 FB scanning: Section 5.13.5
4	Replace the Control PCA and see if the error is resolved.	Refer to Section 5.8.4.

4.3.4 Resolution or Gradation of Scanned Image is Unsatisfactory

Item No.	Check items	How/where to check
1	Check the items listed in the right column.	・ Does the document satisfy the paper specifications described in the section 1.1.6? ・ Are the scan settings (resolution, density) correctly specified in the application software used for the document being scanned? ・ Is the interface cable (SCSI or USB) connected correctly? ・ If any temporary error or alarm is indicated, follow the corresponding troubleshooting.
2	Clean the reading section (glass) and see if the error is resolved.	Refer to Section 7.2.
3	Clean the Feed rollers and Plastic rollers and see if the error is resolved.	Refer to Section 7.2.
4	Is the Optical unit or lamp dirty? Are the cables damaged? Are the connectors connected properly?	ADF front scanning: Section 5.3.1 ADF back scanning: Section 5.3.1 FB scanning: Section 5.13.5
5	Replace the Optical unit and see if the error is resolved.	ADF front scanning: Section 5.12.2 ADF back scanning: Section 5.11.2 FB scanning: Section 5.13.5
6	Replace the Background unit and see if the error is resolved.	ADF back scanning: Replace Background unit F by referring to Section 5.12.5. ADF front scanning: Replace Background unit B/BS by referring to Section 5.11.8.
7	Replace the Control PCA and see if the error is resolved.	Refer to Section 5.8.4.

4.3.5 Too Much Jitter on Image Scanned on FB

The following shows a sample of scanned image when “Jitter” error occurs. This error occurs when the Optical unit FB does not move smoothly.

Scanned image with jitter 

Normal scanned image 

Item No.	Check items	How/where to check
1	Check the items listed in the right column.	・ Is the scanner bumped during the scan operation? ・ Is the scanner on a level surface?
2	Is there a foreign object preventing the Optical unit FB from moving?	Remove FB cover by referring to steps (1) ~ (7) in Section 5.13.2 and remove objects.
3	Is the Optical unit FB installed correctly?	Refer to Section 5.13.5
4	Is the FB belt installed correctly?	Refer to Sections 5.13.5 and 5.13.9.
5	Replace the FB motor and see if the error is resolved.	Refer to Section 5.13.9.
6	Replace the Optical unit FB and see if the error is resolved.	Refer to Section 5.13.5.
7	Replace the Control PCA and see if the error is resolved.	Refer to Section 5.8.4.

4.3.6 Image Scanned on FB is Misaligned

Item No.	Check items	How/where to check
1	Check the items listed in the right column.	• Is the paper placed in the FB at the proper location? • Are the scan settings (document size, etc.) correct in the application software used? • Is the scanner placed on a level surface?
2	Adjust the offset by Maintenance mode.	Refer to Section 6.1.4.
3	Is there a foreign object preventing the Optical unit FB from moving?	Remove the FB cover by referring to steps (1) ~ (7) in Section 5.13.2 and remove objects.
4	Is the Optical unit FB installed correctly?	Refer to Section 5.13.5.
5	Replace the Optical unit FB and see if the error is resolved.	Refer to Section 5.13.5.

4.3.7 Magnification Image Scanned on FB is Incorrect

Item No.	Check items	How/where to check
1	Check the items listed in the right column.	• Was the scanner bumped during the scan operation? • Are the scan settings (resolution, etc.) correct in the application software used? • Is the scanner on a level surface?
2	Does the abnormal magnification occur horizontally (main scanning direction) or vertically (sub-scanning direction)?	Sub-scanning direction: Go to item No.3 Main scanning direction Go to item No.7.
3	Adjust the magnification in Maintenance mode.	Refer to Section 6.1.3.
4	Is there a foreign object preventing the Optical unit FB from moving?	Remove the FB cover by referring to steps (1) ~ (7) in Section 5.13.2.
5	Is the belt installed correctly?	Refer to Sections 5.13.5 and 5.13.9.
6	Replace the FB motor and see if the error is resolved.	Refer to section 5.13.9. If the FB motor has no problem, go to item No. 8.
7	Is the Optical unit installed in the FB correctly?	Refer to Section 5.13.5.
8	Replace the Optical unit FB and see if the error is resolved.	Refer to Section 5.13.5.
9	Replace the Control PCA and see if the error is resolved.	Refer to Section 5.8.4.

4.3.8 Too Much Jitter on Image Scanned on ADF

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

Scanned image with jitter 

Normal scanned image 

Item No.	Check items	How/where to check
1	Does the document satisfy the paper specification?	Refer to Section 1.1.6 for the document specification.
2	Clean the Feed rollers and the Plastic rollers and see if the error is resolved.	Refer to Section 7.2.
3	Check the Pick roller and Brake roller counter. Is it about the time to replace them?	Check the consumable counter in the software operation panel or in the built-in Maintenance mode (Section 6.1.6). When the counter exceeds the values shown in Section 7.3.1, replace the Pick roller or the Brake roller.
4	Are the cables between the Control PCA and the Feed motor damaged? Are the connectors connected properly?	Refer to Sections 5.8.1, 5.8.4 and 5.11.4.
5	Is the Optical unit ADF installed correctly?	ADF front scanning: Section 5.12.2. ADF back scanning: Section 5.11.2.
6	Is the Belt ADF installed correctly?	Refer to Section 5.11.4.
7	Is the Belt ADF damaged?	Refer to Section 5.11.4.
8	Replace Feed motor and see if the error is resolved.	Refer to Section 5.11.4.
9	Replace the Optical unit ADF and see if the error is resolved.	ADF front scanning: Section 5.12.2. ADF back scanning: Section 5.11.2.
10	Replace the ADF unit and see if the error is resolved.	ADF Unit: Section 5.9.1. ADF Fix Unit: Section 5.9.2 ADF Rev Unit: Section 5.9.2

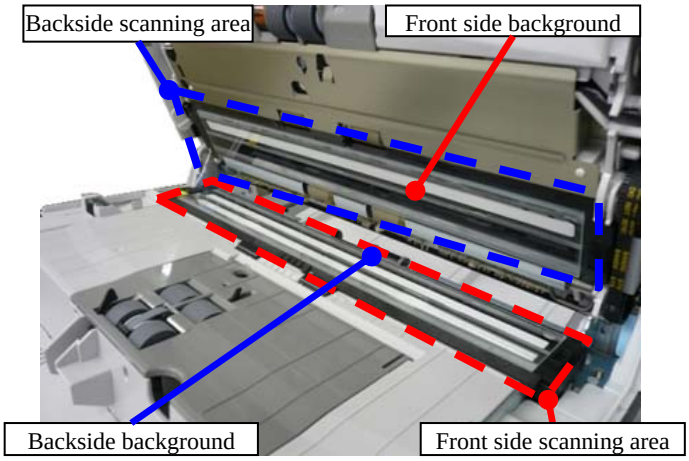
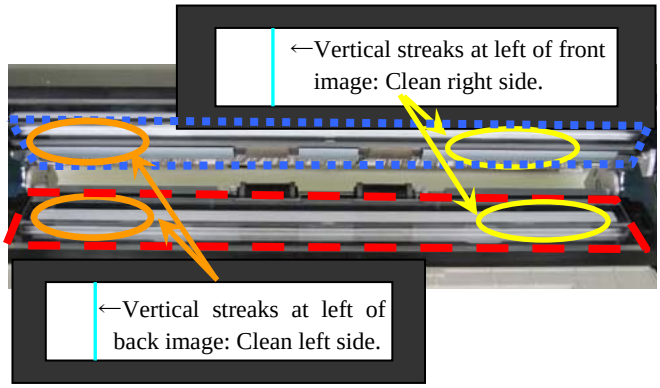
4.3.9 Image Scanned on ADF is Misaligned

Item No.	Check items	How/where to check
1	Check the items listed in the right column.	・ Does the document satisfy the paper specifications described in section 1.1.6? ・ Are the scan settings (document size, etc.) correct in the application software used?
2	Clean the Feed rollers and the Plastic rollers and see if the error is resolved.	Refer to Section 7.2.
3	Adjust the offset value in the software operation panel.	Refer to Section 6.1.4.
4	Check the Pick roller and Brake roller counter. Is it about the time to replace them?	Refer to Section 6.1.6.
5	Is the Optical unit installed correctly?	ADF front: Section 5.12.2. ADF back: Section 5.11.2.
6	Replace the defective Optical unit ADF and see if the error is resolved.	ADF front: Section 5.12.1. ADF back: Section 5.11.2.
7	Replace the ADF unit and see if the error is resolved.	ADF Unit: Section 5.9.1. ADF Fix Unit: Section 5.9.2. ADF Rev Unit: Section 5.9.2.

4.3.10 Magnification of Image Scanned on ADF is Incorrect

Item No.	Check items	How/where to check
1	Check the items listed in the right column.	Are the scan settings (resolution, etc.) correct in the application software used?
2	Does the abnormal magnification occur horizontally (main scanning direction) or vertically (sub-scanning direction)?	Sub-scanning direction: Go to item No.3 Main scanning direction Go to item No.8
3	Clean the Feed rollers and the Plastic rollers and see if the error is resolved.	Refer to Section 7.2.
4	Is there a foreign object in the roller section of the ADF, affecting the rotation of the Feed rollers?	Referring to Section 5.11.4, remove the ADF cover, and check the ADF belt.
5	Check the Pick roller and Brake roller counter. Is it about the time to replace them?	Refer to Section 6.1.3.
6	Is the Feed motor belt loose?	Refer to Section 5.11.4.
7	Replace the Feed motor and see if the error is resolved.	Refer to Section 5.11.4.
8	Is the Optical unit ADF installed correctly?	ADF front scanning: Section 5.12.2 ADF back scanning: Section 5.11.2
9	Replace the defective Optical unit ADF and see if the error is resolved.	
10	Replace the ADF unit and see if the error is resolved.	ADF Unit: Section 5.9.1 ADF Fix Unit: Section 5.9.2 ADF Rev Unit: Section 5.9.2

4.3.11 Vertical Streaks Appear in Scanned Image

Item No.	Check items	How/where to check
1	Check the items listed in the right column.	- Is the interface cable connected properly? - Are the scan settings correct in the application software used?
2	When vertical streaks appear on the front side image, clean the scanning area of the front side and the front side background unit (photo on the right). When vertical streaks appear on the backside image, clean the scanning area of the backside and the backside background unit (photo on the right). When vertical streaks appear on the image scanned on the Flatbed, clean the glass of the document bed.	Cleaning ADF: Section 7.2.1 Cleaning FB: Section 7.2.2  **Front side**: Vertical streaks and cleaning position are **left-right reversal**. **Backside**: Vertical streaks and cleaning position are the **same side**. 
3	Inside of the glass at the scanning area or white reference may be dirty. Replace the Background unit.	Background unit F: Section 5.12.5 Background unit B/BS: Section 5.11.8
4	Is the Optical unit dirty? Are the cables damaged? Are the connectors connected properly?	Cleaning: Section 7.2 ADF front: Section 5.3.1 ADF back: Section 5.3.1 FB: Section 5.13.5
5	Replace the Optical unit and see if the error is resolved.	ADF front: Section 5.12.2 ADF back: Section 5.11.2 FB: Section 5.13.5
6	Replace the Control PCA and see if the error is resolved.	Refer to Section 5.8.4.

4.3.12 Calibrating White Level of Scanned Image

Item No.	Check items	How/where to check
1	Check the items listed in the right column.	・ Are the scan settings (density, number of colors) correct for the application software used? ・ Is the sheet guide (White part) in the ADF dirty?
2	Perform the white level adjustment in Maintenance mode.	Refer to Section 6.1.5.

4.3.13 "No Paper on the ADF Paper Chute"

Item No.	Check items	How/where to check
1	Does the same symptom occur after turning OFF and ON the scanner?	Press the "O" area of power switch to turn the scanner OFF, and press the "I" area to turn it ON.
2	Is there a slip of paper left near the Empty sensor?	Open the ADF and check inside visually.
3	Check the performance of the Empty sensor.	Enter Maintenance mode #1 (Section 6.1.2) to check the sensor operation. If the error still occurs, confirm that the cable is correctly connected then replace the sensor (Section 5.10.5).

4.3.14 J1, J9: Paper Jam

Item No.	Check items	How/where to check
1	Do the documents satisfy the paper specification?	Refer to Section 1.1.6 for the paper specifications.
2	Have the documents been prepared properly?	・ Align the edge of documents for stable paper feeding. ・ Remove documents with creases or dog-ear corners. ・ Scanning different widths documents may cause skew and result in paper jam.
	Clean the Pick roller, the Separation roller, the Brake roller and the Chute roller and see if the error is resolved.	Refer to Section 7.2.
3	Clean the Feed rollers and the Plastic rollers and see if the error is resolved.	Refer to Section 7.2.
4	Replace the Pick roller, the Brake roller and the Chute roller, and see if the error is resolved.	Check the consumable counter in the software operation panel or from the built-in Maintenance mode (Section 6.1.6). When the counter exceeds the values shown in Section 7.3.1, replace the Pick roller or the Brake roller.
	Check the performance of the Pick arm.	If it does not perform correctly, replace BW motor (pick arm side). Refer to Section 5.11.3.
5	Check the performance of TOP sensor.	Refer to section 6.1.2.
6	Is the Pick sensor malfunctioning?	Refer to section 6.1.2.

4.3.15 J2: Multi Feed

Item No.	Check items	How/where to check
1	Do the documents satisfy the paper specification?	Refer to section 1.1.6 for paper specification, paying attention to the following points: ・ Is multifeed error detected by paper length when scanning documents with different length? ・ Are there perforations in the center of the documents?
2	Are the document handled well?	Check whether the paper is handled as described in step (2) of Section 7.1.3.
3	Clean the ADF unit.	Refer to Section 7.2 for cleaning cycle and method. Clean the Pick roller, the Brake roller, the Ultra sonic sensor and the DF sensor with care.
4	Replace the Pick roller and the Brake roller and see if the error is resolved.	Check the consumable counter in the software operation panel or from the built-in Maintenance mode (Section 6.1). When the counter exceeds the values shown in section 7.3.1, replace the Pick roller or the Brake roller.
5	Check the performance of the Ultra sonic sensor and the DF sensor.	Enter Maintenance mode #8 (Section 6.1.9)and adjust the ultrasonic sensor. If the error still occurs, confirm that the cables are correctly connected then replace the corresponding sensor. (Sections 5.10.3 and 5.10.6).

4.3.16 U4: ADF Cover Open

Item No.	Check items	How/where to check
1	Does the same symptom occur after turning OFF and ON the scanner?	Press the “O” area of power switch to turn the scanner OFF, and press the “I” area to turn it 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.	Enter Maintenance mode #1 (Section 6.1.2) to check the sensor operation. If the error still occurs, confirm that the cable is correctly connected.

4.3.17 U0: Shipping Lock Error / E0: Feed Mechanical Alarm on FB

Item No.	Check items	How/where to check
1	Does the same symptom occur after turning OFF and ON the scanner?	Press the “O” area of power switch to turn the scanner OFF, and press the “I” area to turn it ON.
2	Does the same symptom occur after unlocking the Shipping lock?	Refer to step (2) of Section 2.2.2 for unlocking.
3	Is there abnormal noise from the 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.6 to check circuit.
4	Is there a foreign object in the FB area?	Check visually.
5	Is the belt installed correctly?	Refer to section 5.13.5.
6	Is the FB motor cable connected properly?	Be sure to connect it. If disconnected, connect it by referring to Section 5.13.9.
7	Check the performance of FB motor.	Replace it if not performing correctly by referring to Section 5.13.9.
8	Replace the Home position sensor and see if the error is resolved.	Refer to Section 5.13.4.
9	Replace the Control PCA and see if the error is resolved. (*) 03	Refer to Section 5.8.4.

03 * If the Fuse F5 mounted on the Control PCA is blown, the FB motor cannot rotate which generates “E0” error. The Fuse F5 is blown due to PCA/Sensors damage (short out). Before replacing the Control PCA, check if any of the following parts are damaged or metal pieces exist in those parts.

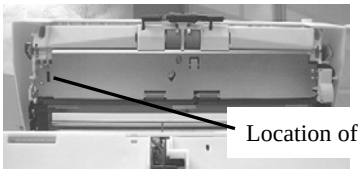
- ADF Junction PCA
- Optical Unit ADF
- Optical Unit FB
- FB Junction PCA
- Sensor (for home position detection)
- Sensor (for Pick arm position detection)
- ADF Cable

4.3.18 E1: Optical Alarm (FB)

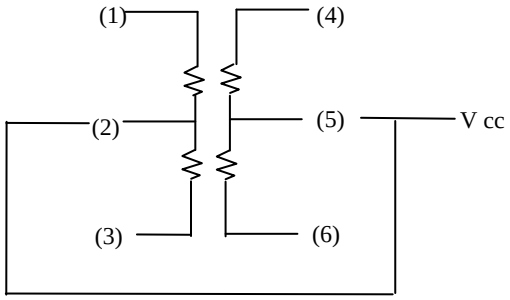
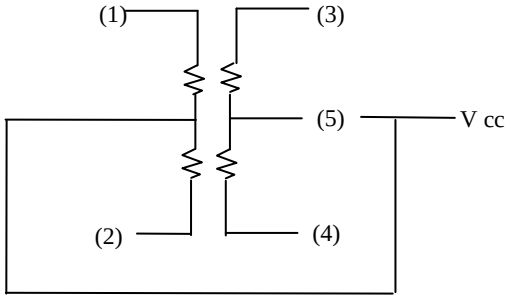
Item No.	Check items	How/where to check
1	Does the same symptom occur after turning OFF and ON the scanner?	Press the "O" area of power switch to turn the scanner OFF, and press the "I" area to turn it ON.
2	Is the White sheet guide (glass) in the FB cover dirty?	Remove the FB cover and clean the White sheet guide (glass). Refer to Section 7.2.2.
3	Is the Optical unit dirty? Are cables damaged? Are the connectors connected properly?	Refer to Sections 5.3.2 and 5.13.5.
4	Do the Lamps FB light up? Are cables damaged? Are the connectors connected properly?	Check if the lamps light up during the Paper feeding test (Section 6.1.2). If not, the error is caused by a defective Lamp FB (Section 5.13.8) or Inverter (Section 5.13.7).
5	Replace the Optical unit FB and see if the error is resolved.	Refer to section 5.13.5.

4.3.19 E2 or E3: Optical Alarm (ADF)

Ref) E2: ADF front side scanning optical alarm (lower optical unit ADF)
E3: ADF backside scanning optical alarm (upper optical unit ADF)

Item No.	Check items	How/where to check
1	Does the same symptom occur after turning OFF and ON the scanner?	Press the "O" area of power switch to turn the scanner OFF, and press the "I" area to turn it ON.
2	E2: Is the upper glass (white sheet guide) of the reading section dirty? E3: Is the lower glass (white sheet guide) of the reading section dirty?	Open the ADF, and clean the sheet guide (white part) and the glass (Section 7.2.1).
3	E2: Is the lower Optical unit ADF dirty? E3: Is the upper Optical unit ADF dirty? Are the cables damaged? Are the connectors connected properly?	E2 (ADF front): Section 5.12.2 E3 (ADF back): Section 5.11.2
4	E2: Is the lower lamp ON? E3: Is the upper lamp ON? Are the cables damaged? Are the connectors connected properly?	Disconnect the SCSI cable and turn the scanner ON. Open the ADF and press Sensor as shown below to see if the ADF lamps light. If not, the error is caused by defective lamps or inverter. If upper lamp does not light: Section 5.11.1 If lower lamp does not light: Section 5.12.3  Location of sensor OP
5	Replace the lower Optical unit ADF and see if the error is resolved. Replace the upper Optical unit ADF and see if the error is resolved.	E2 (ADF front): Section 5.12.2 E3 (ADF back): Section 5.11.2

4.3.20 F2: Drive System (Pick Arm) Alarm / H1: Motor Fuse Blown

Item No.	Check items	How/where to check
1	Does the same symptom occur after turning OFF and ON the scanner?	Press the "O" area of power switch to turn the scanner OFF, and press the "I" area to turn it ON.
2	Are there any foreign objects lying on the Control PCA?	Remove the Control PCA and inspect (Section 5.8.4).
3	Are the cables between the Control PCA and the motor damaged? Are the connectors connected properly?	Pick motor: Section 5.12.4 BW motor: Sections 5.11.3 or 5.11.5 Feed motor: Section 5.11.4
4	Is the coil resistance of the motor normal?	Remove the motor cable to check the coil resistance between the following pins of the motor. 1) Pick motor unit, Feed motor, FB motor Pick motor unit Feed motor / FB motor Resistance 2-1, 2-3: approx. 1.7 Ohms / approx.1.9 Ohms Resistance 5-4, 5-6: approx. 1.7 Ohms / approx.1.9 Ohms Resistance 1-3, 4-6: approx. 3.4 Ohms / approx.3.8 Ohms Other match: Infinite / Infinite  2) BW motor BW motor Resistance 1-2, 1-3, 1-4: approx.20 Ohms Resistance 2-3, 2-4, 3-4: approx.20 Ohms Resistance 5-1, 5-2, 5-3, 5-4: approx.40 Ohms Other match: Infinite  Replace the corresponding motor if the resistance is abnormal.
5	Replace the Control PCA and see if the error is resolved.	Refer to Section 5.8.4.

4.3.21 H7: Lamp Fuse Blown

Item No.	Check items	How/where to check
1	Does the same symptom occur after turning OFF and ON the scanner?	Press the "O" area of power switch to turn the scanner OFF, and press the "I" area to turn it ON.
2	Replace the Fuses (F7, F8, F9) and see if the error is resolved.	Refer to Section 5.8.5. F7: Front side lamp F8: Backside lamp F9: FB lamp
3	Are there any foreign objects lying on the Control PCA?	Remove the Control PCA and inspect (Section 5.8.4).
4	Are the cables between the Control PCA and the lamp damaged? Are the connectors connected correctly?	Referring to the following sections, check the cables (pink and blue lines). Lamp for ADF front: Sections 5.12.2 and 5.12.3. Lamp for ADF back: Sections 5.11.2 and 5.11.1 Lamp for FB: Sections 65.13.5 and 5.13.7
5	Replace the Control PCA and see if the error is resolved.	Refer to Section 5.8.4.

4.3.22 E6: Operator Panel Alarm

Item No.	Check items	How/where to check
1	Does the same symptom occur after turning OFF and ON the scanner?	Press the "O" area of power switch to turn the scanner OFF, and press the "I" area to turn it ON.
2	Check if the cable is firmly connected.	Refer to Section 5.13.1.
3	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 and see if the error is resolved.	Install the new Panel PCA after saving the EEPROM data (Section 5.13.1). Then conduct Maintenance mode #7 to restore the EEPROM data by referring to Section 6.1.8.

4.3.23 E7: EEPROM Alarm

Item No.	Check items	How/where to check
1	Does the same symptom occur after turning OFF and ON the scanner?	Press the "O" area of power switch to turn the scanner OFF, and press the "I" area to turn it ON.
2	Replace the Panel PCA and see if the error is resolved.	Refer to Section 5.13.1.
3	Replace the Control PCA and see if the error is resolved.	Refer to Section 5.8.4.

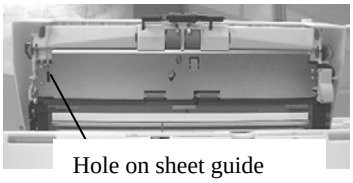
4.3.24 E8: SCSI Fuse Blown

Item No.	Check items	How/where to check
1	Does the same symptom occur after turning OFF and ON the scanner?	Press the "O" area of power switch to turn the scanner OFF, and press the "I" area to turn it ON.
2	Was this error caused by the SCSI cable connected to the scanner or other SCSI devices?	- Disconnect any other SCSI device connected. - Replace the SCSI cable.
3	Replace the Control PCA and see if the error is resolved.	Refer to Section 5.8.4.

4.3.25 E9: Image Memory Alarm

Item No.	Check items	How/where to check
1	Does the same symptom occur after turning OFF and ON the scanner?	Press the "O" area of power switch to turn the scanner OFF, and press the "I" area to turn it ON.
2	Replace the DIMM and see if the same symptom occurs.	Refer to Section 5.8.7.
2	Replace the Control PCA and see if the error is resolved.	Refer to Section 5.8.4.

4.3.26 F4: Drive System (Background Switchover) Alarm

Item No.	Check items	How/where to check
1	Does the same symptom occur after turning OFF and ON the scanner?	Press the "O" area of power switch to turn the scanner OFF, and press the "I" area to turn it ON.
2	Are the cables between the Control PCA, the BW motor (for driving background switch mechanism) and sensors (for detecting background position) damaged? Are the connectors connected properly?	BW motor (background switchover mechanism drive): Section 5.11.5. Sensor (background position detection): Section 5.11.6.
3	Check if the BW motor performs correctly.  Hole on sheet guide	Open the ADF, turn ON the power while pressing the Sensor OP. - If Background unit B/BS in the upper ADF does NOT operate, BW motor is not operating correctly. Replace the parts in the following order and find defective parts. 1) BW motor (Section 5.11.5) 2) Background unit F (Section 5.12.5) and Background unit B/BS (Section 5.11.8) 3) Control PCA (Section 5.8.4) - If Background unit B/BS on upper ADF operates correctly, replace the parts in the following order and find defective parts. 1) Sensor for background position detection (Section 5.11.6) 2) Background unit F (Section 5.12.5) and Background unit B/BS (Section 5.11.8) 3) Control PCA (Section 5.8.4)

4.3.27 F6: Fan Alarm

Item No.	Check items	How/where to check
1	Does the same symptom occur after turning OFF and ON the scanner?	Press "O" area of power switch to turn the scanner OFF, and press "I" area to turn it ON.
2	Check if the fan ASSY cable is not damaged, if the connectors are connected correctly, then replace the fan ASSY.	Refer to Section 5.8.3.
3	Replace the Control PCA and see if the error is resolved.	Refer to Section 5.8.4.

4.3.28 L6: Ultrasonic Sensor Alarm

Item No.	Check items	How/where to check
1	Does the same symptom occur after turning OFF and ON the scanner?	Press the "O" area of power switch to turn the scanner OFF, and press the "I" area to turn it ON.
2	Are the cables between the Control PCA and the sensors damaged? Are the connectors connected properly?	Refer to the following sections. Pick sensor: Section 5.10.2 DF sensor: Section 5.10.8 Top sensor: Section 5.10.7 Sensor (Empty sensor): Section 5.10.5 Sensor OP (ADF cover open sensor): Section 5.13.3
3	Replace each sensor and the US PCA and see if the error is resolved.	Refer to the following sections. Pick sensor: Section 5.10.2 DF sensor: Section 5.10.8 Top sensor: Section 5.10.7 Sensor (Empty sensor): Section 5.10.5 Sensor OP (ADF cover open sensor): Section 5.13.3 US PCA: Section 5.10.4
4	Replace the Control PCA and see if the error is resolved.	Refer to Section 5.8.4.

4.3.29 L9: OMR Sensor Alarm

Item No.	Check items	How/where to check
1	Does the same symptom occur after turning OFF and ON the scanner?	Press the "O" area of power switch to turn the scanner OFF, and press the "I" area to turn it ON.
2	Are the cables between the Control PCA and the sensors damaged? Are the connectors connected properly?	Refer to the following sections. Pick sensor: Section 5.10.2 DF sensor: Section 5.10.8 Top sensor: Section 5.10.7 Sensor (Empty sensor): Section 5.10.5 Sensor OP (ADF cover open sensor): Section 5.13.3
3	Replace each sensor and the US PCA and see if the error is resolved.	Refer to the following sections. Pick sensor: Section 5.10.2 DF sensor: Section 5.10.8 Top sensor: Section 5.10.7 Sensor (Empty sensor): Section 5.10.5 Sensor OP (ADF cover open sensor): Section 5.13.3 US PCA: Section 5.10.4
4	Replace the Control PCA and see if the error is resolved.	Refer to Section 5.8.4.

4.3.30 C0: LSI Alarm

Item No.	Check items	How/where to check
1	Does the same symptom occur after turning OFF and ON the scanner?	Press the "O" area of power switch to turn the scanner OFF, and press the "I" area to turn it ON.
2	Replace the Control PCA and see if the error is resolved.	Refer to Section 5.8.4.

4.3.31 C8: Internal Communication Alarm

Item No.	Check items	How/where to check
1	Does the same symptom occur after turning OFF and ON the scanner?	Press the "O" area of power switch to turn the scanner OFF, and press the "I" area to turn it ON.
2	Replace the Control PCA and see if the error is resolved.	Refer to Section 5.8.4.

4.3.32 F: Flash RAM Alarm

Item No.	Check items	How/where to check
1	Does the same symptom occur after turning OFF and ON the scanner?	Press the “O” area of power switch to turn the scanner OFF, and press the “I” area to turn it ON.
2	Replace the Control PCA and see if the error is resolved.	Refer to section 6.7.

4.3.33 Illegal Command

Item No.	Check items	How/where to check
1	Does the same symptom occur after turning OFF and ON the scanner and PC?	Press the “O” area of power switch to turn the scanner OFF, and press the “I” area to turn it ON.
2	Replace the Control PCA and see if the error is resolved.	Refer to Section 5.8.4.

4.3.34 Interface Alarm

Item No.	Check items	How/where to check
1	Does the same symptom occur after turning OFF and ON the scanner and PC?	Press the “O” area of power switch to turn the scanner OFF, and press the “I” area to turn it ON.
2	Replace the Control PCA and see if the error is resolved.	Refer to Section 5.8.4.

4.3.35 H5: TPS Fuse Blown

Item No.	Check items	How/where to check
1	Does the same symptom occur after turning OFF and ON the scanner?	Press the “O” area of power switch to turn the scanner OFF, and press the “I” area to turn it ON.
2	Replace the Fuse (F5) and see if the error is resolved.	Refer to Section 5.8.5. F5: For CGA board
3	Check that the optional board (TPS board) is securely installed.	Refer to Section 5.8.6.
4	Replace the optional board (TPS board) and see if the error is resolved.	Refer to Section 5.8.6.
5	Replace the Control PCA and see if the error is resolved.	Refer to Section 5.8.4.

Chapter 5 Maintenance Procedure

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

5.1 For Safety Operation

Please read this page carefully before disassembling or assembling.

⚠Warning **Electric shock**

Before disassembling or assembling, turn the power switch off,
and unplug the AC power source from the outlet.
If you do not do 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

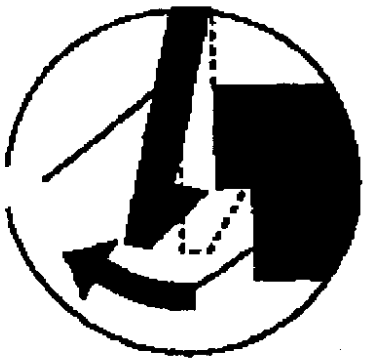
Static Electricity may cause the damage to the scanner.
When repairing the scanner, wear a wrist strap to avoid ESD.

Notes when cleaning

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

How to unlock plastic hooks

Many parts of the scanner are held in place with plastic hooks.
When removing parts that are held in place with hooks, be very careful not to break the hooks.
Pull out the latch to unlock, then pull up on the assembly to remove.



Do not use excessive force when removing parts held in place with hooks.

5.2 Periodic Maintenance

Periodic maintenance should be performed on the scanner at the following intervals.

Item	Maintenance cycle
Periodic maintenance	Every 12 months

During a service call,, clean the following if they are dirty.

- ADF (Section 7.2.1)
- Document cover, Document pad (Section 7.2.2)

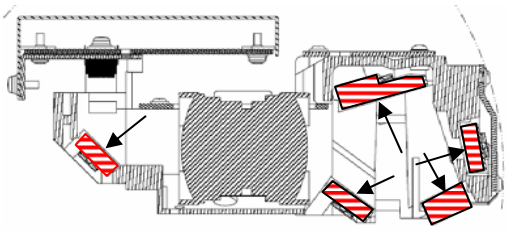
5.3 Cleaning

5.3.1 Cleaning the Optical Unit ADF

Clean the Optical unit ADF using the following procedure.

1) To clean the Optical unit ADF for front side scanning (lower parts in ADF), remove the Optical unit ADF by following the procedure in Section 5.12.2.
   To clean the Optical unit ADF for backside scanning (upper parts in ADF), remove the Optical unit ADF by following the procedure in Section 5.11.2.

2) Remove any paper dust on the mirrors and lens of the Optical unit ADF (arrows in the figure below) with blow brush (photo below). Do not use compressed air which may build up condensation on the mirrors.



Blow brush

NOTICE

Do not disassemble any parts of the Optical unit (PCA's and mirrors) as mentioned in Section 5.5.

5.3.2 (Reserved)

5.3.3 (Reserved)

5.3.4 (Reserved)

5.4 Maintenance Tool

Special tools to maintain this scanner are shown in table below.

No.	Tools	When to use	Remarks
1	Philips screwdriver		For M3, M4 screws
2	Alcohol	Cleaning	Ethyl alcohol or isopropyl alcohol
3	Blow brush	Cleaning mirror	
4	Glove or cloth	Handling CR shaft	
5	Small flat-blade screwdriver	Removing sensors and connector	
6	Allen Wrench (2mm)	Removing special screws for carrier guide shaft	
7	Longnose plier	Installing E ring	
8	White level adjustment sheet	White level adjustment (Section 6.1.5)	Description: WHITE SHEET ATP Part number: PA03277-Y123 Purchase this sheet prior to maintenance.
9	Magnification / Offset adjustment sheet	Magnification adjustment (Section 6.1.3) Offset adjustment (Section 6.1.4)	Required for magnification / offset adjustment for ADF. Refer to Figure 6.1.3, and prepare the sheet in advance.
10	Adjustment sheet	Ultrasonic sensor adjustment (Section 6.1.9)	Description: ADJUST PAPER Part number: PA03296-Y990 Used when replacing US sensor, US PCA, ADF Fix Unit or ADF Rev Unit.
11	Vacuum cleaner	Commercial item	Required for cleaning
12	Packing tape	Commercial item	Required for cleaning

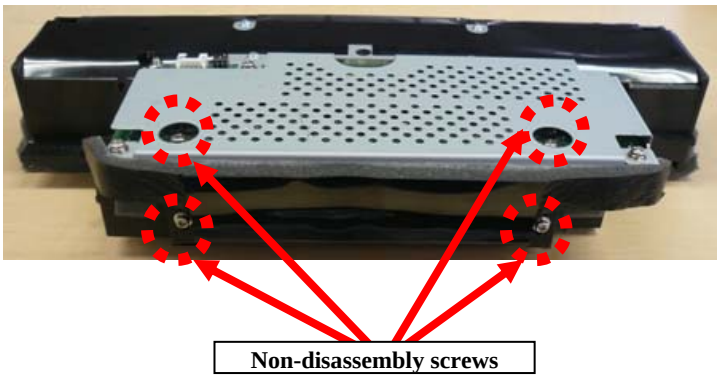
5.5 Non-disassembly Parts

⚠CAUTION

The following screws are adjusted and secured at the factory. Do not attempt to disassemble or loosen them.

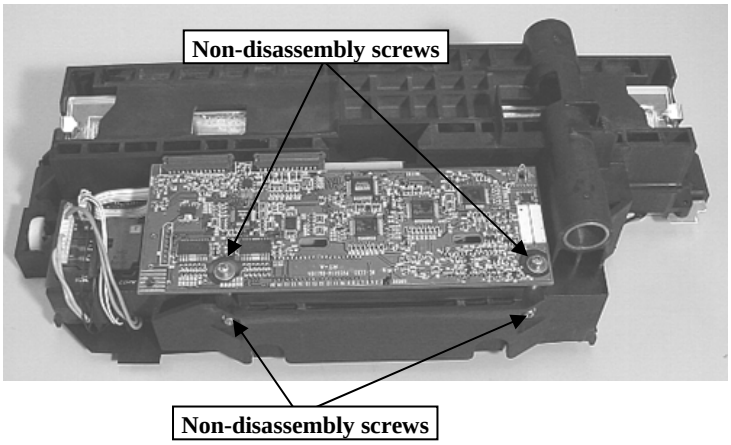
(1) Optical unit ADF

Besides the non-disassembly screws, do NOT disassemble any parts on this unit (mirrors).



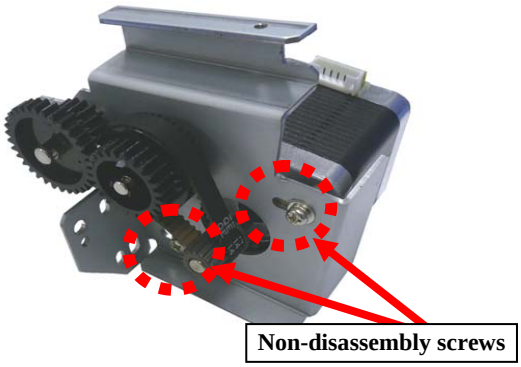
(2) Optical unit FB

Besides the non-disassembly screws, do NOT disassemble any parts on this unit (mirrors).



(3) FB motor screws

(4) PICK motor unit screws



5.6 (Reserved)

5.7 Chute ASSY / Chute Roller / Stacker ASSY

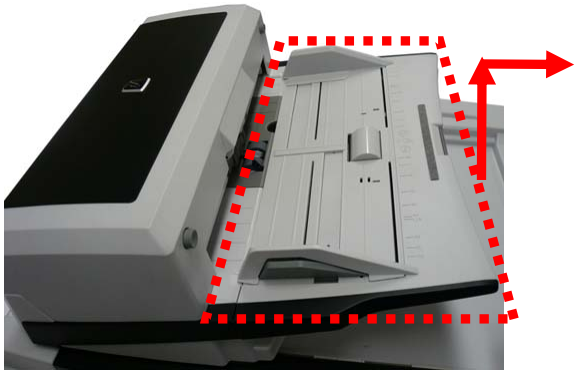
5.7.1 Chute ASSY

NOTICE

Refer to section 3.38 for the part number of the Chute ASSY.

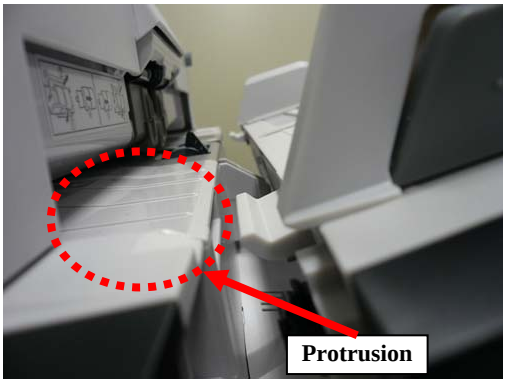
<Removal>

(1) Lifting up the front edge of the Chute ASSY slightly, pull it out of the scanner.



<Installation>

(1) Insert the protrusions of the Chute ASSY into the openings in the scanner.



Note: Make sure that there is no gap between the Chute ASSY and the scanner after installation.
If there is a gap between the Chute ASSY and the scanner when the Side Guides are adjusted, the Chute ASSY may move and fall off.

Chute ASSY

5.7.2 Chute Roller

NOTICE

Refer to Section 3.39 for the part number of the Chute Roller.

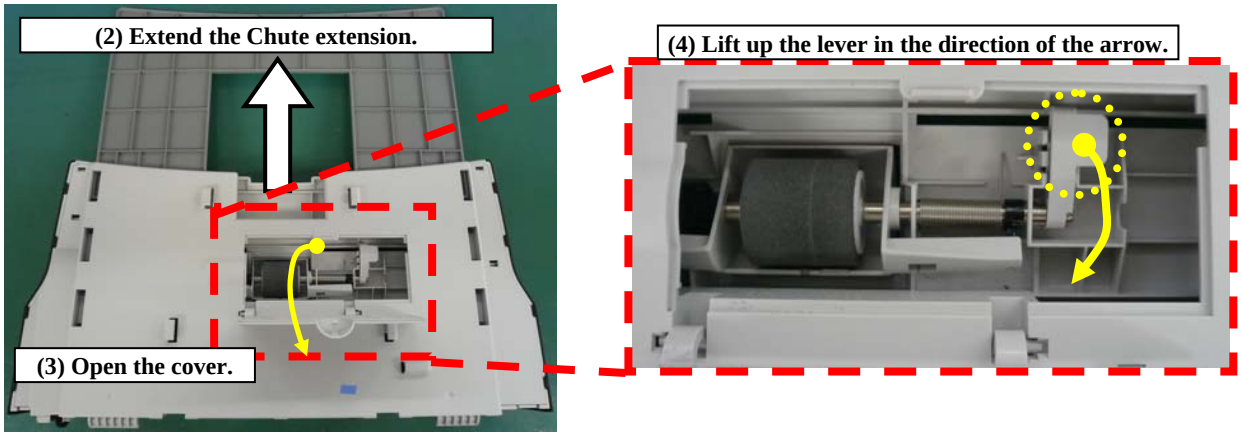
<Removal>

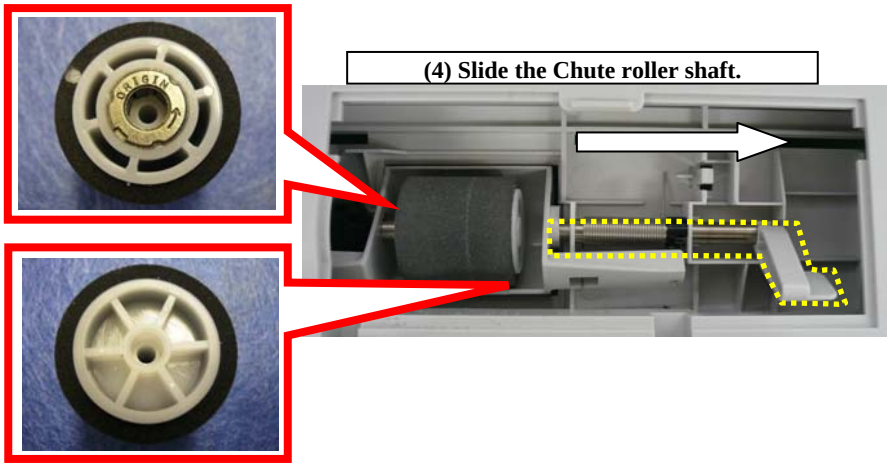
(1) Remove the Chute ASSY by referring to Section 5.7.1.

(2) Extend the extension of the Chute ASSY all the way out.

(3) Open the lower cover of the Chute.

(4) Lift up the lever in the direction of the arrow, and then slide the Chute roller shaft to the right to remove the Chute roller.





<Installation>

Follow the above procedure in reverse.

Chute roller

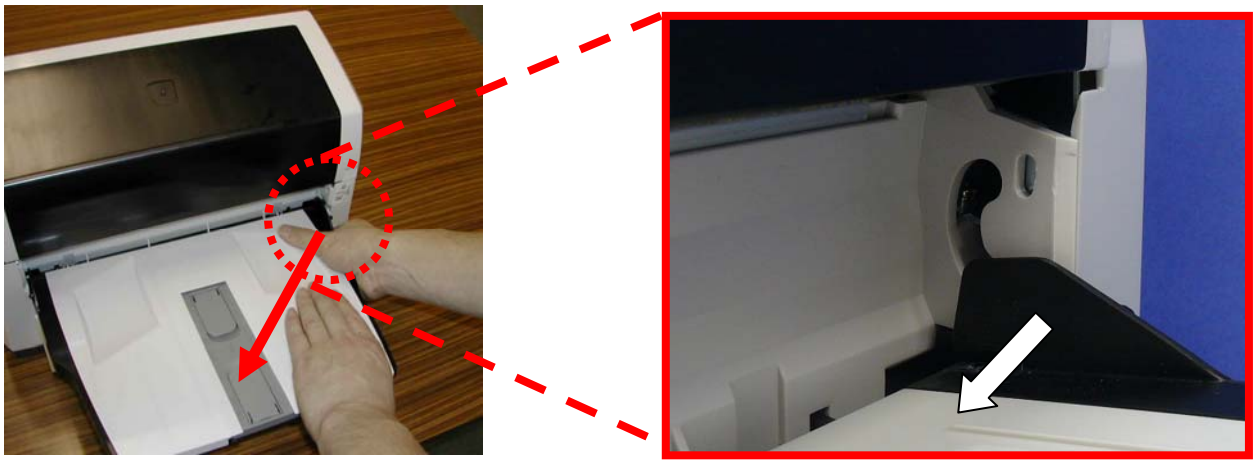
5.7.3 Stacker ASSY

NOTICE

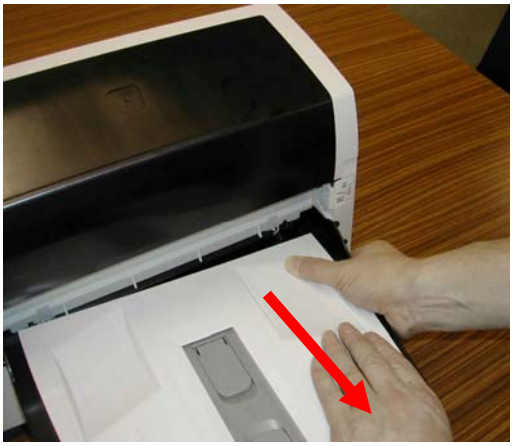
Refer to section 3.37 for the part number of the Stacker ASSY.

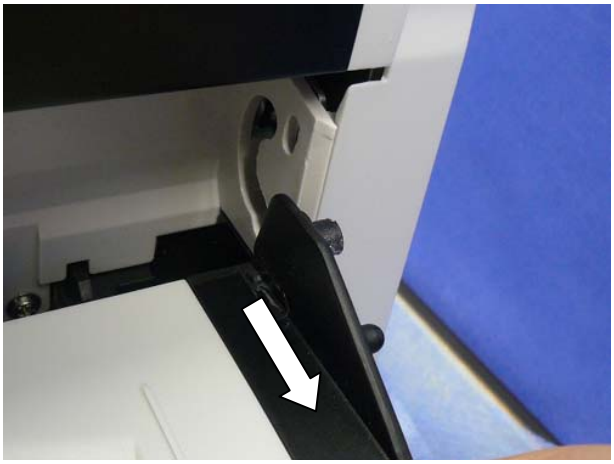
<Removal>

(1) Pushing one side (right side in the photo) of the Stacker to bow, unlatch the pin on the Stacker ASSY.



(2) Pull the Stacker toward you to remove from the scanner.





<Installation>

Follow the above procedure in reverse.

Stacker ASSY

5.8 Inside of PCA Unit

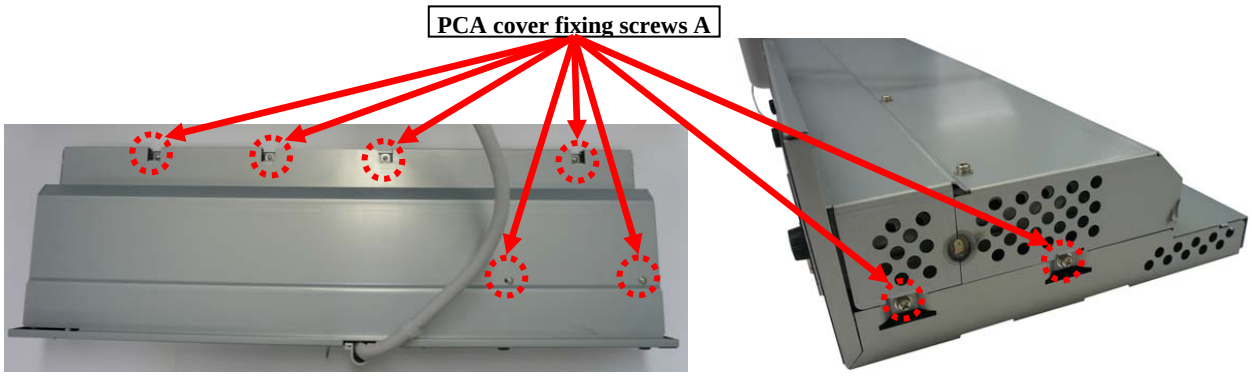
5.8.1 PCA Unit (not a maintenance part)

<Removal>

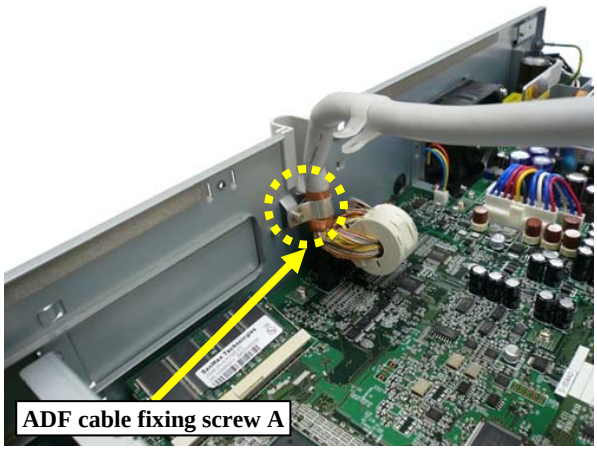
(1) Turn OFF the scanner, and remove the AC cable. Remove the ADF cable fixing screw B from the AC inlet (There is a caution label).

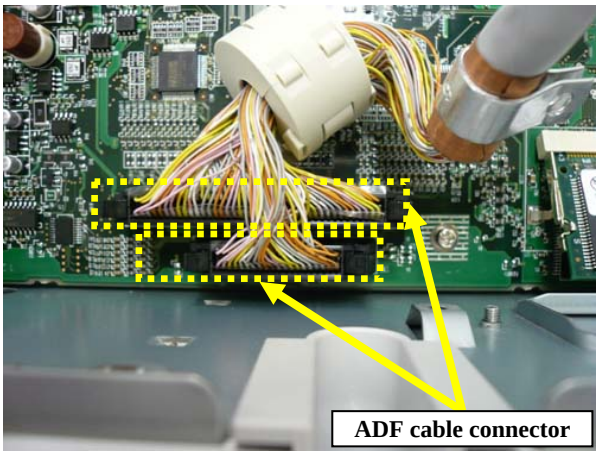
(2) Remove the three screws B that secure the PCA unit from rear of the scanner. Hold the handle at the center of the PCA unit and pull the PCA unit out of the scanner slightly (photo below). Be careful not to pull the ADF cable that connects the PCA unit to the ADF.

(3) Remove eight screws A that secure the PCA cover to remove the PCA cover.



(4) Remove the screw A that secures the ADF cable. Disconnect the two connectors of the ADF cable from the Control PCA. Go to the replacement procedures for each part.





<Installation>

Follow the above procedure in reverse.

5.8.2 Power Supply

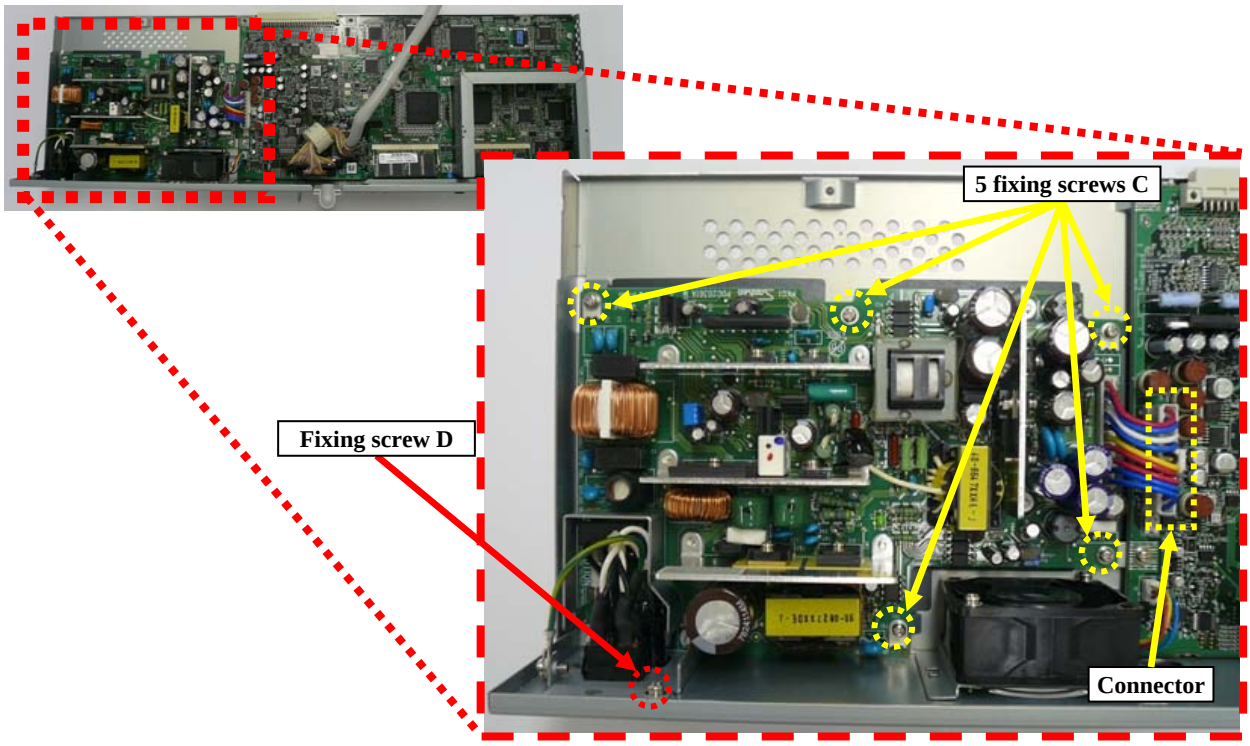
NOTICE

Refer to the Section 3.36 for the part number of the Power Supply.

<Removal>

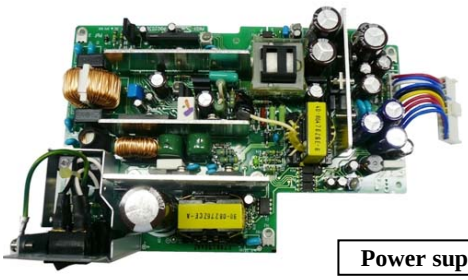
(1) Remove the PCA Unit by referring to Section 5.8.1.

(2) Disconnect a connector and five screws C and one screw D that secure the Power Supply, and then remove the Power Supply.



<Installation>

Follow the above procedure in reverse.



5.8.3 Fan ASSY

NOTICE

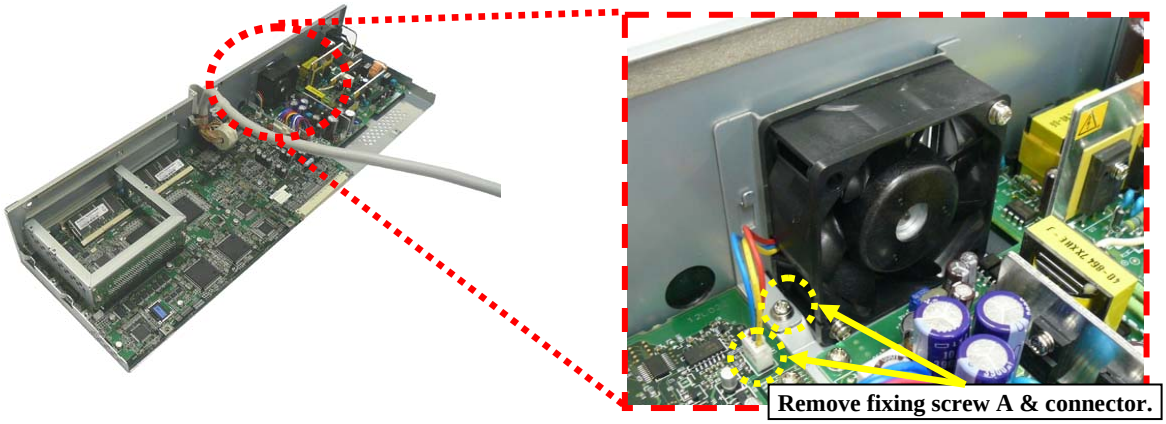
Refer to the Section 3.43 for the part number of the Fan ASSY.

<Removal>

(1) Remove the PCA Unit by referring to Section 5.8.1.

(2) Disconnect the Fan cable from the connector on the Control PCA.

(3) Remove the fixing screw A and lift the Fan ASSY and the bracket upward to remove.

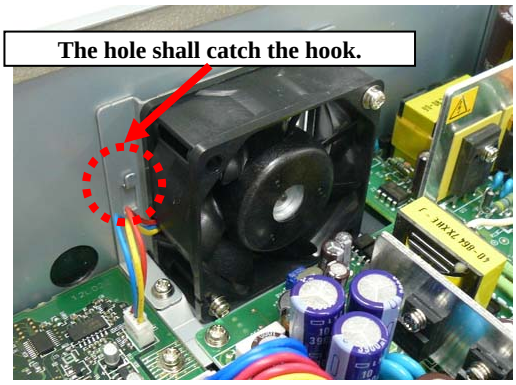


Fan ASSY

<Installation>

Follow the above procedure in reverse.

Note: Install the bracket so that the bracket hole of the Fan ASSY catches the two hooks of the PCA Unit.



5.8.4 Control PCA

NOTICE

Refer to the Section 3.30 for the part number of the Control PCA.

<fi-6770 / fi-6770A Removal>

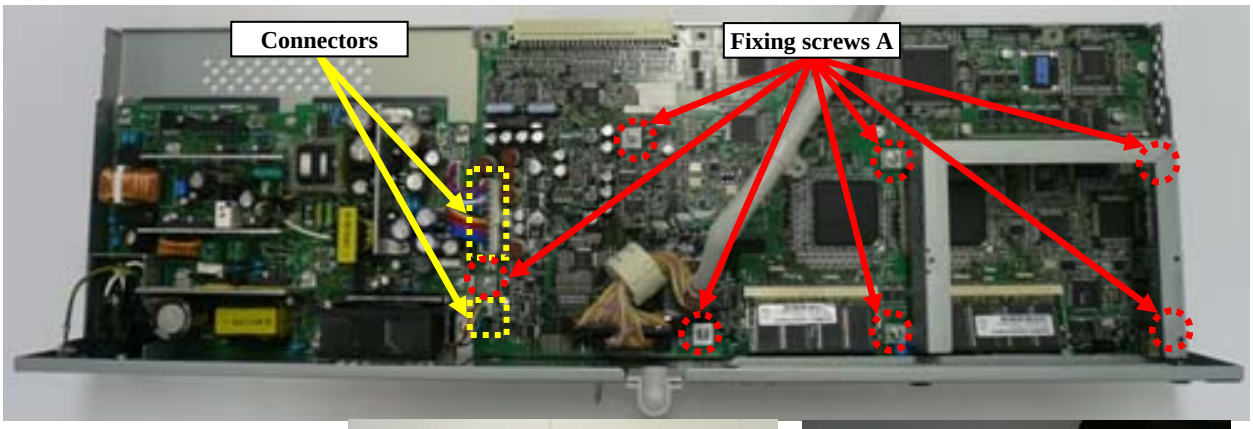
(1) Remove the PCA Unit by referring to Section 5.8.1.

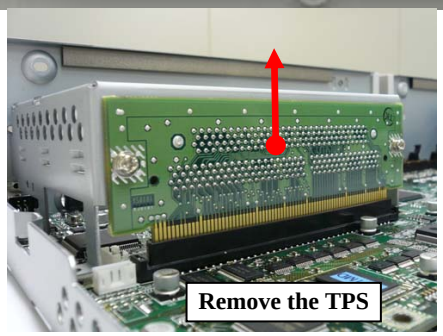
(2) Disconnect the connector of the Power Supply by referring to Section 5.8.2.

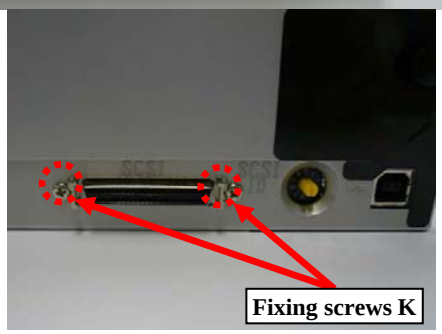
(3) Disconnect the connector of the Fan ASSY by referring to Section 5.8.3.

(4) Remove the seven screws A that secure the Control PCA, remove the rail assembly (PCA) of the Third Party Slot (TPS), and then remove the DIMM's from the Control PCA.

(5) Remove the two screws K that secure the Interface connectors, and then remove the Control PCA.







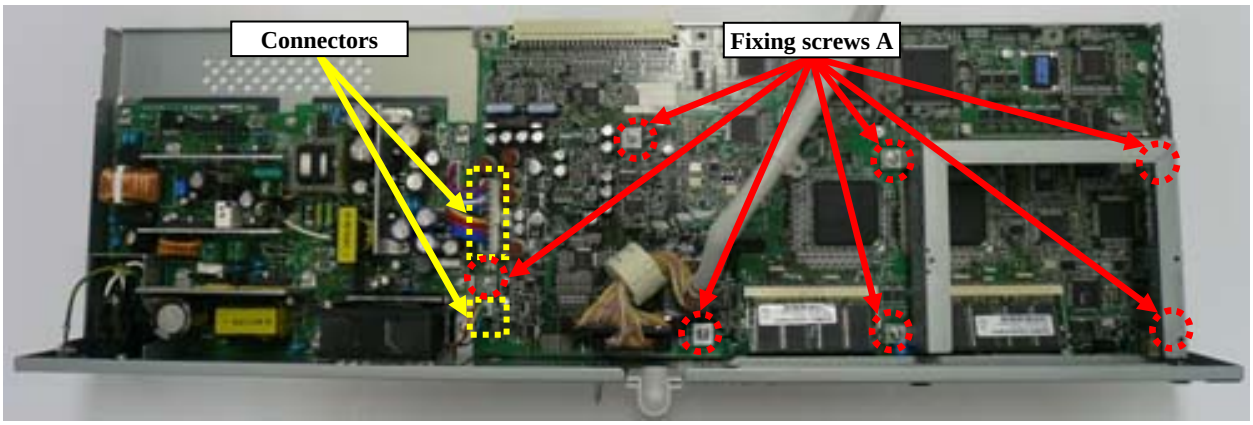
<fi-6750S Removal>

(1) Remove the PCA Unit by referring to Section 5.8.1.

(2) Disconnect the connector of the Power Supply by referring to Section 5.8.2.

(3) Disconnect the connector of the Fan ASSY by referring to Section 5.8.3.

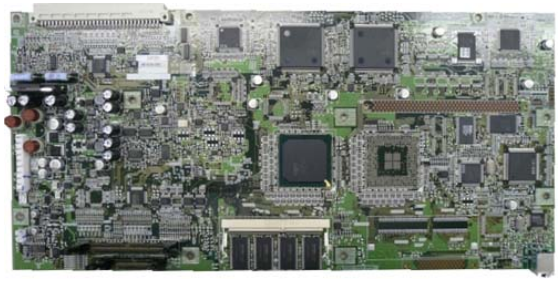
(4) Remove the seven screws A that secure the Control PCA, and then remove the DIMM's from the Control PCA.



<fi-6770 / fi-6770A / fi-6750S Installation>

Follow the above procedure in reverse.

Control PCA
for fi-6770/fi-6770A
PA03576-D807



Control PCA
for fi-6750S
PA03576-D832

5.8.5 Fuses

NOTICE

Refer to the following sections for the part numbers of the Fuses.

Fuse 2 (2.5A): Section 3.22

Fuse 3 (4.0A): Section 3.23

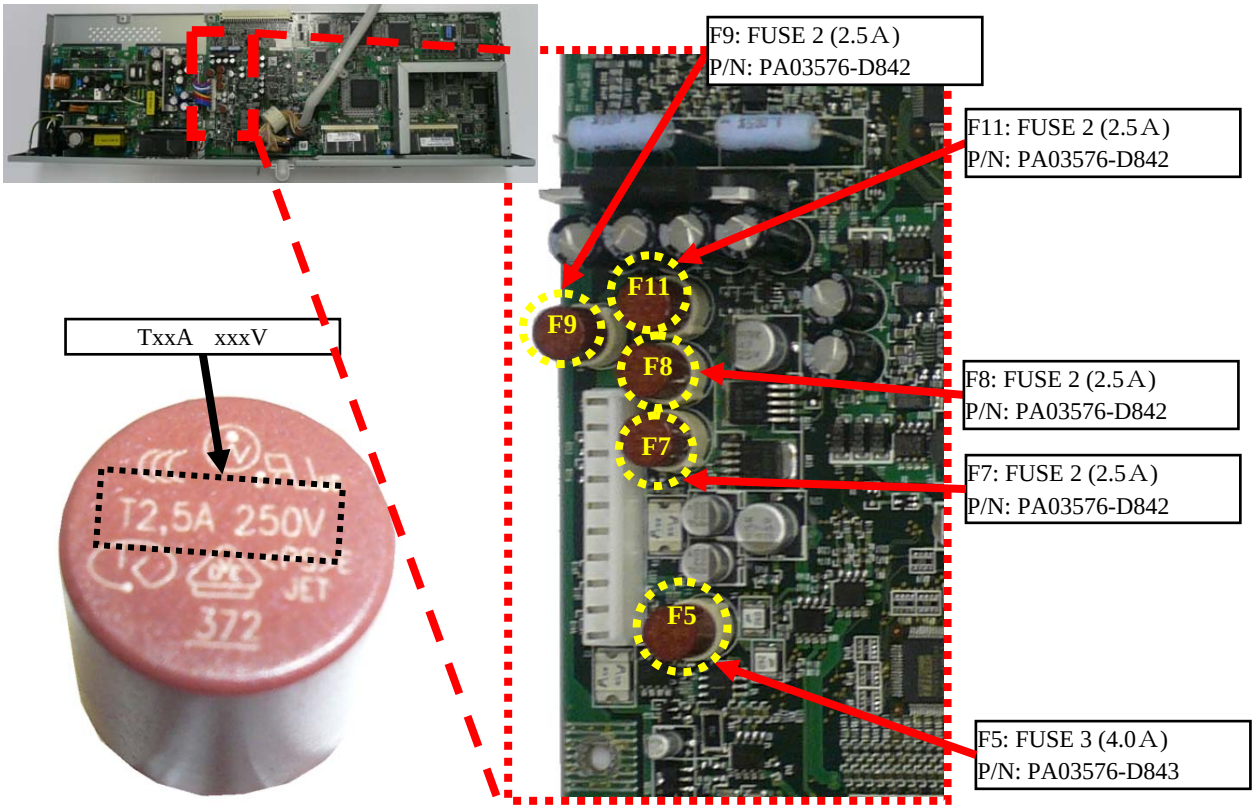
<Removal>

(1) Remove the PCA Unit by referring to Section 5.8.1.

(2) Remove the Power Supply by referring to Section 5.8.2.

(3) Remove the Fan ASSY by referring to Section 5.8.3.

(4) Remove the Fuse to be replaced on the Control PCA.



(6) Replace the Fuse with a new Fuse of which current value is the same.

Note: Be sure that the same current value fuse is installed onto the same position.

	Fuse position	Installed Fuse	Current value	fi-6770 fi-6770A	fi-6750S	Part number	Purpose
1	F11	FUSE 2	2.5 A	✓	✓	PA03576-D842	For motor (Pick motor , Feed motor, Background switchover, Pick arm motor
2	F5	FUSE 3	4.0 A	✓	---	PA03576-D843	For CGA Board (for TPS)
3	F7	FUSE 2	2.5 A	✓	✓	PA03576-D842	For front side lamp, heater
4	F8	FUSE 2	2.5 A	✓	---	PA03576-D842	For backside lamp, heater
5	F9	FUSE 2	2.5 A	✓	✓	PA03576-D842	For flatbed lamp, heater

<Installation>

Follow the above procedure in reverse.

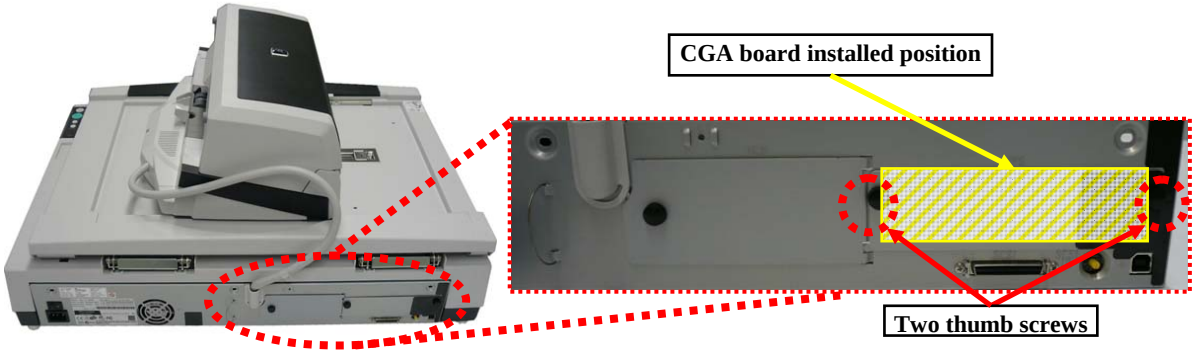
5.8.6 CGA Board / DIMM

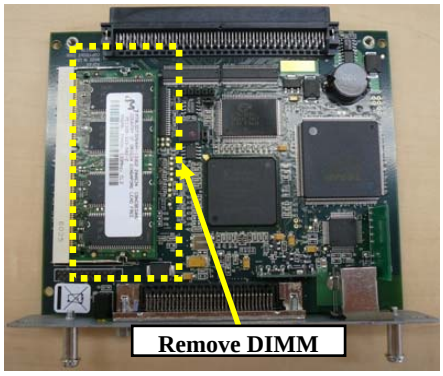
NOTICE

Refer to Sections 3.44 and 3.45 for the part numbers of the CGA Board/DIMM.
The CGA Board is only installed on the fi-6770A (standard) or the fi-6770 with CGA option.

<Removal>

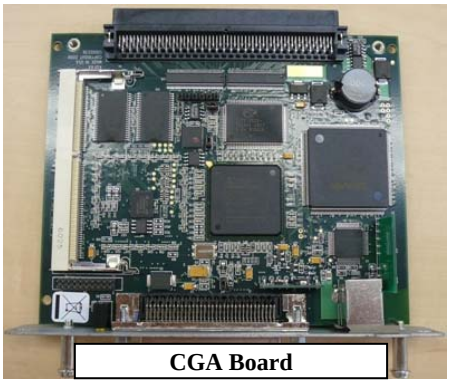
(1) Remove the two thumb screws that secure the CGA Board.
(2) Pull the CGA Board out of the scanner.
(3) Remove the DIMM from the memory slot on the CGA board.





<Installation>

Follow the above procedure in reverse.



DIMM

5.8.7 DIMM

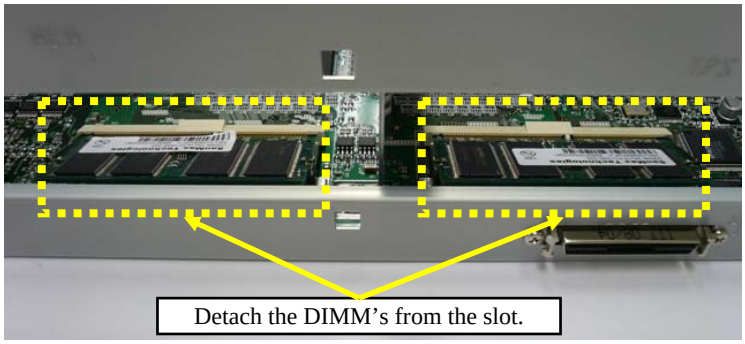
NOTICE

Refer to Section 3.45 for the part number of the DIMM.

<Removal>

(1) Remove the CGA Board by referring to Section 5.8.6.
Note: If the CGA board is not installed, remove the Third Party Slot cover.
(2) Remove the thumb screw that secures the Memory cover.
(3) Remove the DIMM's from the Memory slots.

DIMM



The fi-6770/fi-6770A has two DIMM's installed.
The fi-6750S has one DIMM installed.

<Installation>

Follow the above procedure in reverse.

DIMM

5.9 ADF Unit / FB Unit

5.9.1 ADF Unit

NOTICE

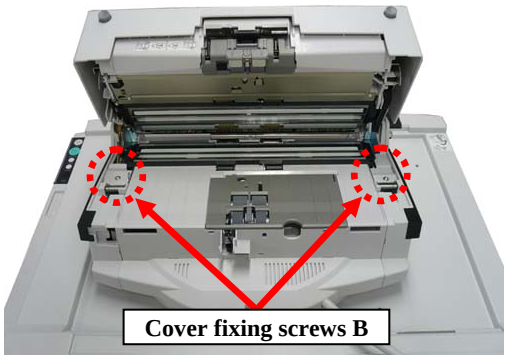
Refer to Section 3.46 for the part number of the ADF Unit.

<Removal>

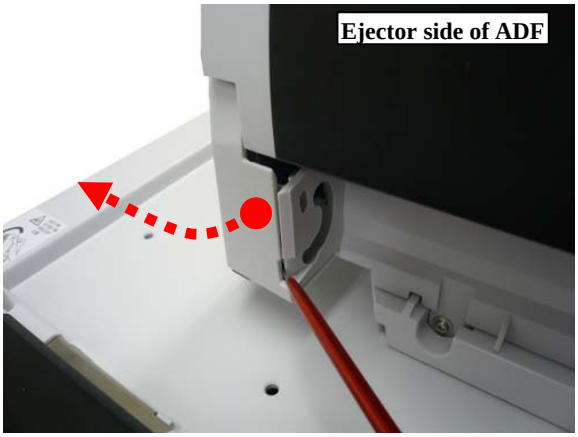
(1) Remove the Chute ASSY (Section 5.7.1) and the Stacker ASSY (Section 5.7.3).

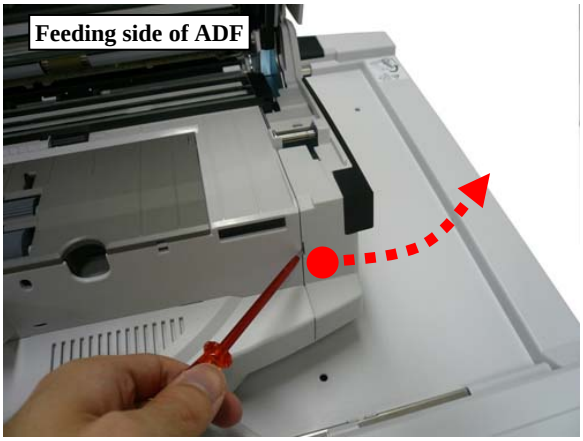
(2) Move the ADF to the center of the scanner and rotate it 90 degrees.

(3) Open the ADF, and remove each screw B that secures the right and left covers.



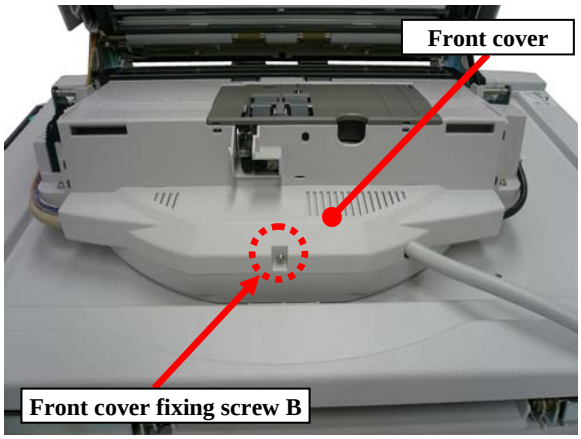
(4) With the ADF left open slightly, insert a small flat-blade screwdriver in the space at rear of the right covers shown in the photo below on the left, and unlatch the cover from the scanner.
- Insert a small flat-blade screwdriver in the space at the front of the right cover to unlatch.



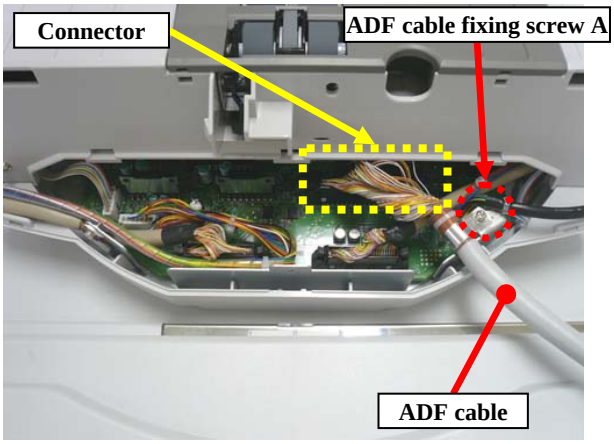


(5) Remove the left cover in the same way as in steps (4) and (5).

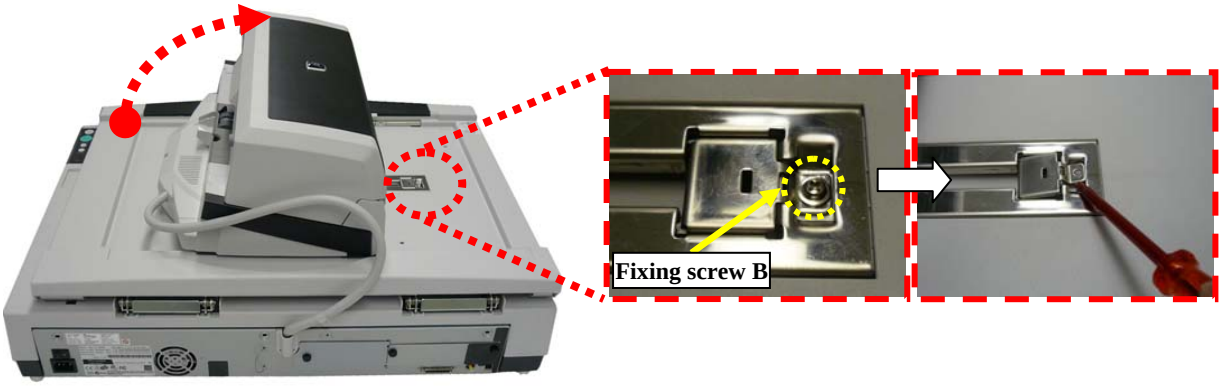
(6) Remove the screw B at the front of the ADF unit, and then remove the front cover.



(7) Remove the screw A that secure the ADF cable, disconnect the connector, and then remove the ADF cable from the ADF junction PCA.



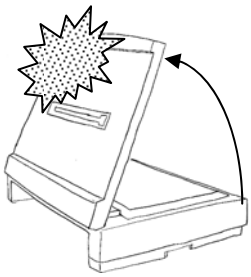
(8) Close the ADF, rotate it 90 degrees, remove the screw B, then a bracket.



(9) Open the Document cover. Supporting the ADF unit from the bottom not to drop it, move it to the edge of the Document cover, then remove it.

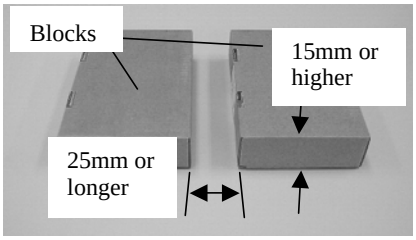
NOTICE

Never try to remove the ADF unit only from the Document cover at first. The Document cover hinges are very strong to balance the ADF weight. Without the ADF weight, the Document cover will open with great force possibly causing injury.



Reference

There is a projection at the bottom of the ADF unit. Prepare blocks as shown in the photo below and place the ADF unit on them. This will make the ADF more stable.



<Installation>

Follow the above procedure in reverse.

5.9.2 ADF Fix Unit / ADF Rev Unit

NOTICE

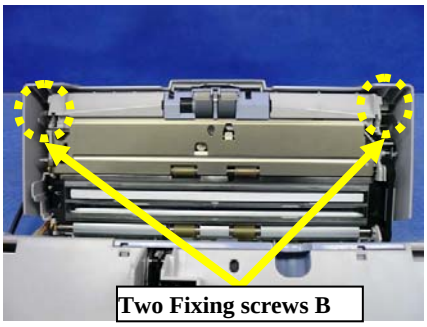
Refer to the following sections for the part numbers of the replacement parts.

ADF Fix Unit: Section 3.1

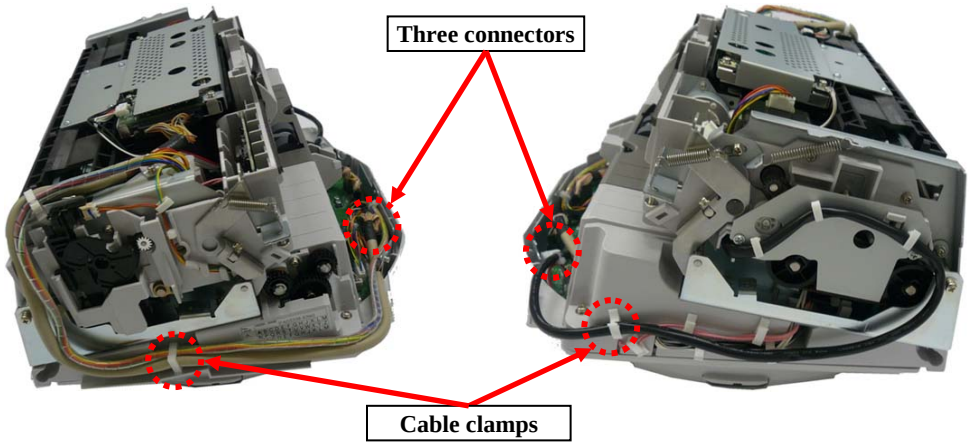
ADF Rev Unit: Section 3.2

<Removal>

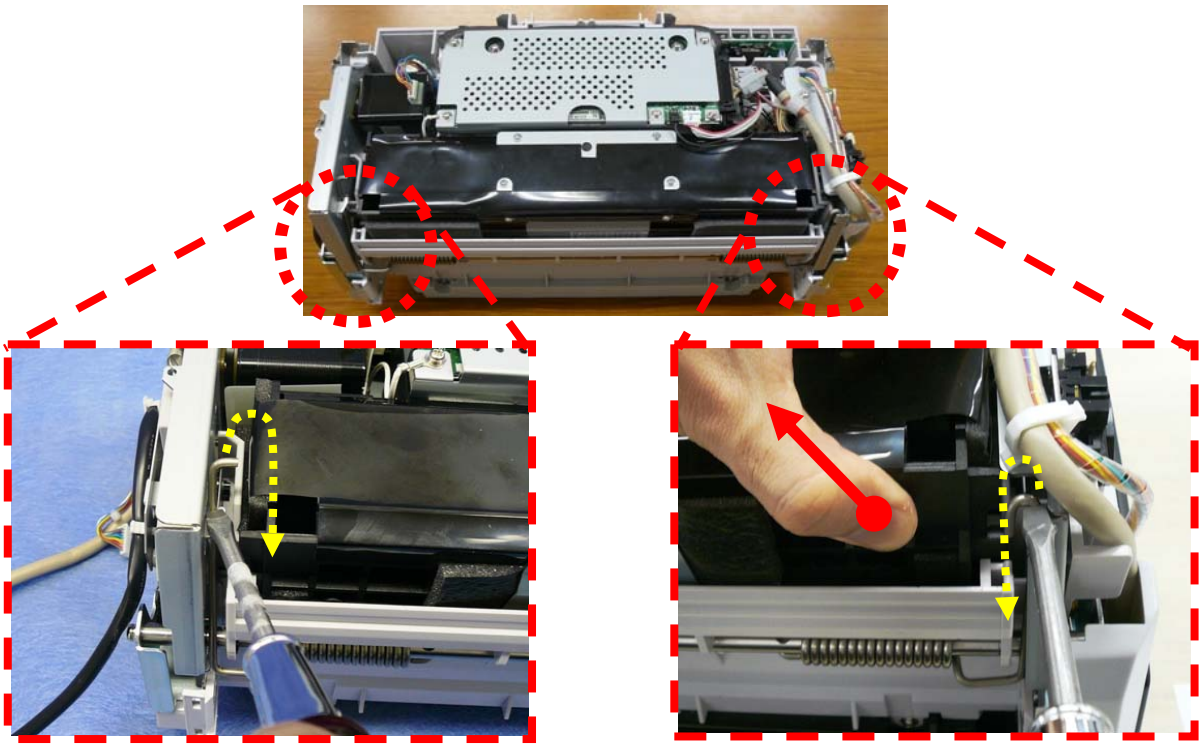
(1) Open the ADF, remove the two screws B (circles in the lower left photo) that secure the ADF cover. Pull out on the exit side of the ADF cover to remove the ADF cover.



(2) Remove the three cables (right and left) connected to the ADF Fix Unit from the cable clamps.

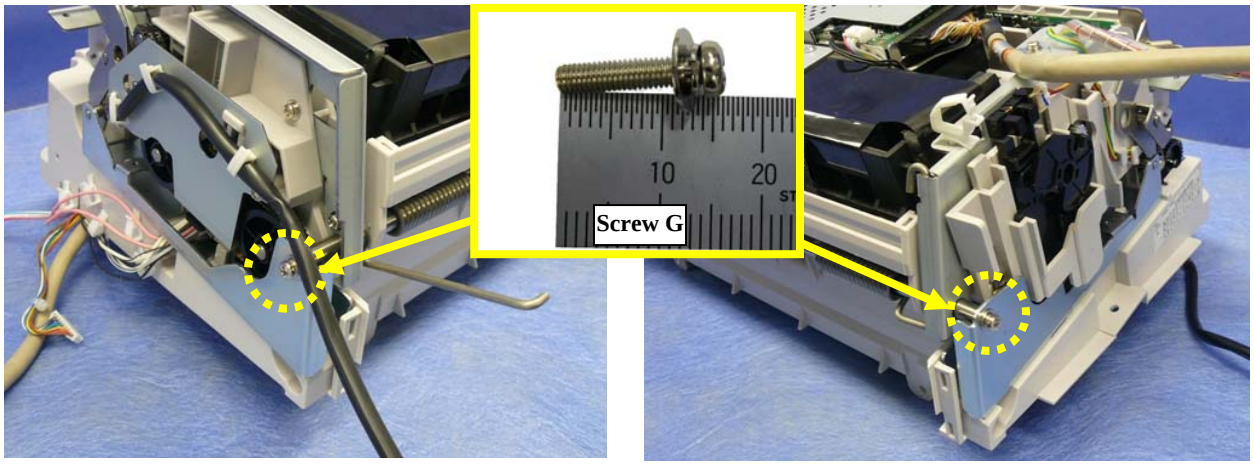


(3) Release the arm of the torsion coil spring for balancing weight in the ADF from the side panel of the frame.



Opening the ADF makes easier to release the coil arm.

(4) Remove the two large screws G (on the right and left) from the left and right side panel of the ADF.



(5) With a flat-blade screwdriver, slightly pry open the metal side panel to release the ADF Rev Unit from the ADF Fix Unit.

The ADF secured unit is the ADF fixed unit with Right cover, Left cover, and Front cover attached.
The ADF Rev unit is the ADF movable side with ADF cover attached.

ADF FIX Unit

ADF REV Unit

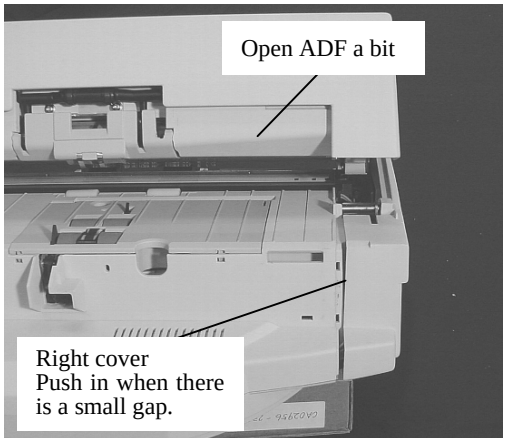
Note: Be careful not to damage the glass on the ADF Upper unit.

<Installation>

Follow the above procedure in reverse.

When installing the left and right covers, open the ADF slightly, place the covers horizontally onto the side of the scanner, being carefully not to pinch the cables, and push them into place.

Note: After replacing the ADF unit, perform the magnification adjustment (Section 6.1.3), offset adjustment (Section 6.1.4), white level adjustment (Section 6.1.5) and Ultra sonic sensor adjustment (Section 6.1.9). Reset the consumables counters as well (Section 6.1.6).



5.9.3 Document Cover

NOTICE

Refer to Section 3.27 for the part number of the Document Cover.

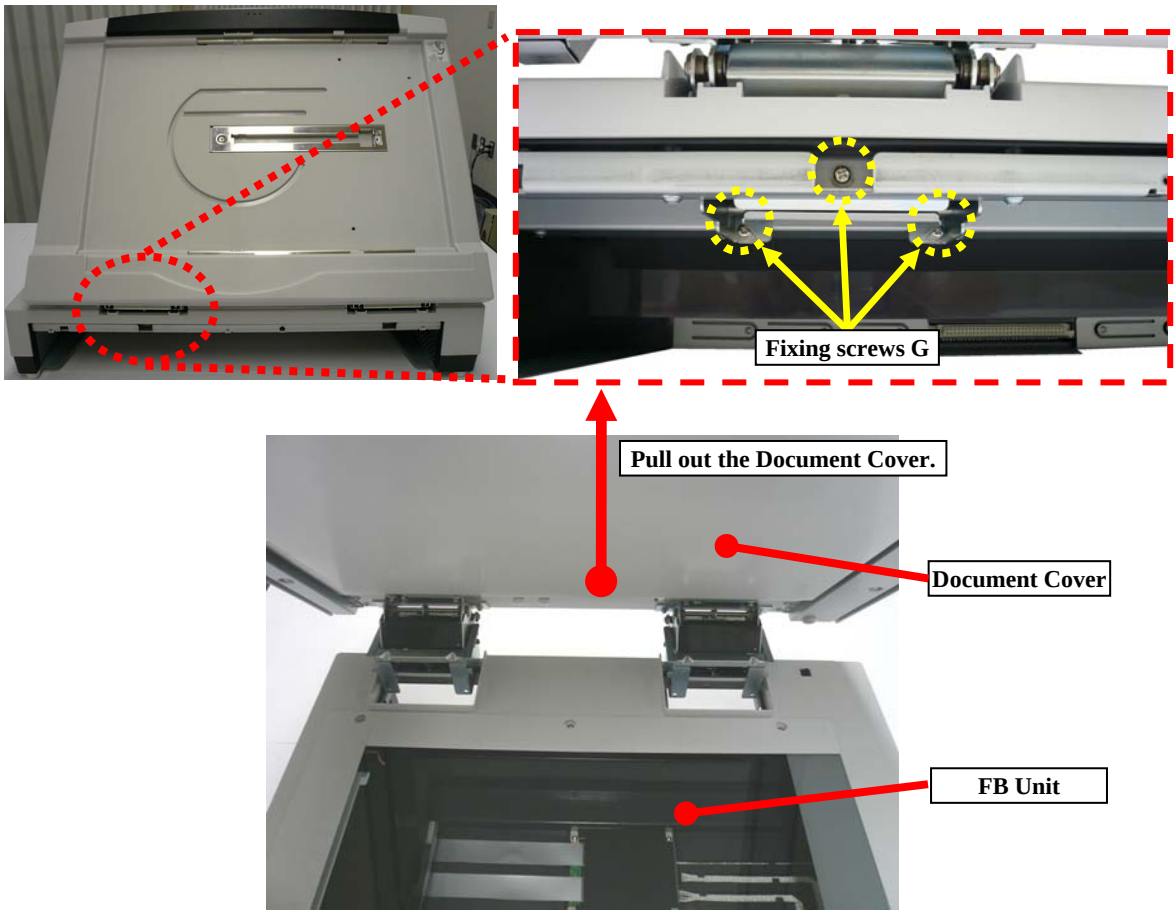
<Removal>

(1) Remove the PCA Unit by referring to Section 5.8.1.

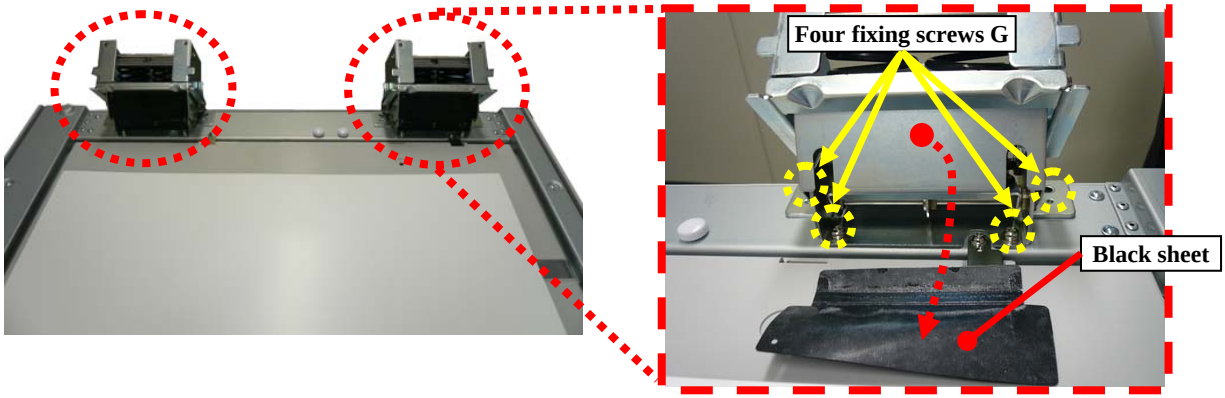
(2) Remove the ADF Unit by referring to Section 5.9.1.

(3) Open the Document cover, and then remove the six screws G (three each at left and right) that secure the Document Cover at the rear of the scanner.

(4) Lift the Document cover out of the FB unit to remove.



(4) Peel off the black sheets from the Hinge Units, and remove the four fixing screws G.

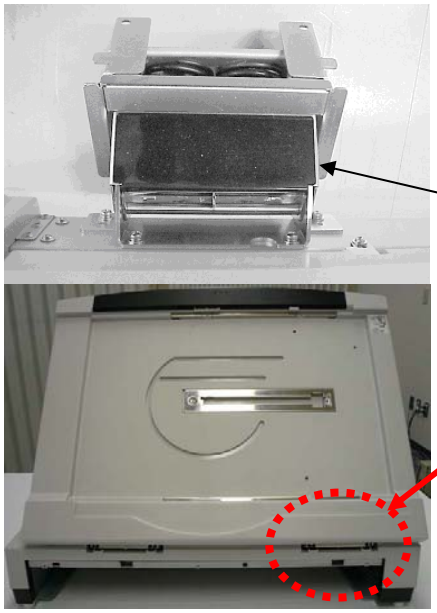


<Installation>

Follow the above procedure in reverse.

NOTICE

1. If the Hinge unit has been replaced, paste the enclosed black sheet onto the same position on the Hinge Unit.
2. With the Document cover opened, install the screw at the interface side first in order to decide the position.



5.9.4 Hinge Unit

NOTICE

Refer to Section 3.29 for the part number of the replacement part.

<Removal>

(1) Remove the PCA Unit by referring to Section 5.8.1.

(2) Remove the ADF Unit by referring to Section 5.9.1.

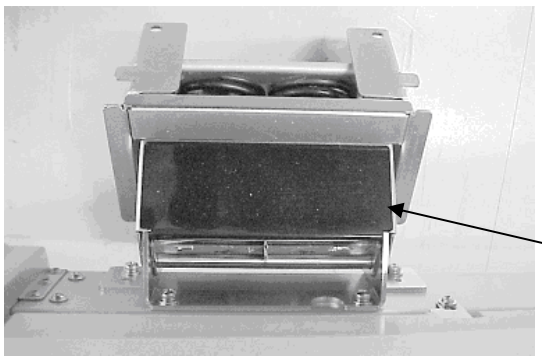
(3) Remove the Document Cover and Hinge Unit by referring to steps (3) ~ (5) of Section 5.9.3.

<Installation>

Follow the above procedure in reverse.

NOTICE

If the Hinge unit has been replaced, paste the enclosed black sheet onto the same position on the Hinge Unit.



5.9.5 FB Unit

NOTICE

Refer to Section 3.21 for the part number of the FB Unit.

(1) Remove the PCA Unit by referring to Section 5.8.1.
(2) Remove the ADF Unit by referring to Section 5.9.1.
(3) Remove the Document Cover by referring to steps (3) and (4) of Section 5.9.3.
(4) Remove the Panel Unit from the FB Unit by referring to Section 5.13.1.
(5) Remove the Optical Unit FB by referring to Section 5.13.5.

Reference

The FB unit includes:

FB Junction PCA, Sensor OP (for detecting Document cover open), Sensor (for detecting home position), CCD Cable FB, FB Motor

<Installation>

Follow the above procedure in reverse.

Note: After replacing the FB Unit, perform the magnification adjustment (Section 6.1.3), offset adjustment (Section 6.1.4), and white level adjustment (Section 6.1.5).

5.10 Paper path

5.10.1 Guide S ASSY

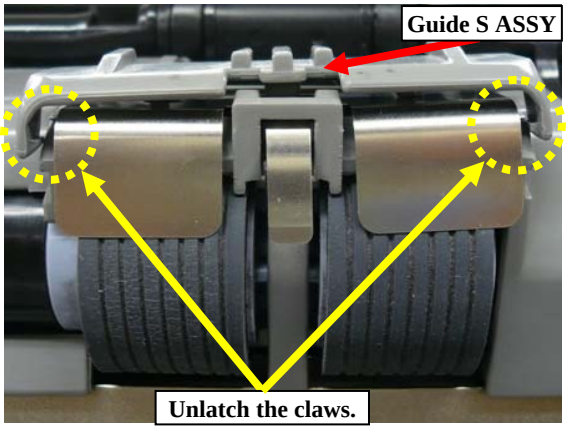
NOTICE

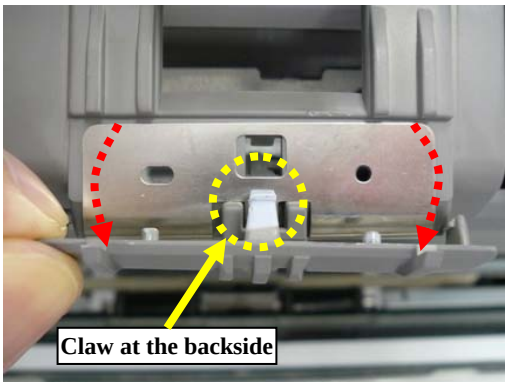
Refer to section 3.11 for the part number of the Guide S ASSY.

<Removal>

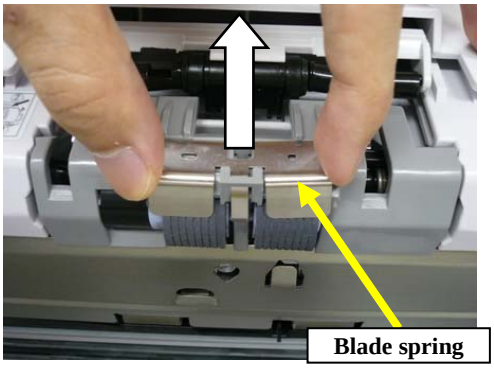
(1) Open the ADF.

(2) Unlatch both sides of the Guide S ASSY, insert a small flat-blade screwdriver between the blade spring and plastic part to remove the plastic part.





(3) Remove the blade spring by lifting up.



<Installation>

Follow the above procedure in reverse.

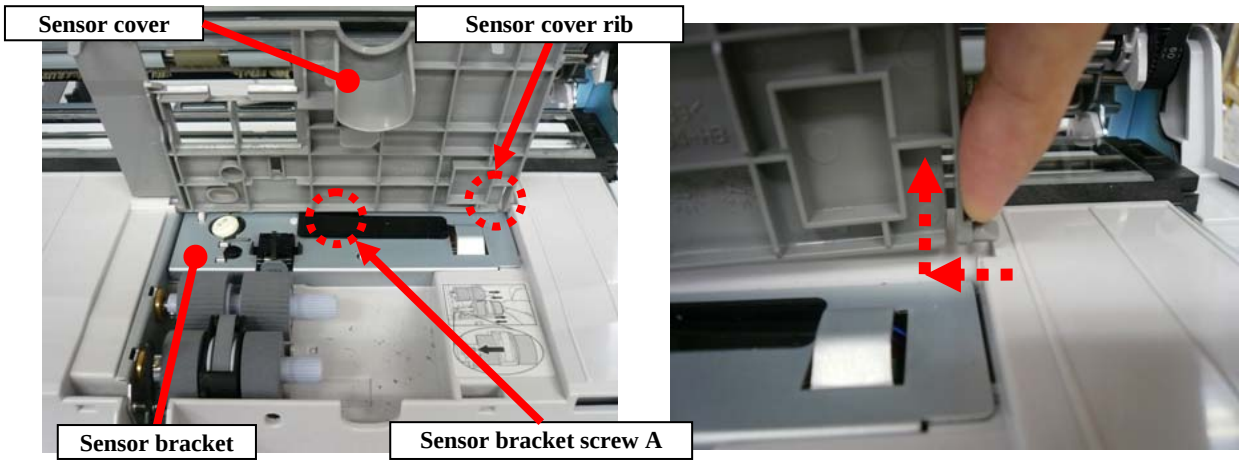
5.10.2 Pick Sensor

NOTICE

Refer to Section 3.9 for the specification of the Pick Sensor.

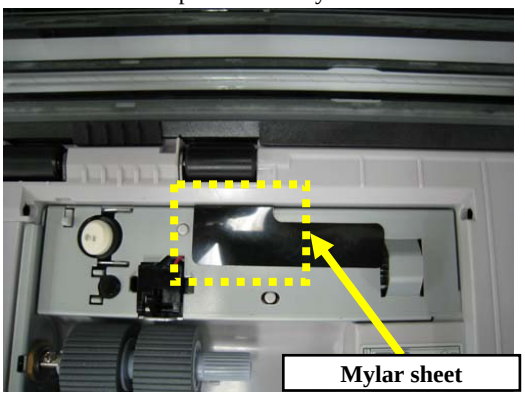
<Removal>

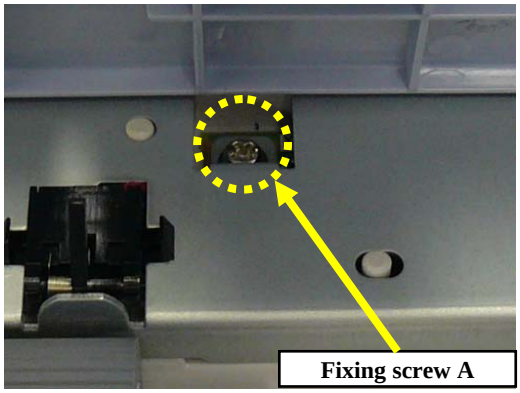
(1) Open the ADF, open the Sensor cover, and then bow the sensor cover rib to remove the sensor cover.



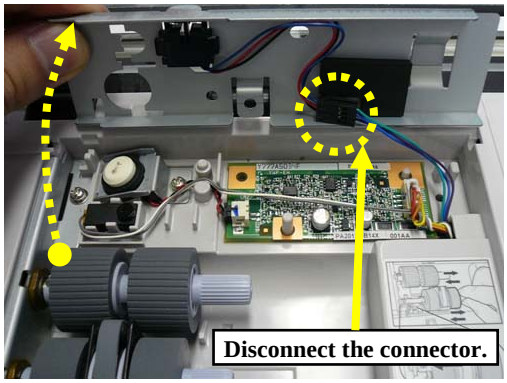
(2) Tuck up the Mylar sheet pasted on the sensor bracket, and then remove the screw A.

Note: Do NOT peel off the Mylar sheet.

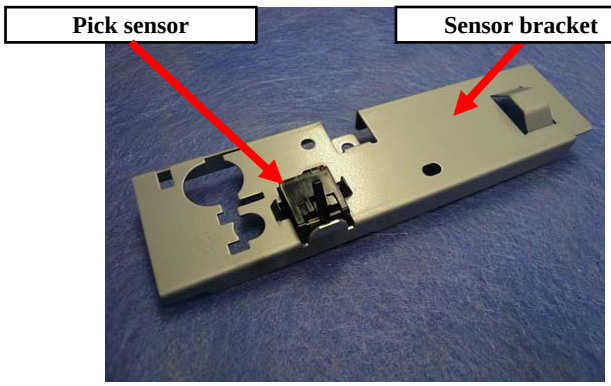


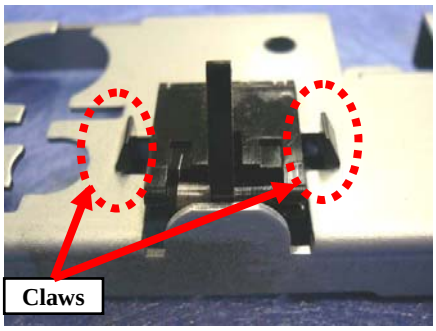


(3) Turn the Sensor bracket over, and disconnect the connector to remove the Sensor bracket.



(4) Unlatch the Pick sensor claws from the sensor bracket, and then detach the Pick Sensor.



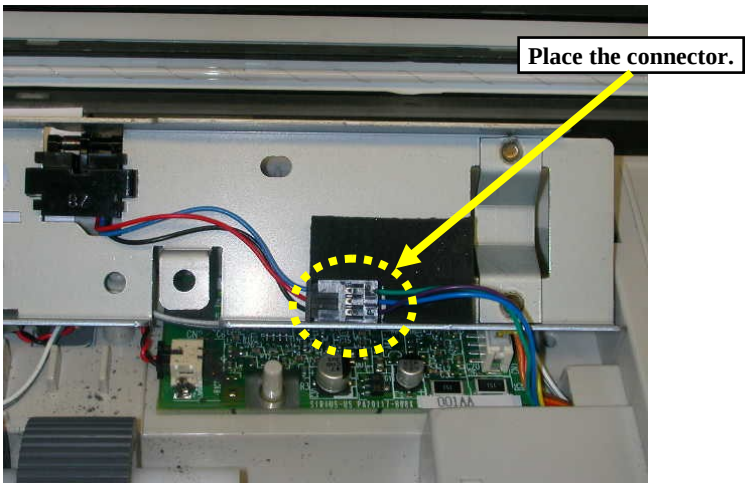


<Installation>

Follow the above procedure in reverse.

Notes:

1. Make sure that the Pick sensor claws are latched on the bracket firmly.
2. Place the connector at the position of the sensor bracket as shown in the photo below.



5.10.3 US Sensor (ADF Fix Unit)

NOTICE

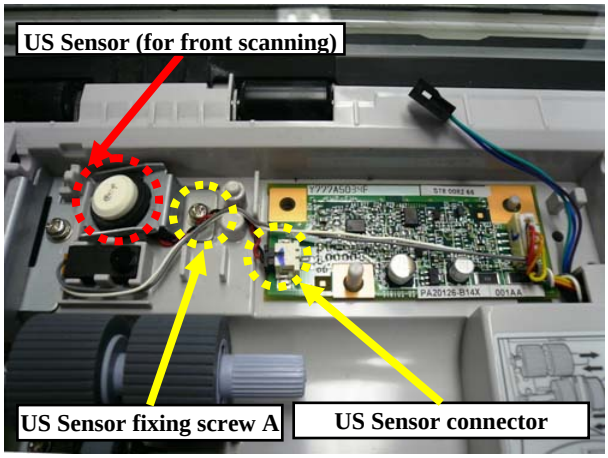
Refer to Section 3.6 for the part number of the US Sensor.

<Removal>

(1) Remove the Sensor bracket by referring to steps (1) ~ (3) of Section 5.10.2.

(2) Disconnect the US sensor connector from the US PCA.

(3) Remove the screw A that secures the US sensor, and then remove the bracket and the US sensor. Remove the sensor from the bracket.

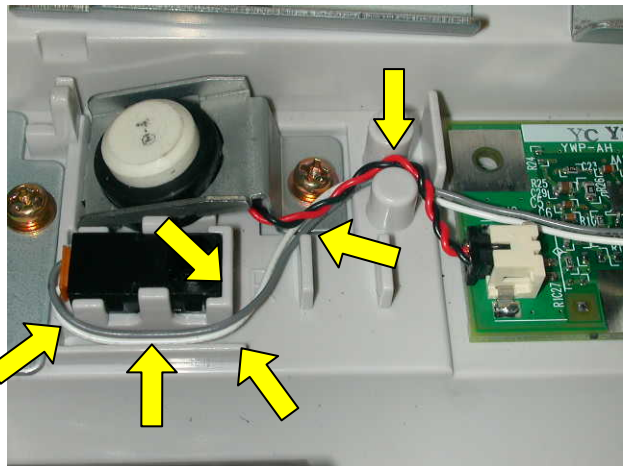


<Installation>

Follow the above procedure in reverse.

Notes:

1. After replacing the US Sensor, perform the Ultrasonic sensor adjustment (Section 6.1.9).
2. Place the cables as shown in the photo below.



3. Refer to <Installation> “Note 2” in Section 5.10.2 for installing the Sensor bracket.

5.10.4 US PCA

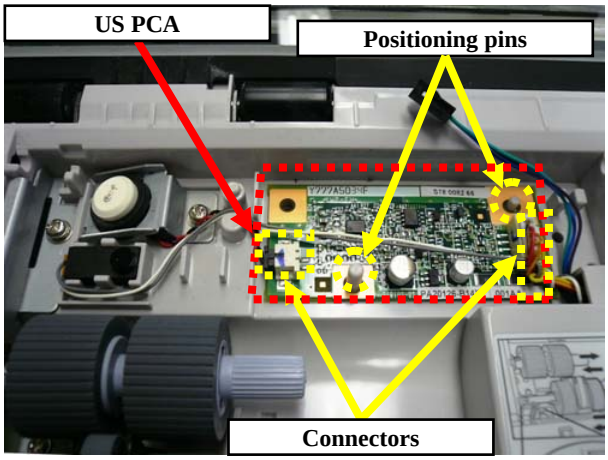
NOTICE

Refer to Section 3.7 for the part number of the US PCA.

<Removal>

(1) Remove the Sensor bracket by referring to steps (1) ~ (3) of Section 5.10.2.

(2) Disconnect the two connectors from the US PCA at the bottom of the Paper path, and remove the US PCA.



US PCA

<Installation>

Follow the above procedure in reverse.

Notes:

1. After replacing the US PCA, perform the Ultrasonic sensor adjustment (Section 6.1.9).
2. Make sure that the positioning pins are inserted in the holes of the US PCA.
3. Refer to <Installation> “Note 2” in Section 5.10.3 for the cable position.
4. Refer to <Installation> “Note 2” in Section 5.10.2 for installing the Sensor bracket.

5.10.5 Sensor (Empty Sensor)

NOTICE

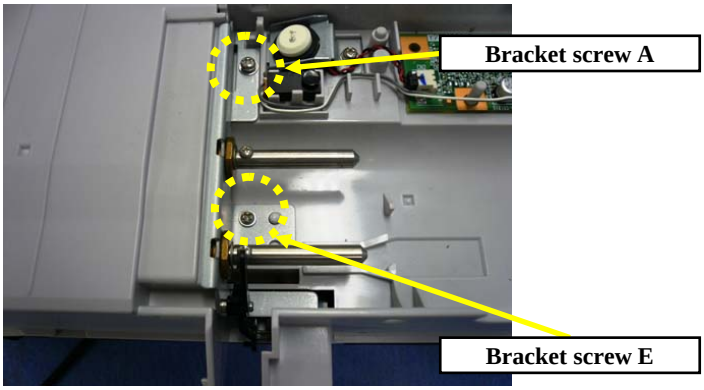
Refer to Section 3.8 for the part number of the Empty Sensor.

<Removal>

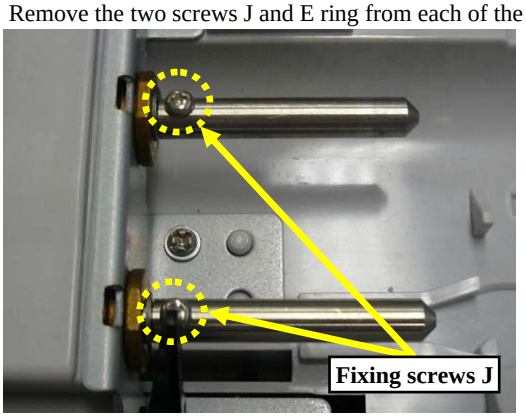
Note: A small Phillips screwdriver (for M2 screws) is required for replacing this part.

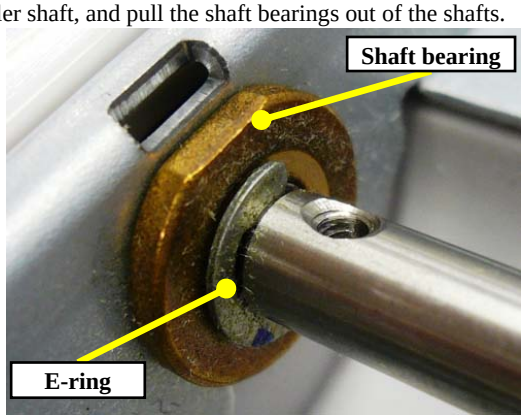
(1) Remove the Sensor bracket by referring to steps (1) ~ (3) of Section 5.10.2.

(2) Remove the screw A and the screw E that secure the bracket which holds the pick roller shaft.

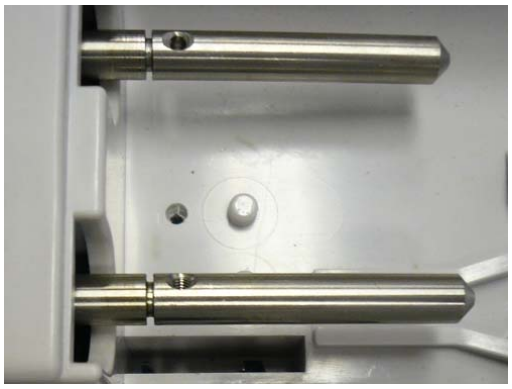


(3) Remove the two screws J and E ring from each of the pick roller shaft, and pull the shaft bearings out of the shafts.

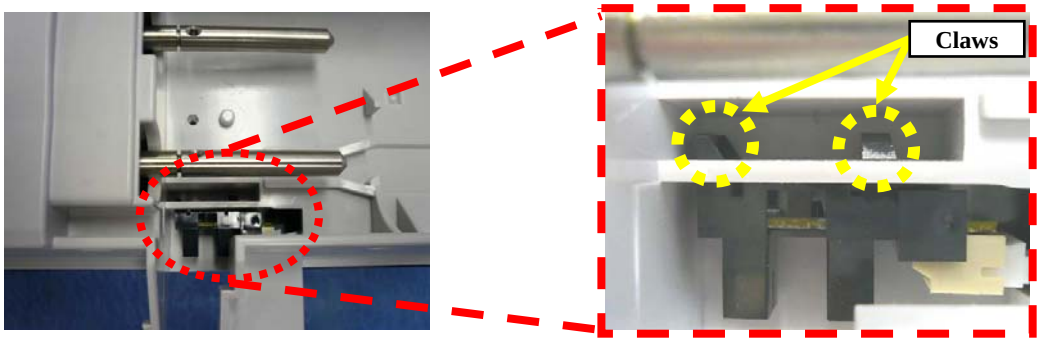




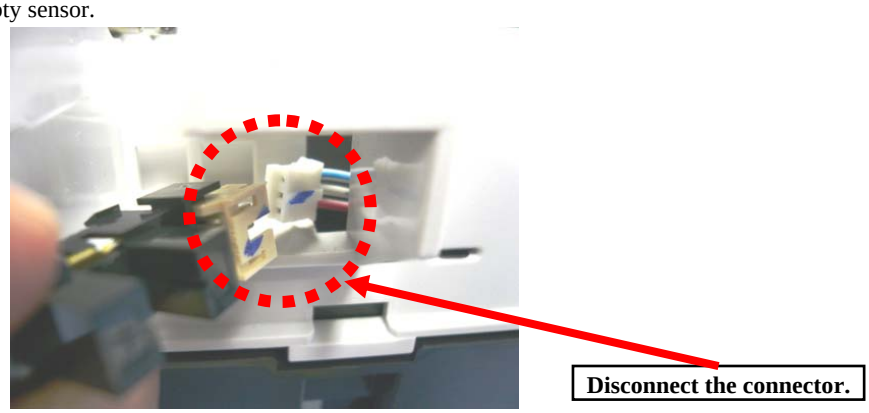
(4) Remove the bracket that supports the pick roller shafts.

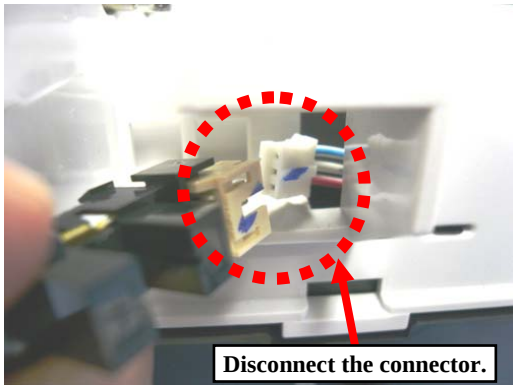


(5) Unlatch the Empty sensor claw using a small flat-blade screwdriver, and then remove the Empty sensor.



(6) Disconnect the cable from the empty sensor.





Sensor

<Installation>

Follow the above procedure in reverse.

5.10.6 US Sensor (ADF Rev Unit)

NOTICE

Refer to Section 3.6 for the part number of the US Sensor.

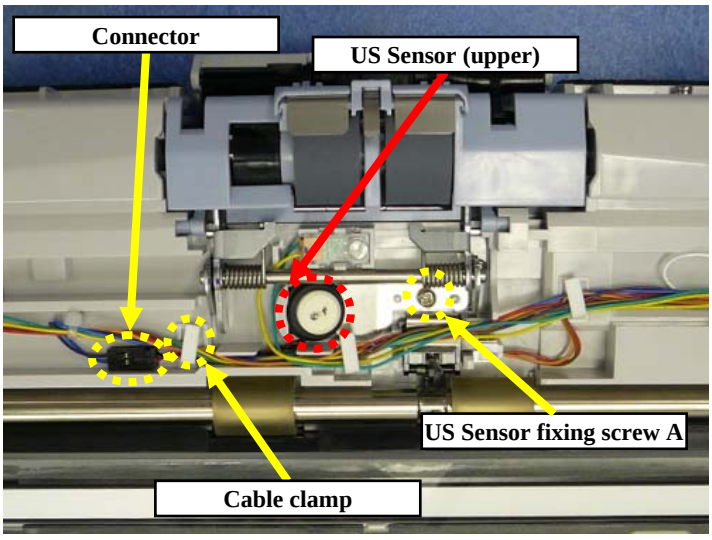
<Removal>

(1) Open the ADF, and remove the three screws A in the photos below to remove the upper Sheet guide.

Note: Be careful not to drop the upper Sheet guide when replacing it. Otherwise, the scanning glass may be damaged.

(2) Remove the US sensor (upper) cable from the cable clamp and disconnect its connector.

(3) Remove a screw A that secures the US sensor, the bracket and the US sensor.



US Sensor

<Installation>

Follow the above procedure in reverse.

Note: After replacing the US sensor, perform the Ultrasonic sensor adjustment (Section 6.1.9).

5.10.7 Top Sensor (ADF Rev Unit)

NOTICE

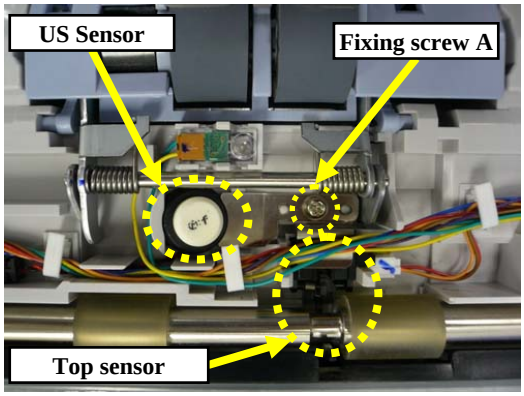
Refer to Section 3.18 for the specification of the replacement part.

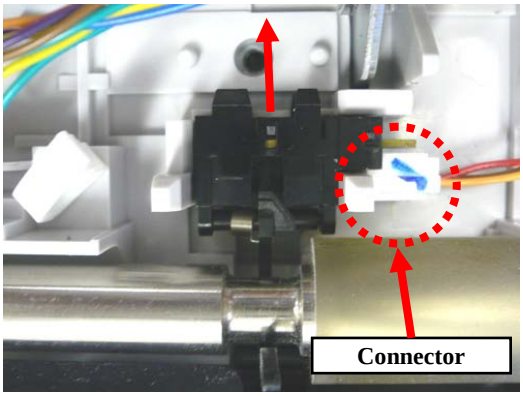
<Removal>

(1) Remove the upper Sheet guide by referring to step (1) in Section 5.10.6.

(2) Remove the screw A that secures the US sensor, and then remove the bracket.

(3) Remove the Top sensor, and disconnect the connector to remove the Top sensor.





<Installation>

Follow the above procedure in reverse.

Notes:

1. Make sure that the TOP sensor lever moves smoothly after installation.
2. After replacing the TOP sensor, perform offset adjustment (Section 6.1.4).

5.10.8 DF Sensor

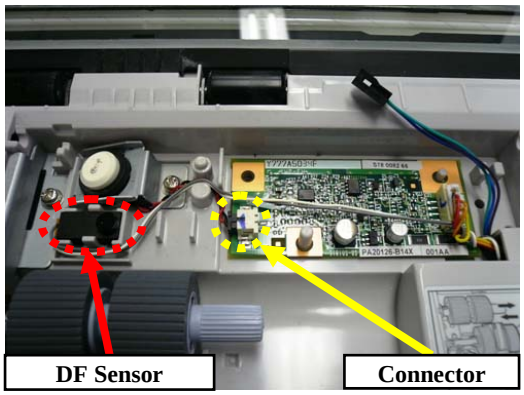
NOTICE

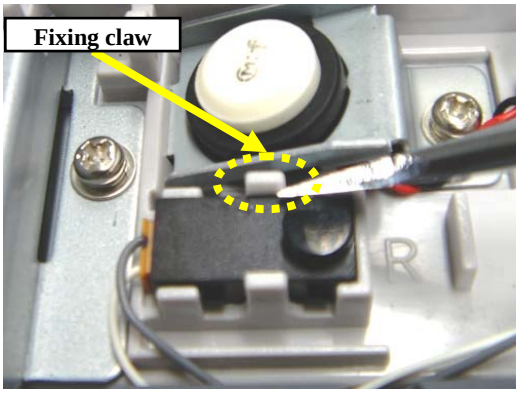
Refer to Section 3.10 for the part number of the DF Sensor.

<Removal>

Removing DF Sensor (black) on the ADF Fix Unit

(1) Remove the Sensor bracket by referring to steps (1) ~ (3) of Section 5.10.2.
(2) Disconnect teh lower DF sensor connector, unlatch the DF sensor claw, and remove the DF sensor (black).

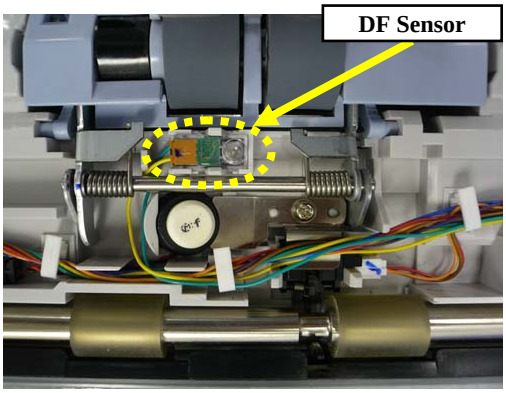


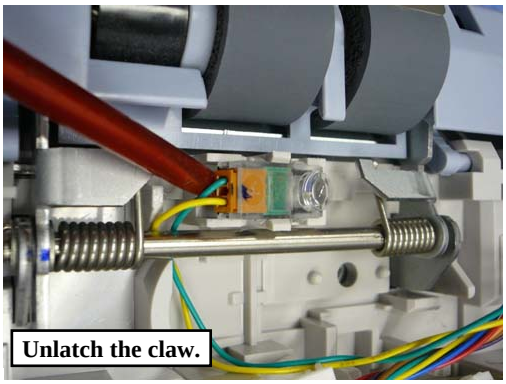


DF Sensor (black)
On the ADF Fix Unit

Removing DF Sensor (transparent) on the ADF Rev unit

(3) Remove the upper Sheet guide by referring to step (1) of Section 5.10.6.
(4) Disconnect the upper DF sensor connector, unlatch the DF sensor claw, and then remove the DF sensor (transparent).





DF Sensor (transparent)
On the ADF Rev Unit

<Installation>

Follow the above procedure in reverse.
The DF sensor consists of two parts; the DF sensor (on the ADF Fix unit) is black and the DF sensor (on the ADF Rev unit) is transparent. Do not confuse them when installing.

5.11 Parts in the ADF cover

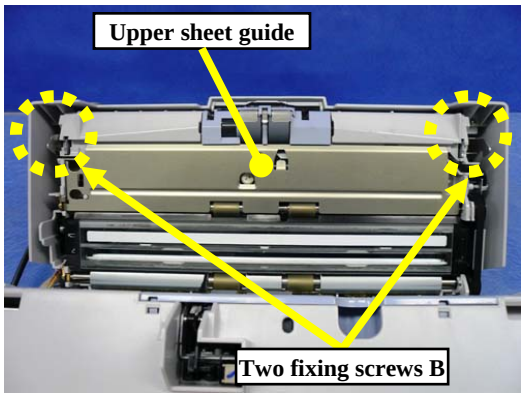
5.11.1 Inverter (backside optical system)

NOTICE

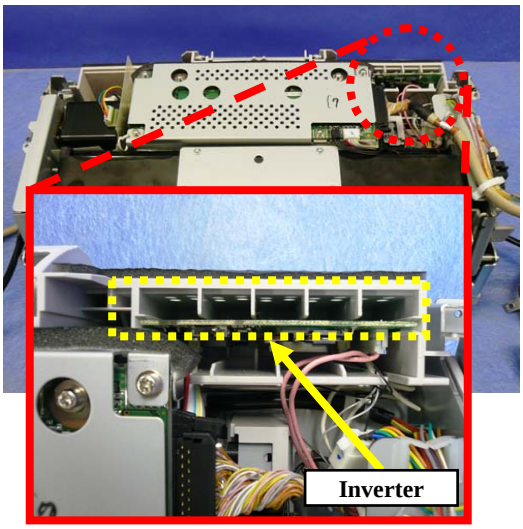
Refer to Section 3.5 for the part number of the Inverter.

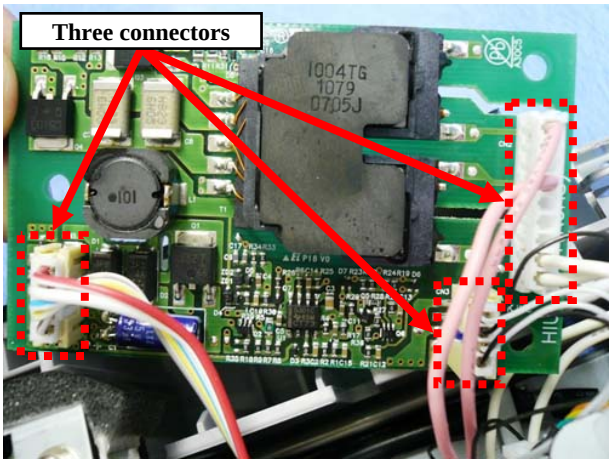
<Removal>

（1） Open the ADF and remove the two screws B that secure the ADF cover. Pull tout on he document exit side of the ADF cover to remove the ADF cover.



(2) Lifting up the Inverter from the groove, disconnect the three connectors connected on the Inverter, and remove the Inverter.





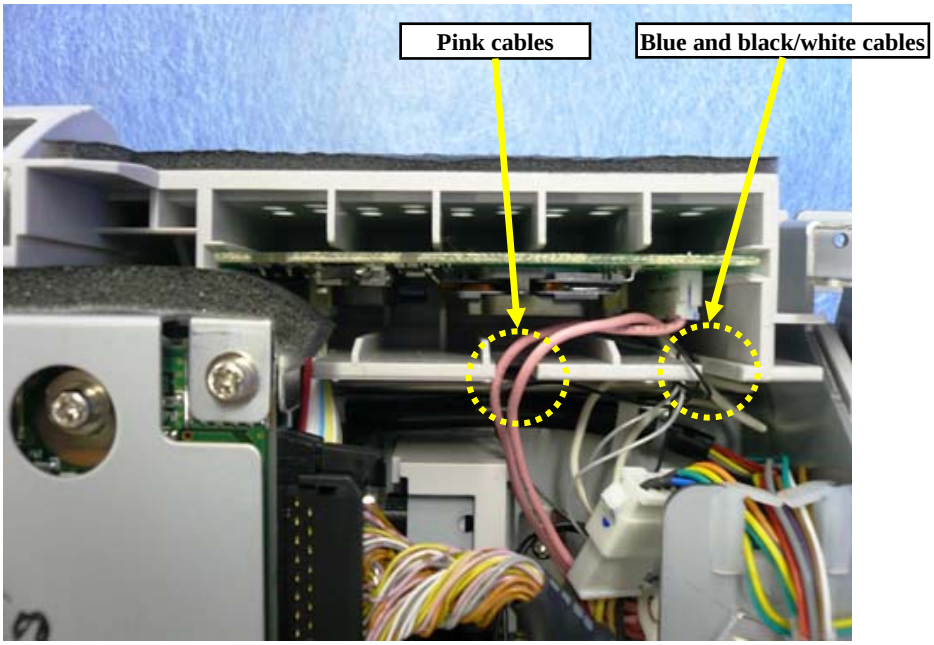
Inverter

<Installation>

Follow the above procedure in reverse.

NOTICE

Insert the pink and blue cables and the thin black/white cable to be connected to the Inverter into the respective grooves as shown below.

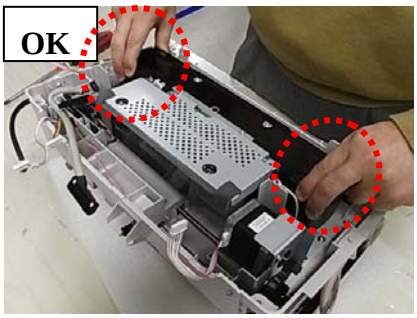


5.11.2 Optical Unit ADF (for backside scanning)

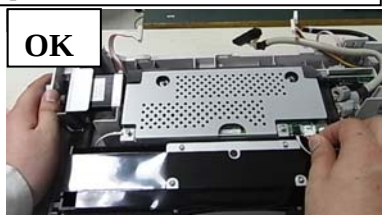
04

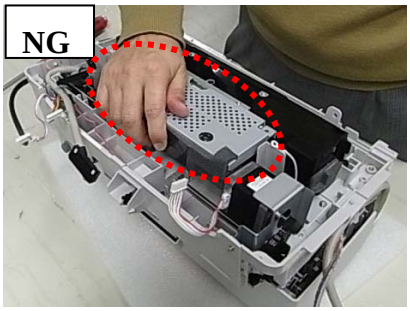
NOTICE

1) Refer to Section 3.20 for the part number of the Optical Unit ADF.
2) **When removing/installing the Optical Unit ADF, do not hold the CCD Unit or work by pressing it. Otherwise the Optical Unit ADF may be damaged or fail to operate properly.**

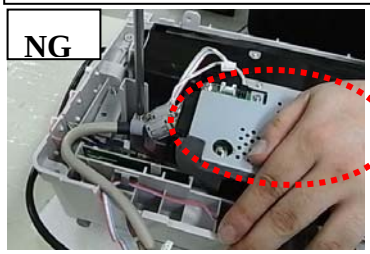


[Appropriate handling]
Hold the right and left edges (black parts) of the Optical Unit ADF or the scanner frame to remove / install the Optical Unit ADF.



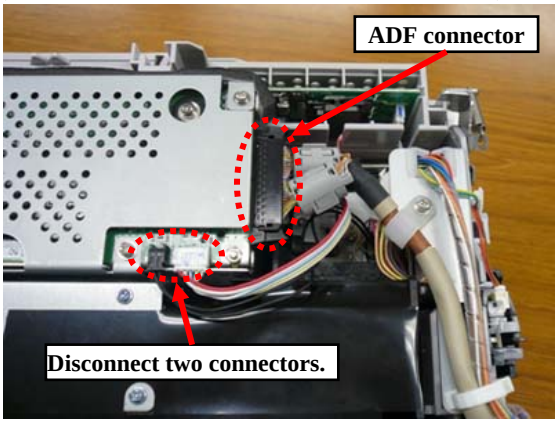


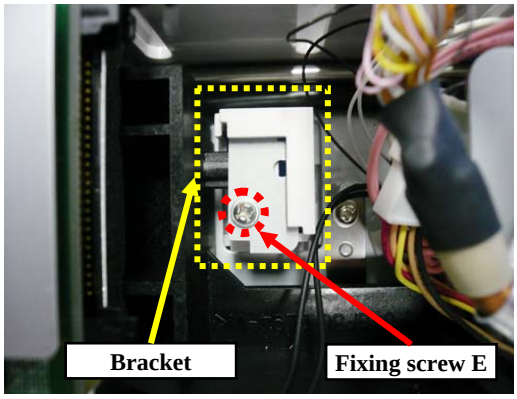
[Inappropriate handing]
Do not hold the CCD Unit on the Optical Unit ADF when removing / installing the Optical Unit ADF. Do not press the CCD Unit as well.



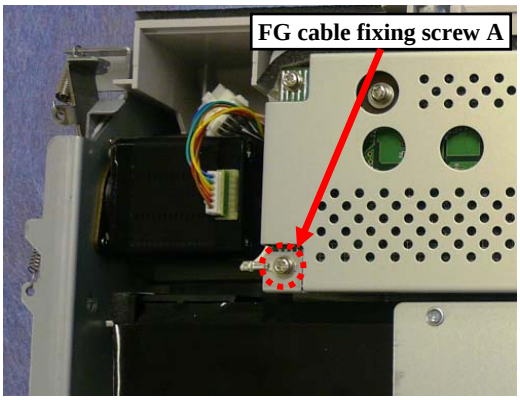
<Removal>

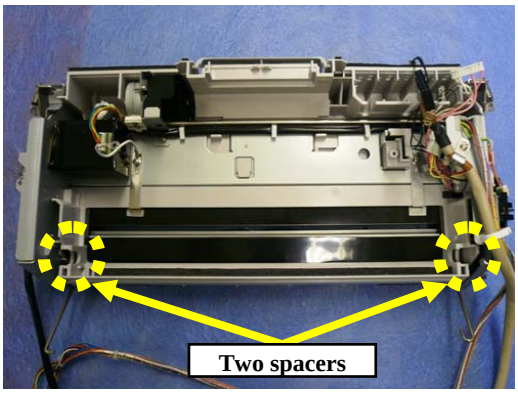
(1) Remove the ADF cover by referring to step (1) in Section 5.11.1.
(2) Disconnect the one large and the two small connectors from the Optical unit ADF.
(3) Remove the screw E which secures the bracket (lower right photo) to remove the bracket.

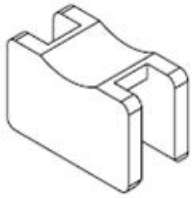




(4) Remove the screw A for the FG Cable on the Optical unit ADF, and lift the Optical unit ADF out of the ADF Rev unit.
Note: When removing the Optical unit ADF (for backside scanning), do not lose two spacers at the positions in the photo lower right. If you lost them, use “OPT SPACER B” enclosed with the Optical unit ADF.







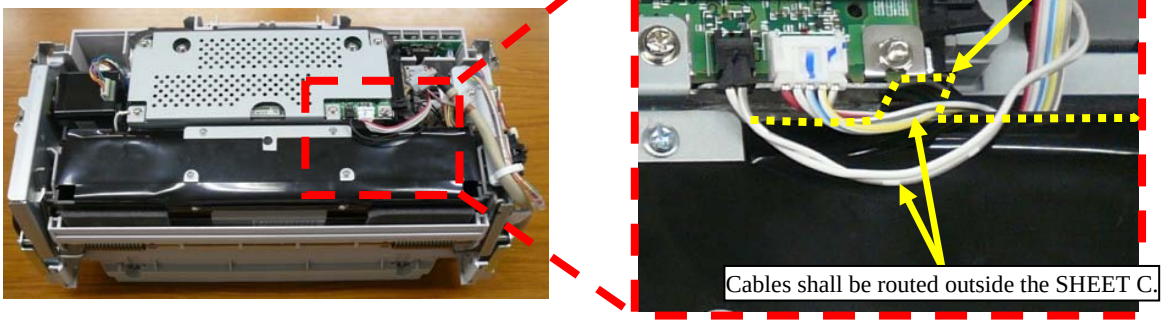
Spacer

<Installation>

Follow the above procedure in reverse.

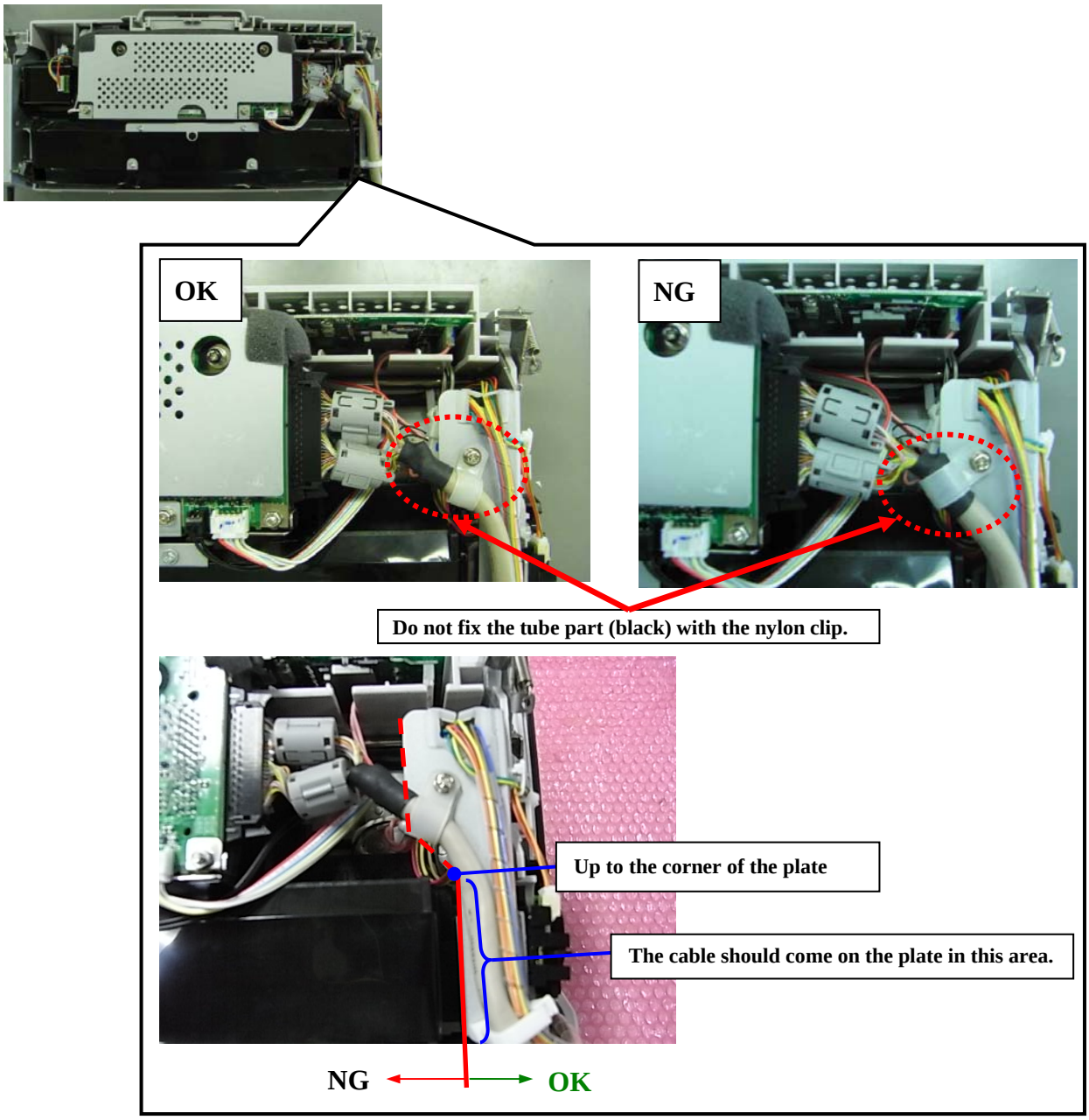
NOTICE

1) Be careful not to touch the mirror on the Optical unit ADF.
2) After replacing the Optical unit ADF, perform the Offset adjustment (Section 6.1.4) and White level adjustment (Section 6.1.5).
3) Route the Inverter cable and thermistor cable outside the SHEET C so that they do not touch the metal part of the Optical unit ADF.



04

4) Make sure that the nylon clip fixing position and wiring is as shown in the photo below when installing the ADF Cable (connector).



5.11.3 BW Motor (for driving pick arm) / Sensor (for detecting pick arm position)

NOTICE

Refer to the following sections for the part number of the replacement parts.

BW motor: Section 3.14

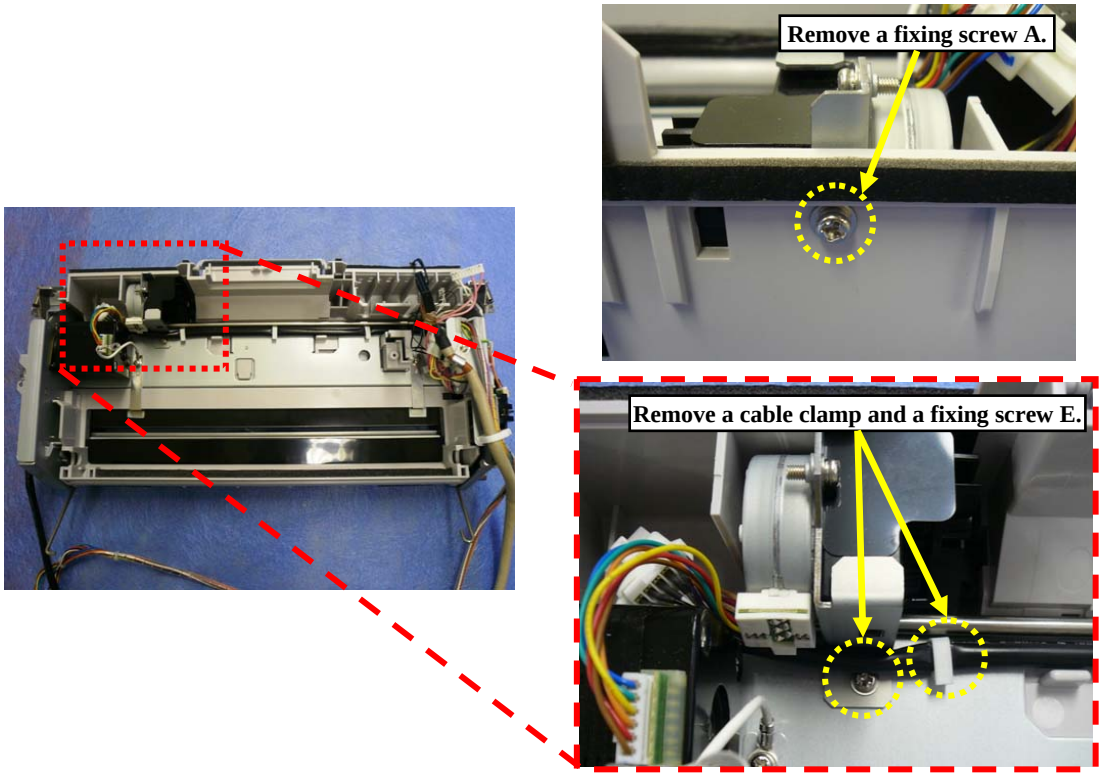
Sensor: Section 3.8

<Removal>

(1) Remove the ADF cover by referring to step (1) in Section 5.11.1.

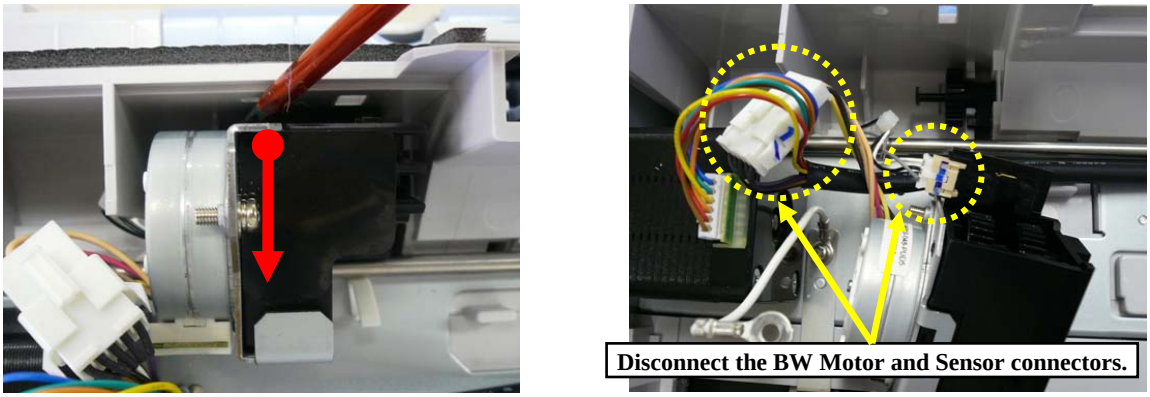
(2) Remove the Optical unit ADF by referring to steps (2) ~ (4) in Section 5.11.2.

(3) Remove the cable from the cable clamp, and then remove the fixing screw A and the screw E.



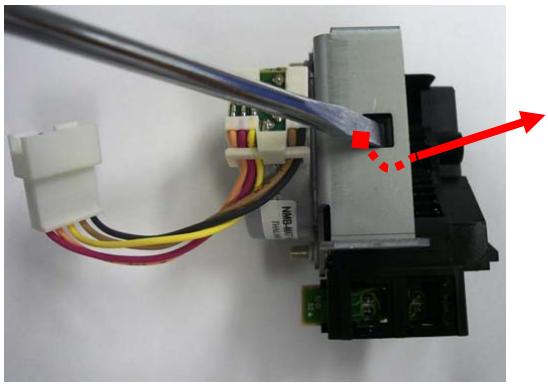
(4) Inserting a small flat-blade screwdriver into the gap between the frame and gearbox, release the gearbox from the frame.

(5) Disconnect the connectors of the BW motor and the sensor, and then remove the assembly of BW motor and the gear.



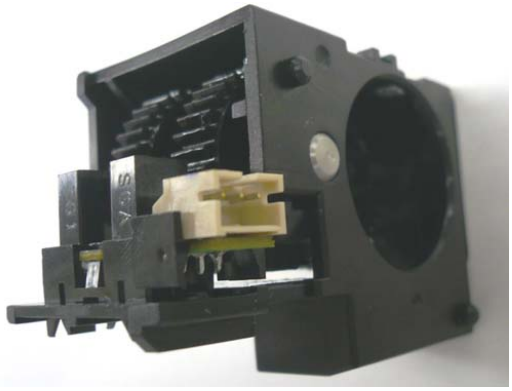
<Replacing BW motor>

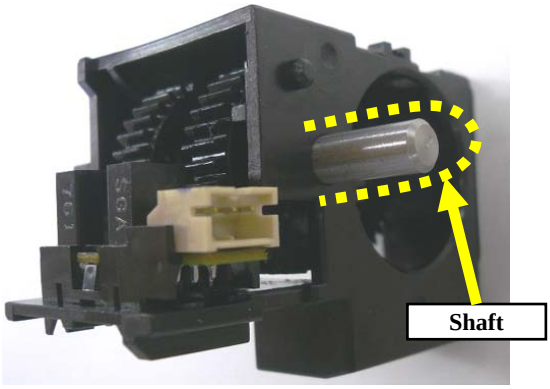
(6) Using a small flat-blade screwdriver, release the BW motor claw to remove the gearbox.



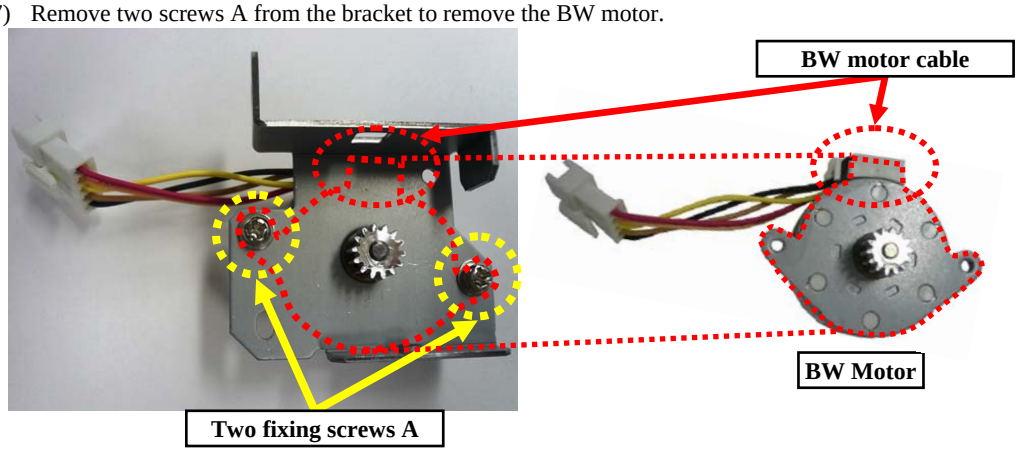
NOTICE

Make sure that the shaft does not come off the gearbox and fall off. (See photos below.)





(7) Remove two screws A from the bracket to remove the BW motor.



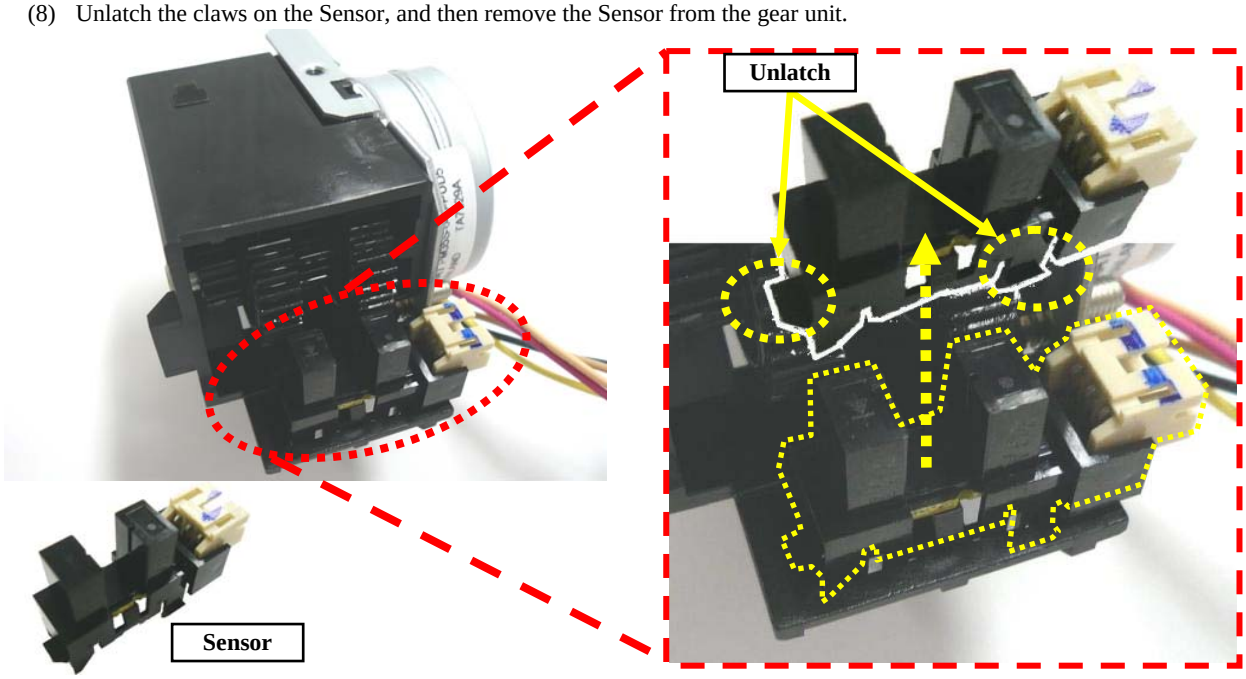
<Installation>

Follow the above procedure in reverse.

<Replacing Pick Arm Sensor>

Follow the procedure below after step (5).

(8) Unlatch the claws on the Sensor, and then remove the Sensor from the gear unit.

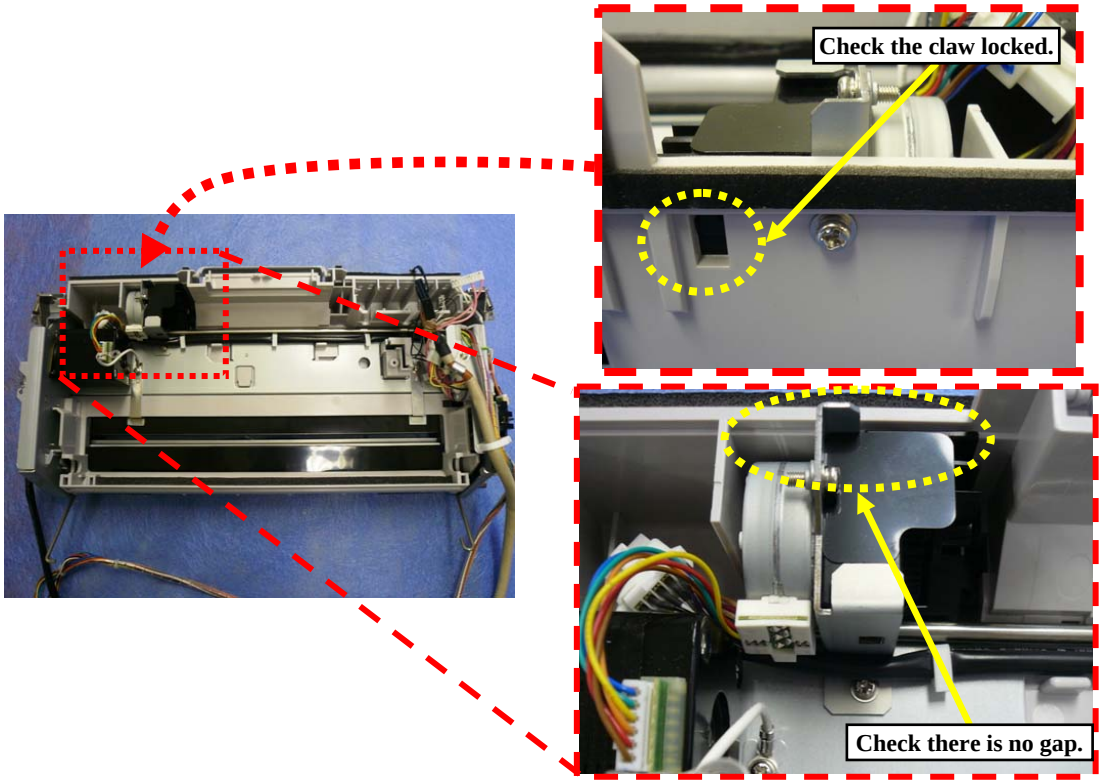


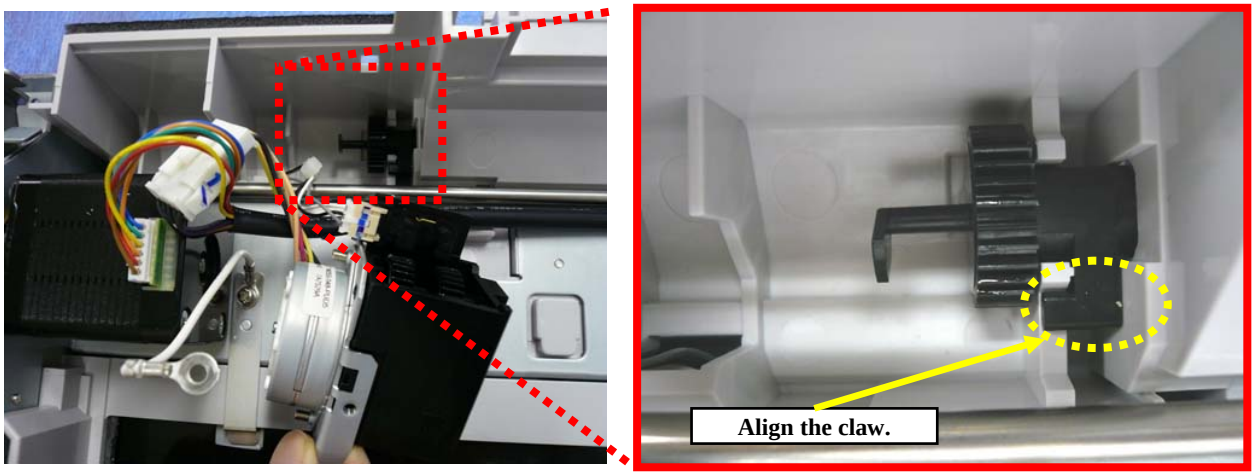
<Installation>

Follow the above procedure in reverse.

NOTICE

1. Be careful not to pinch any cables.
2. Make sure that the claw is securely locked and there is no gap between the arm unit and the frame.
3. When installing the frame and gear box, align the claw of the gear part for the Pick arm sensor arm with the frame. Otherwise, the parts may be damaged.





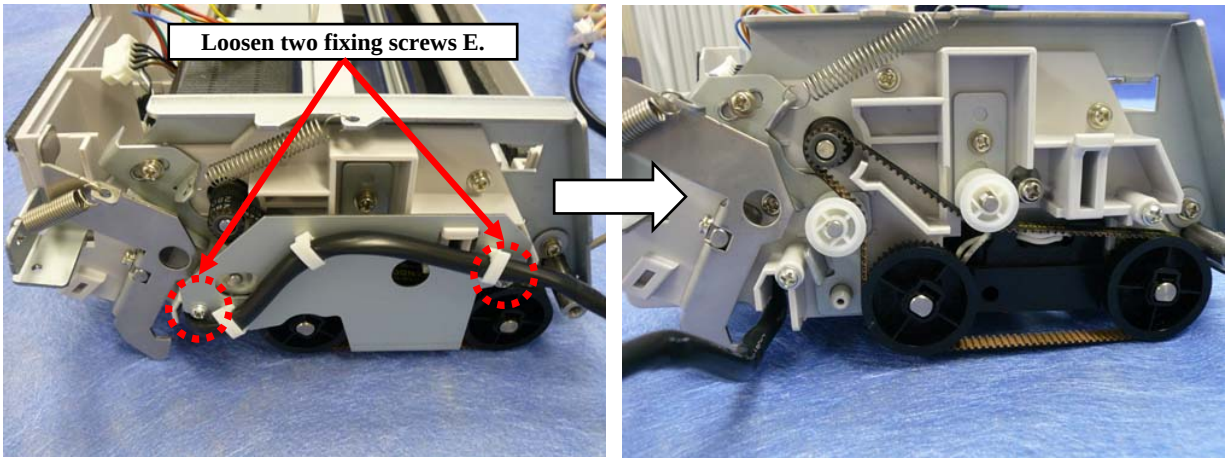
5.11.4 Feed Motor / Belt ADF

NOTICE

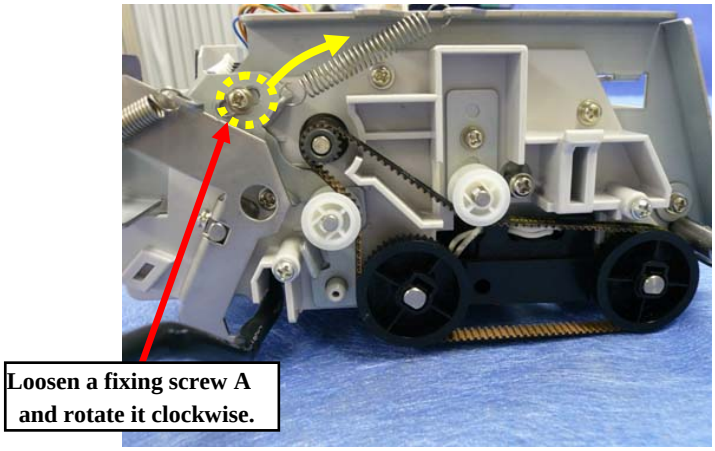
Refer to the following sections for the part numbers of the replacement parts.
Feed motor: Section 3.16
Belt ADF: Section 3.17

<Removal>

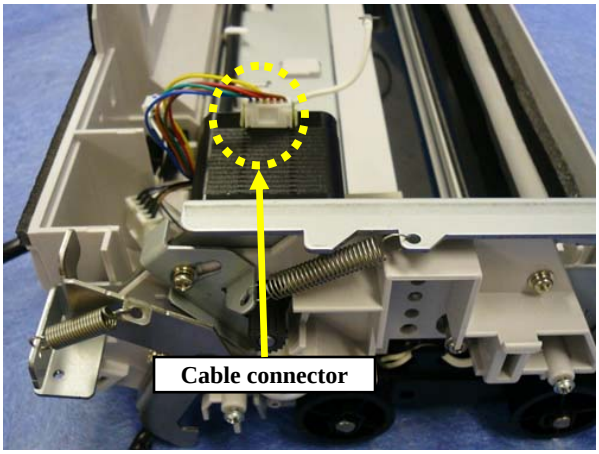
(1) Remove the ADF cover by referring to step (1) in Section 5.11.1.
(2) Referring to steps (2) ~ (4) in Section 5.11.2, remove the Optical unit ADF.
(3) Loosen two screws E that secure the Belt ADF cover (no need to remove) and move the cover out of the way.

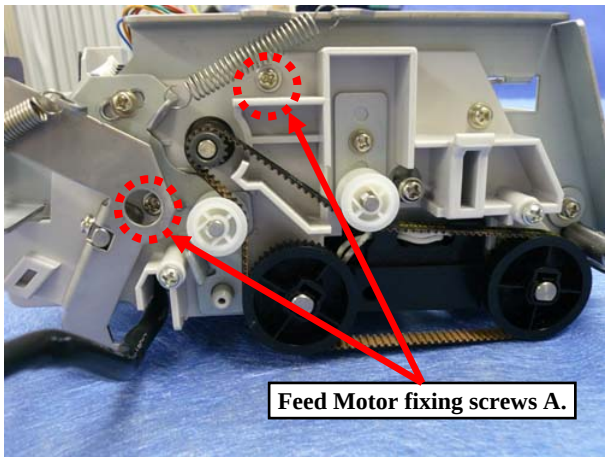


(4) Loosen the tension bracket screw A, and rotate the bracket clockwise to loosen the belt tension. Remove the Belt ADF when replacement is necessary.



(5) Disconnect the cable from the Feed motor. Remove the two screws A that secure the Feed motor to remove.



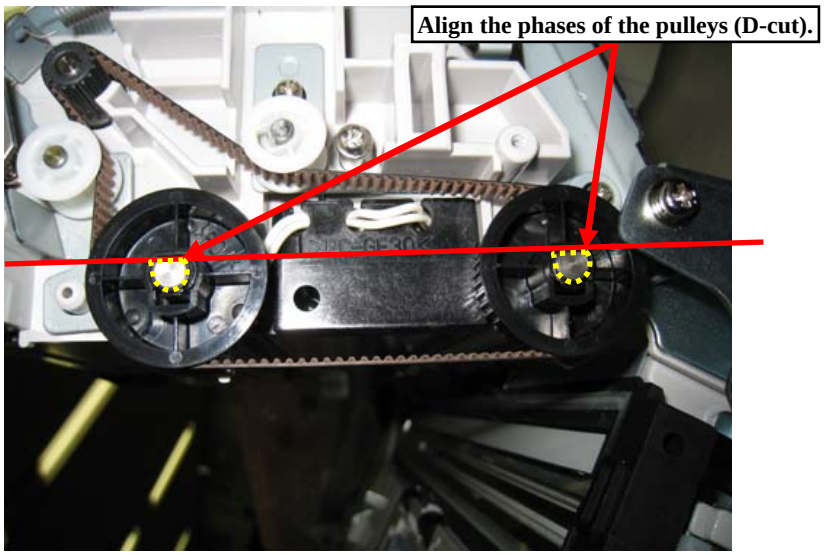


<Installation>

Follow the above procedure in reverse.

NOTICE

1. When installing the Belt ADF, align the phases of the pulleys (D-cut) as shown below.



2. Make sure that the cover is hung on the hook when installing the Belt ADF cover.
3. After replacing the Feed motor or Belt ADF, perform the sub-scanning magnification adjustment (Section 6.1.3) and offset adjustment (Section 6.1.4).

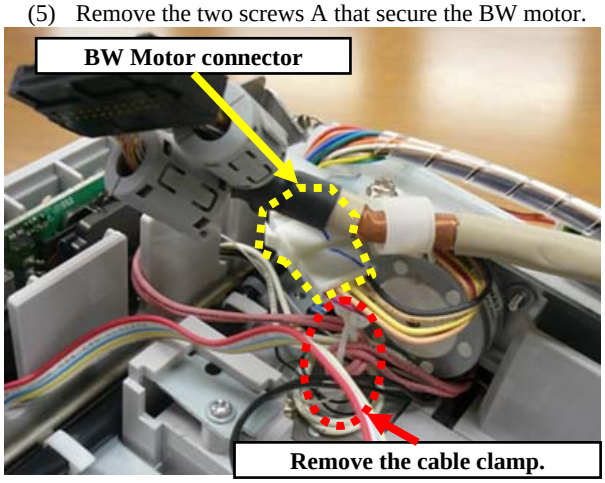
5.11.5 BW Motor (for driving background switch mechanism)

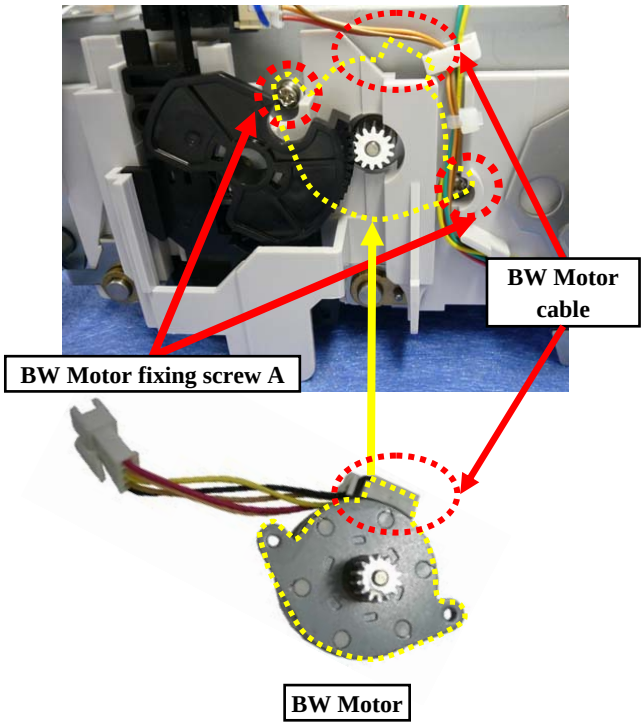
NOTICE

Refer to Section 3.14 for the part number of the BW Motor.

<Removal>

(1) Remove the ADF cover by referring to step (1) in Section 5.11.1.
(2) Remove the Optical unit ADF by referring to steps (2) ~ (4) in Section 5.11.2.
(3) Remove the cables from the cable clamp behind the motor.
(4) Disconnect the connector from the BW motor.
(5) Remove the two screws A that secure the BW motor.





<Installation>

Follow the above procedure in reverse.

NOTICE

When installing the BW motor, pay attention to the cable positions.

5.11.6 Sensor (for detecting background position)

NOTICE

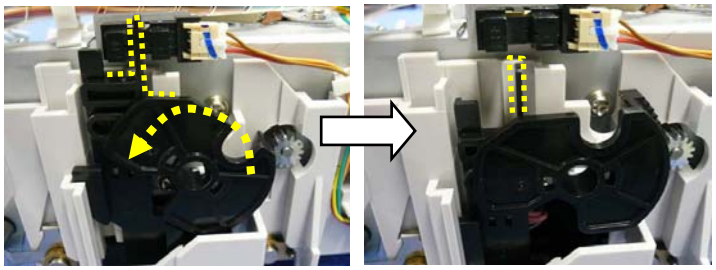
Refer to Section 3.8 for the part number of the Sensor.

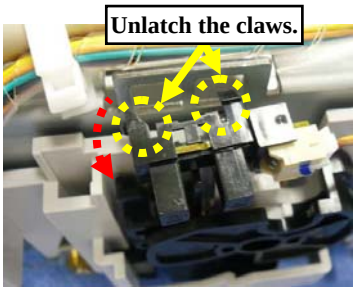
<Removal>

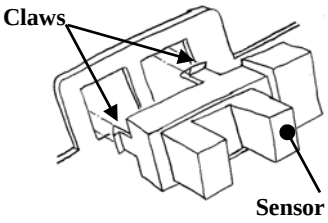
(1) Remove the ADF cover by referring to step (1) in Section 5.11.1.

(2) Rotate the large gear counterclockwise, and then lower the arm below the Sensor position.

(3) Disconnect the cable connected to the Sensor and unlatch the claws of the Sensor to remove the Sensor.







<Installation>

Follow the above procedure in reverse.

5.11.7 Sensor OP

NOTICE

Refer to Section 3.19 for the part number of the Sensor OP.

<Removal>

(1) Remove the upper Sheet guide by referring to step (1) in Section 5.10.6.

NOTICE

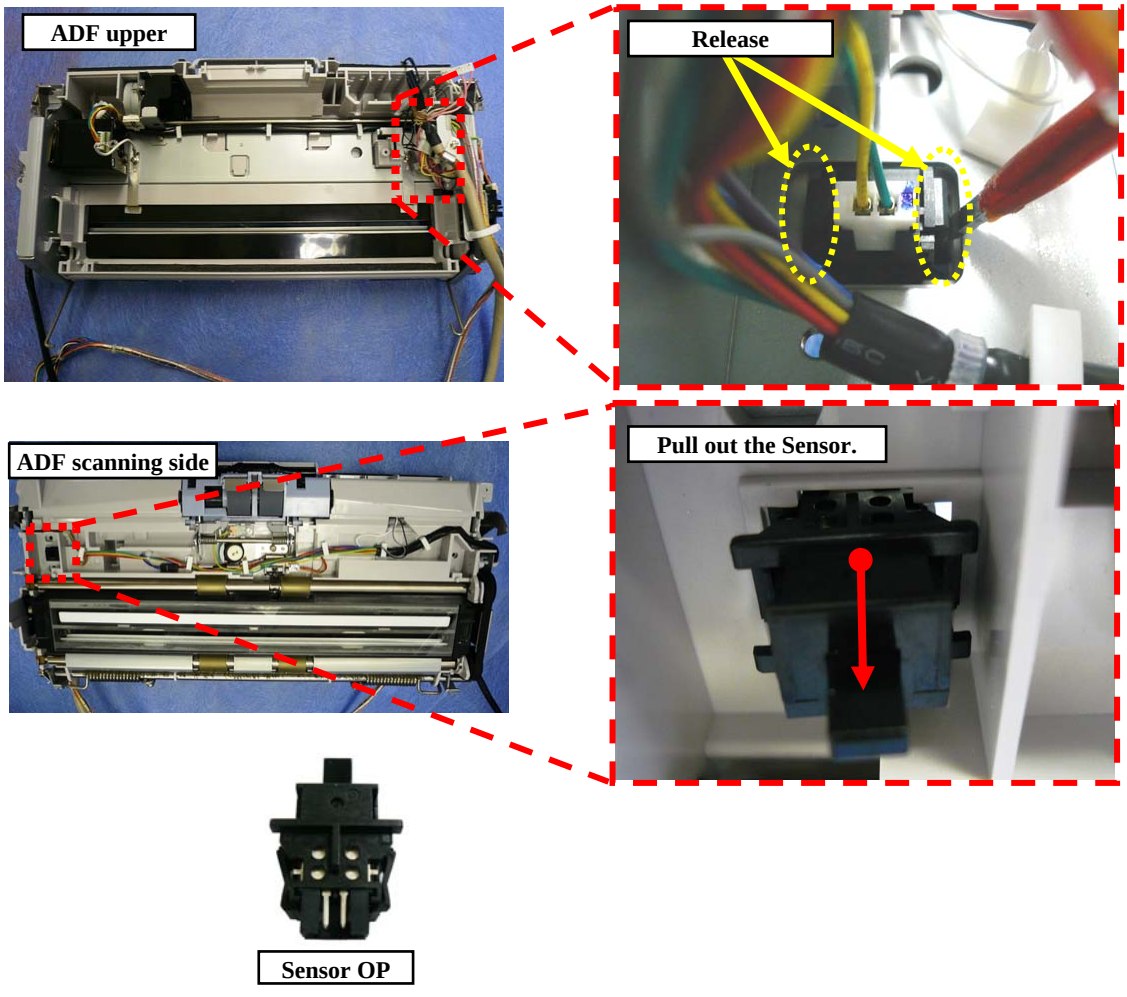
Be careful not to drop the upper Sheet guide when removing/installing it. It may break the glass at the scanning position.

(2) Remove the ADF cover by referring to steps (1) and (2) in Section 5.11.1.

(3) Remove the Optical Unit ADF by referring to Section 5.11.2.

(4) From above the sensor, insert a small flat-blade screwdriver into both spaces on each side of the Sensor OP to release it from the frame.

(5) Pull out the Sensor OP from the ADF scanning side, disconnect the connector from the Sensor OP, and then remove the Sensor OP.



<Installation>

Follow the above procedure in reverse.

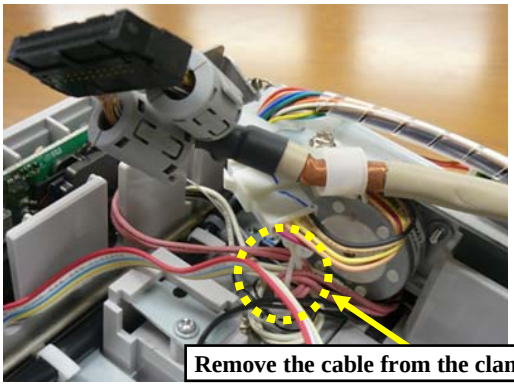
5.11.8 Background Unit B / Background Unit BS

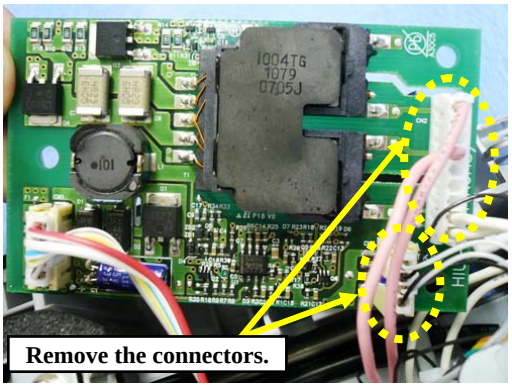
NOTICE

1) Refer to Section 3.4 for the part number of the Background Unit B/BS.
2) The Background unit B includes the lamp for backside scanning and the background for front side scanning.
3) The Background unit BS includes the background for front side scanning only. No lamp and cable are included.

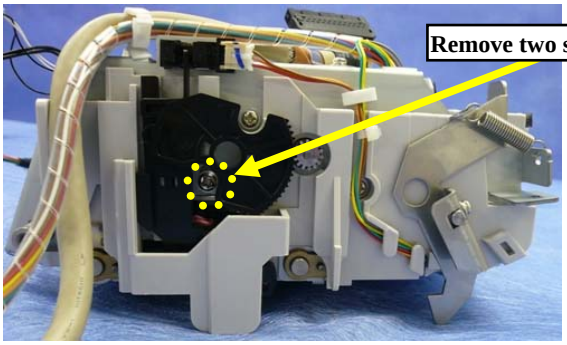
<Removal of Background Unit B>

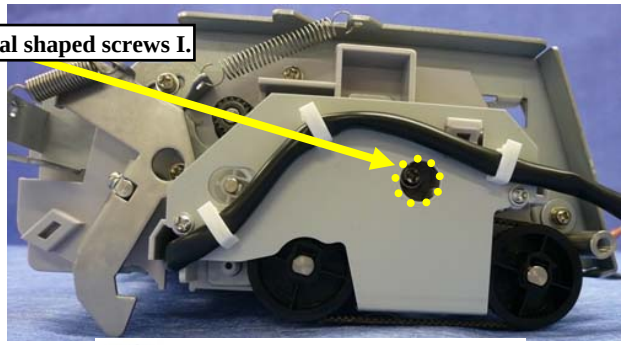
(1) Remove the ADF cover by referring to step (1) in Section 5.11.1.
(2) Remove the Optical unit ADF by referring to steps (2) ~ (4) in Section 5.11.2.
(3) Remove the cables from cable clamp (photo below on left).
(4) Remove two connectors from the Inverter.

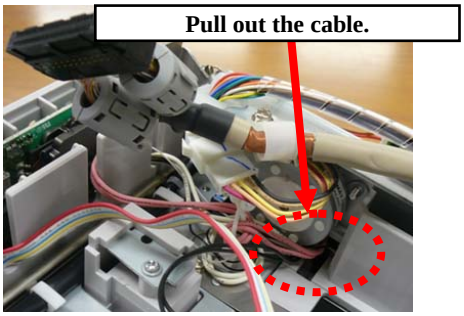




(5) Remove the screws I (special-shaped) from the left and right side plates of the ADF, and remove the Background unit B by pulling the cables out of the frame hole. Be careful not to drop the screws.





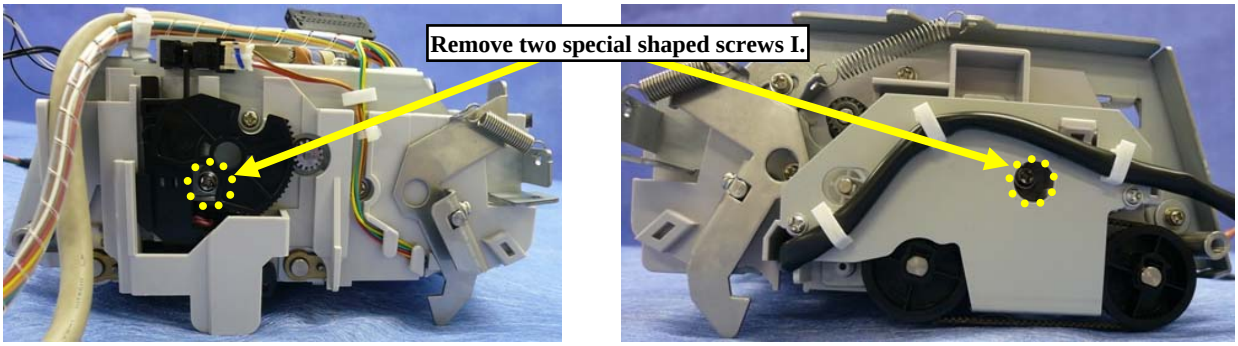


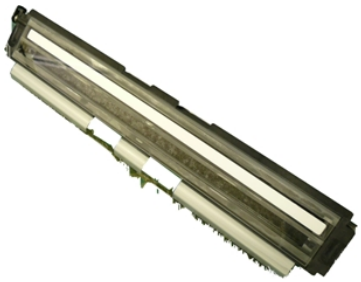
<Removal of Background Unit BS>

(1) Remove the ADF cover by referring to step (1) in Section 5.11.1.

(2) Remove the Optical unit ADF by referring to steps (2) ~ (4) in Section 5.11.2.

(3) Remove the screws I (special-shaped) from the left and right side plates of the ADF, and remove the Background unit BS by pulling the cables out of the frame hole. Be careful not to drop the screws.





Back ground unit BS

The Background unit BS includes the background for front side scanning. No lamp and cable are included.

<Installation>

Follow the above procedure in reverse.

NOTICE

1) Be sure to route the cables of the Background unit B/BS into the original frame hole.
2) If the Background unit B/BS is installed appropriately, it moves up and down slightly (approx. 1mm).
3) After replacing the Background unit B/BS, perform the Offset adjustment (Section 6.1.4) and White level adjustment (Section 6.1.5).

5.12 Parts in lower parts of the ADF

5.12.1 ADF Junction PCA

NOTICE

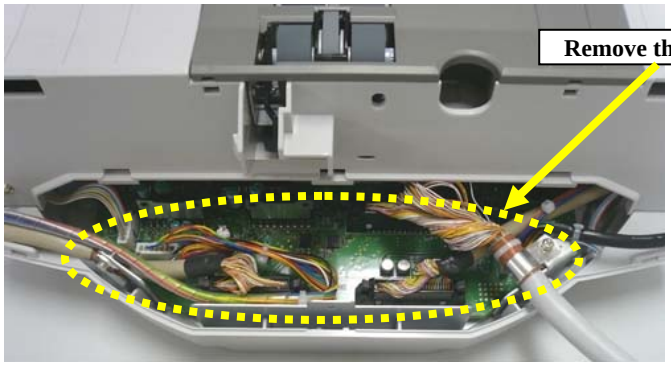
Refer to section 3.15 for the part number of the ADF Junction PCA.

<Removal>

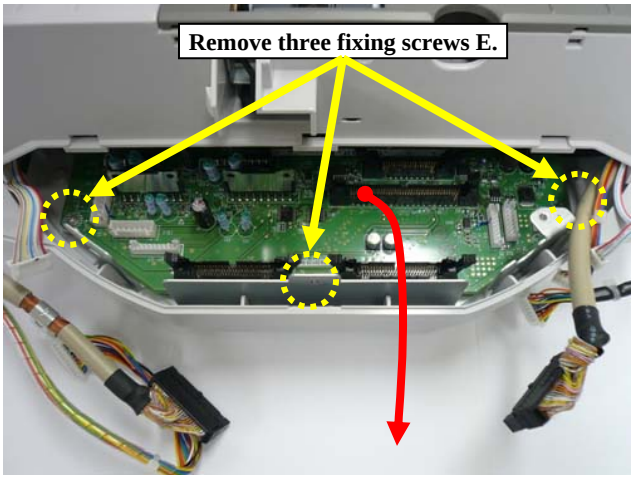
(1) Remove the front cover of the ADF unit by referring to steps (1) ~ (7) of the section 5.9.

(2) Remove the screws A that connect the ADF cable and disconnect the ADF cable from the ADF unit.

(3) Disconnect the eight cable connectors from the ADF unit.



(4) Remove the three screws E that secure the ADF junction PCA to remove the ADF junction PCA.



ADF Junction PCA

<Installation>

Follow the above procedure in reverse.

NOTICE

Be careful not to pinch any cables when installing the ADF Junction PCA.

5.12.2 Optical Unit ADF (for front side scanning)

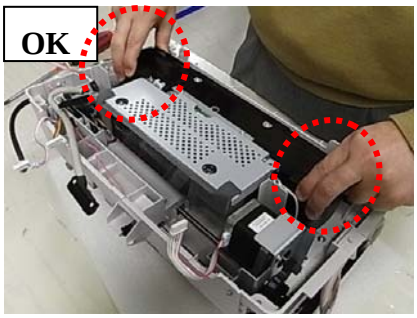
04

NOTICE

1) Refer to section 3.20 for the part number of the Optical Unit ADF.

2) **When removing/installing the Optical Unit ADF, do not hold the CCD Unit or work by pressing it. Otherwise the Optical Unit ADF may be damaged or fail to operate properly.**

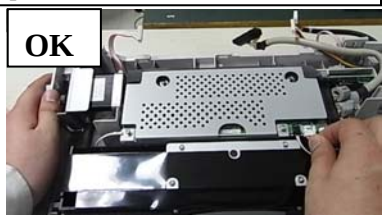
OK



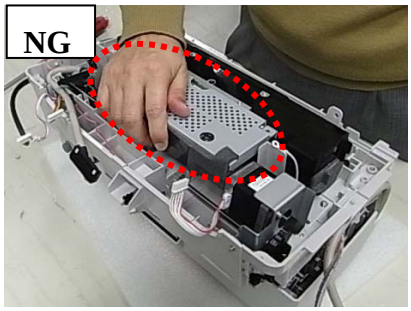
[Appropriate handling]
Hold the right and left edges (black parts) of the Optical Unit ADF or the scanner frame to remove / install the Optical Unit ADF.

OK

OK

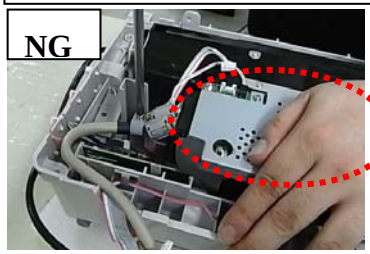


NG



[Inappropriate handing]
Do not hold the CCD Unit on the Optical Unit ADF when removing / installing the Optical Unit ADF. Do not press the CCD Unit as well.

NG

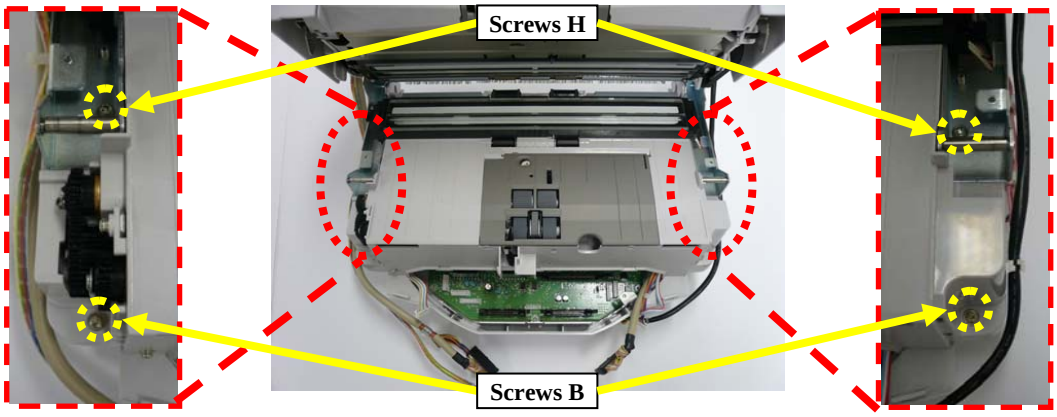


<Removal>

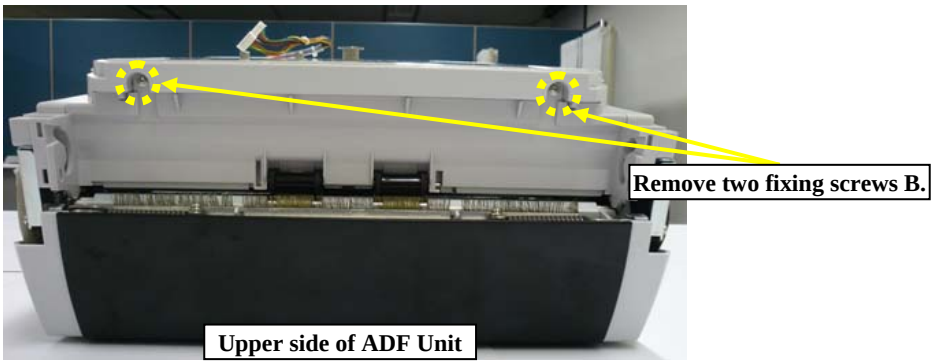
(1) Remove the ADF unit from the frame by referring to Section 5.9.1.

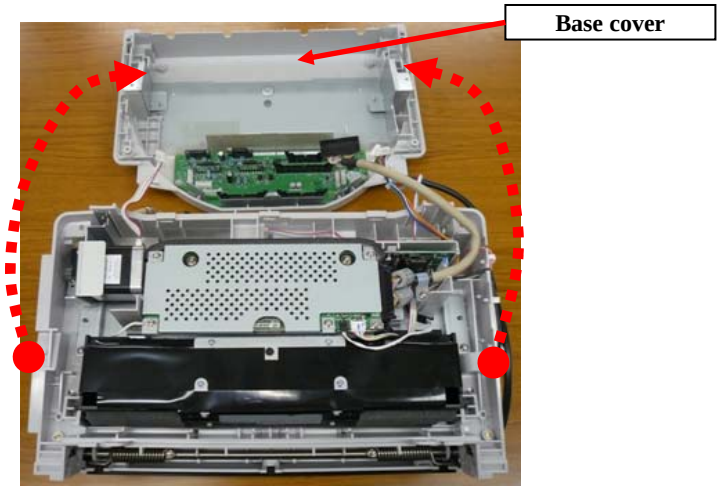
(2) Remove the cable and eight connectors from the ADF junction PCA by referring to step (2) ~ (3) in Section 5.12.1.

(3) Remove the two screws B at the front side of the ADF unit and the two screws H on the Paper path.

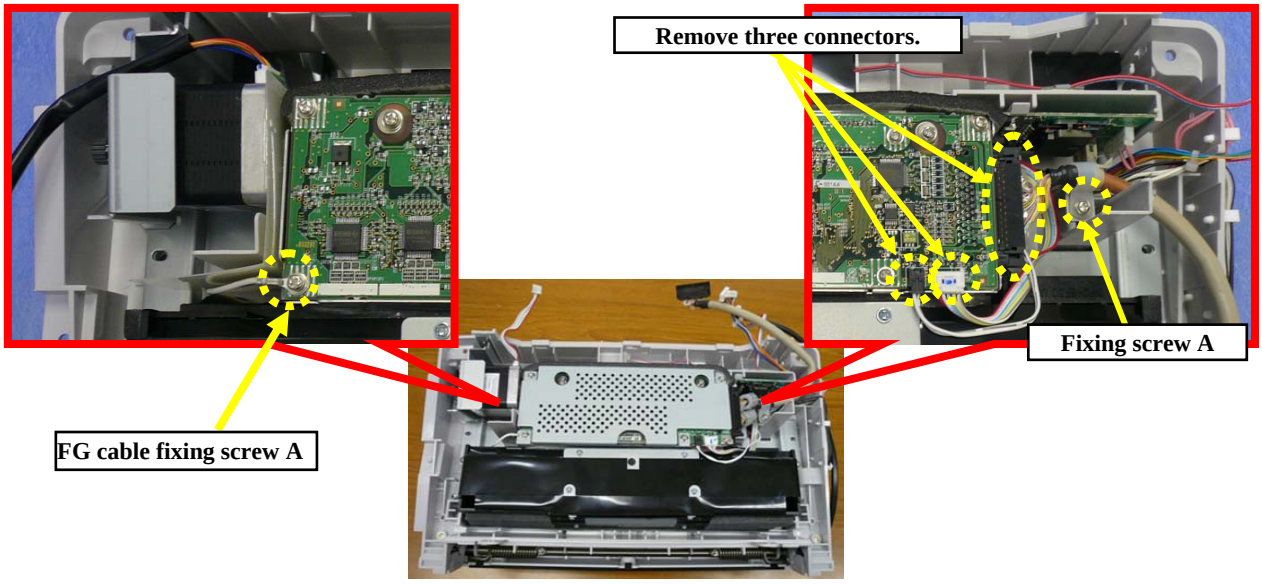


(4) Turn the ADF unit upside down, remove the two screws B from the back of the unit, and then remove the base cover.

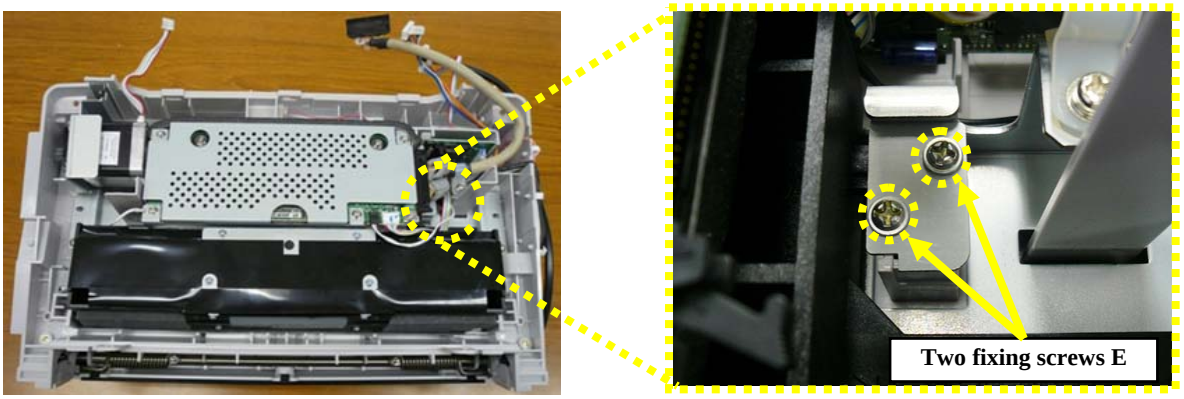




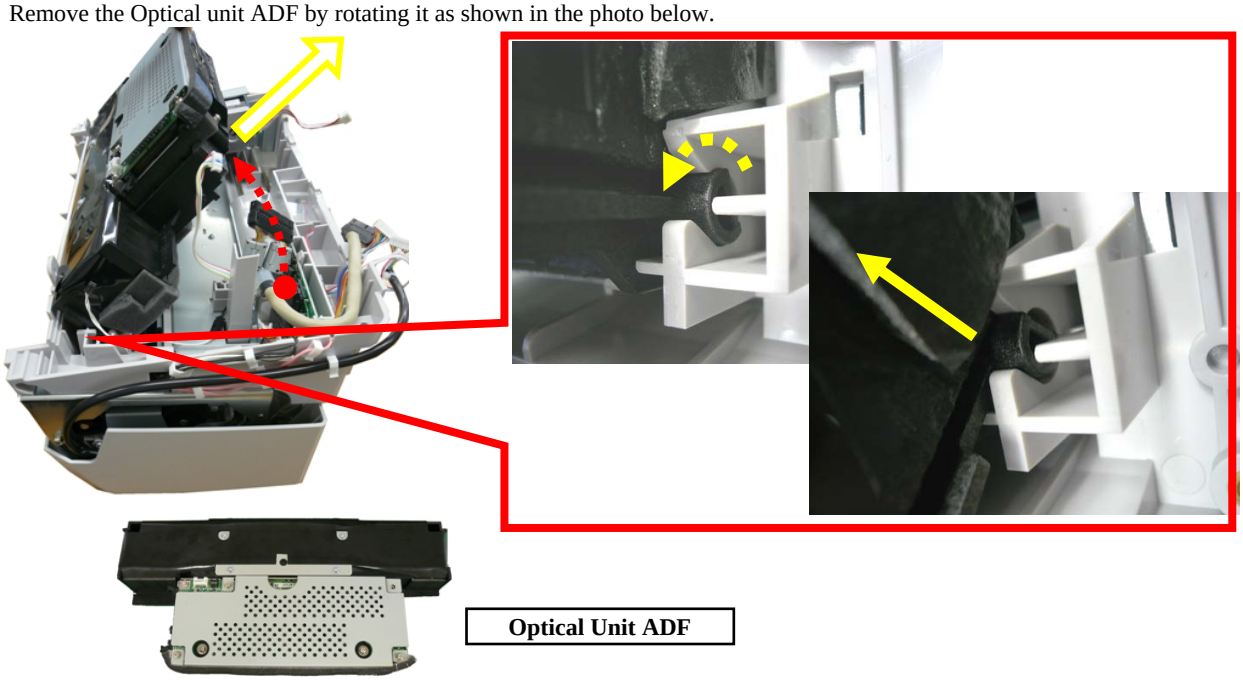
(5) Disconnect the three connectors from the Optical unit ADF. Remove the screw A that secures the CCD Cable and the screw A that secures the FG cable.



(6) Remove the two screws E that secure the bracket to remove the bracket.



(7) Remove the Optical unit ADF by rotating it as shown in the photo below.

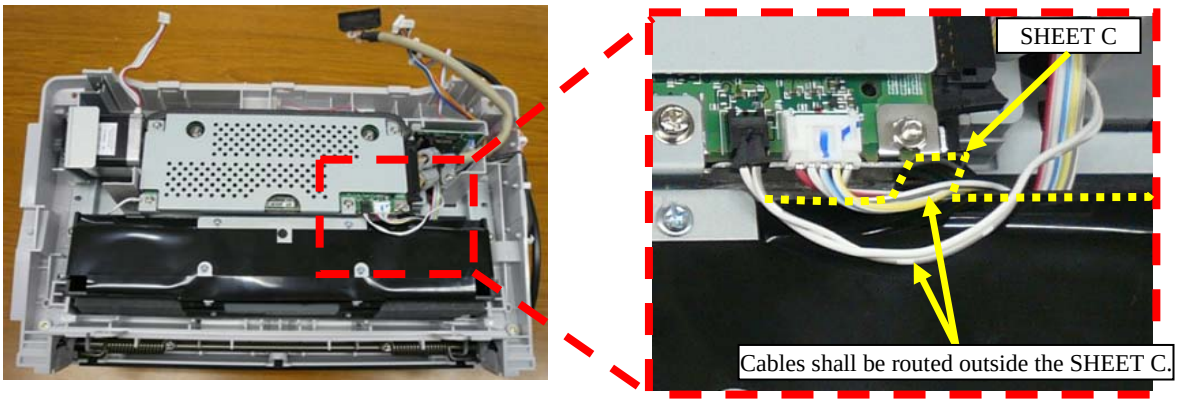


<Installation>

Follow the above procedure in reverse.

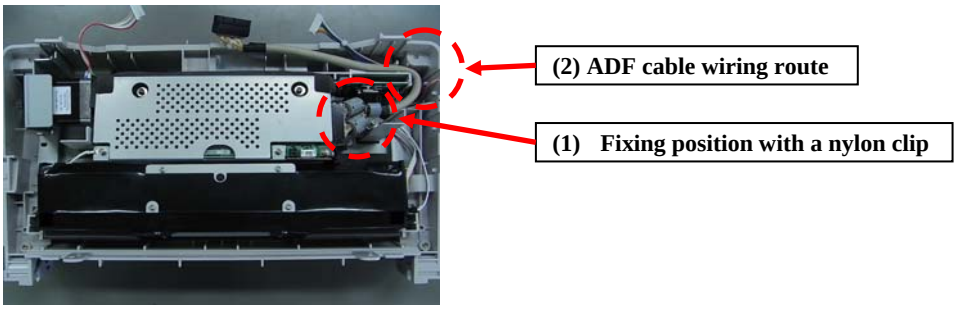
NOTICE

1) Be careful not to touch the mirrors on the Optical unit ADF.
2) After replacing the Optical unit ADF, perform the offset adjustment (Section 6.1.4) and white level adjustment (Section 6.1.5).
3) Route the Inverter cable and thermistor cable outside the SHEET C so that they do not touch the metal part of the Optical unit ADF.

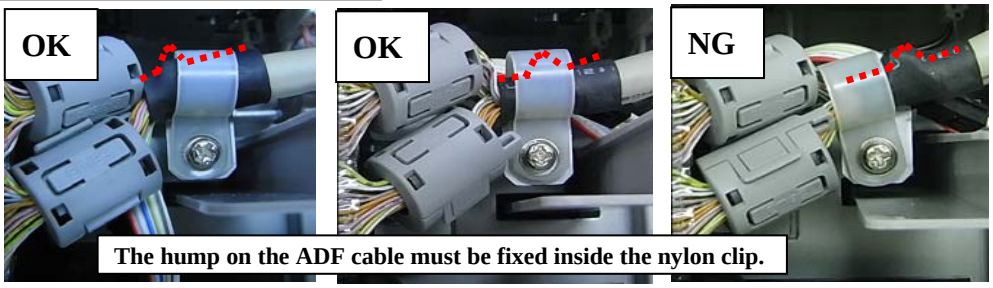


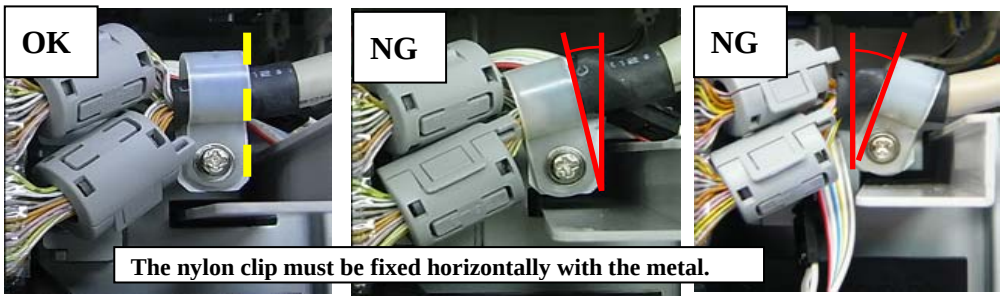
04

4) Make sure that the nylon clip fixing position and wiring is as shown in the photo below when installing the ADF Cable (connector).

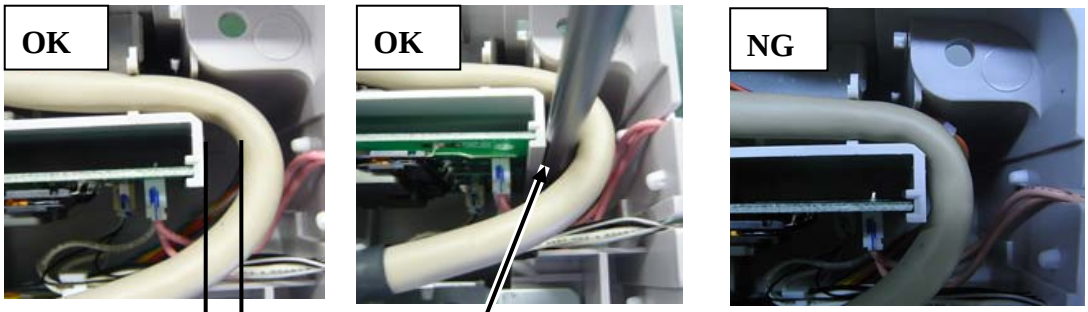


(1) Fixing position with a nylon clip





(2) ADF cable wiring route



5.12.3 Inverter (front side optical system)

NOTICE

Refer to section 3.5 for the part number of the Inverter.

<Removal>

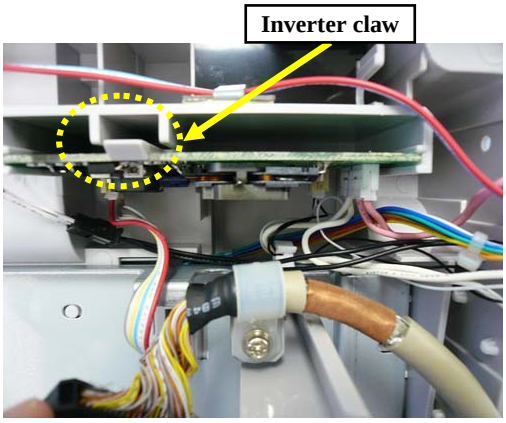
(1) Remove the ADF unit from the frame by referring to Section 5.9.1.

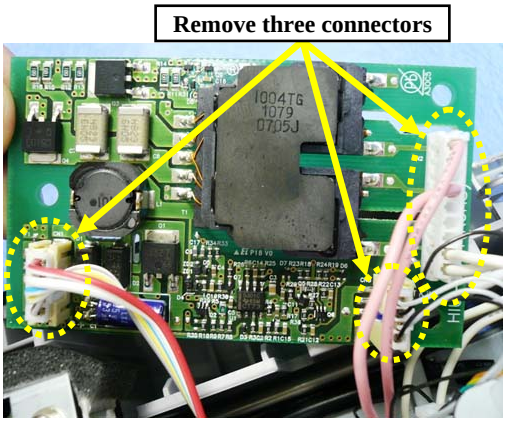
(2) Disconnect the cables and eight connectors from the ADF junction PCA by referring to steps (2) and (3) in Section 5.12.1

(3) Remove the base cover by referring to steps (3) and (4) in Section 5.12.2.

(4) Unlatch the Inverter claw and lift the Inverter out of the frame.

(5) Disconnect the three connectors from the Inverter, and then remove the Inverter.





<Installation>

Follow the above procedure in reverse.

5.12.4 Pick Motor

NOTICE

Refer to section 3.12 for the part number of the Pick Motor.

<Removal>

(1) Remove the ADF unit from the frame by referring to Section 5.9.1.

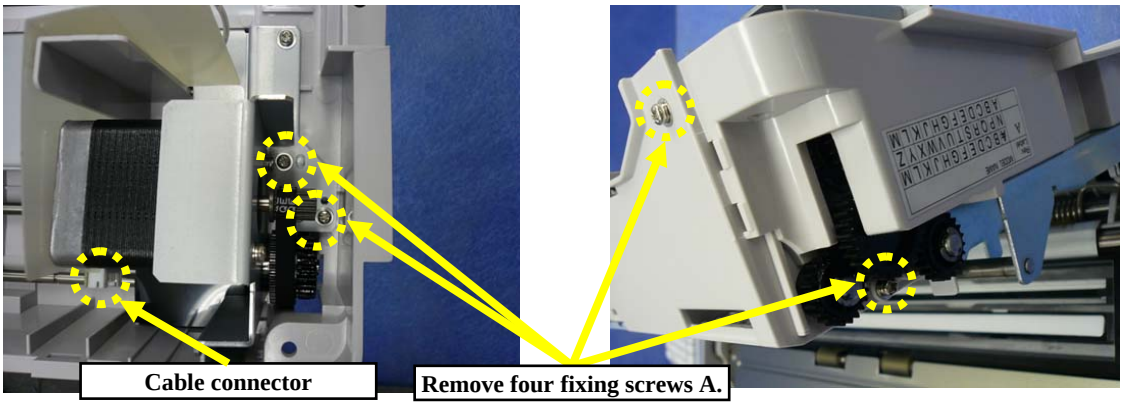
(2) Disconnect the cables and eight connectors from the ADF junction PCA by referring to steps (2) and (3) in Section 5.12.1

(3) Remove the base cover by referring to steps (3) and (4) in Section 5.12.2.

(4) Remove the four screws A that secure the Pick motor (one of those screws is short).

(5) Disconnect the cable connector from the Pick motor to remove.

Note: The Pick motor includes the gear and bracket. Do not disassemble.



Pick Motor

<Installation>

Follow the above procedure in reverse.

Note: After replacing the Pick motor, perform the magnification adjustment (Section 6.1.3).

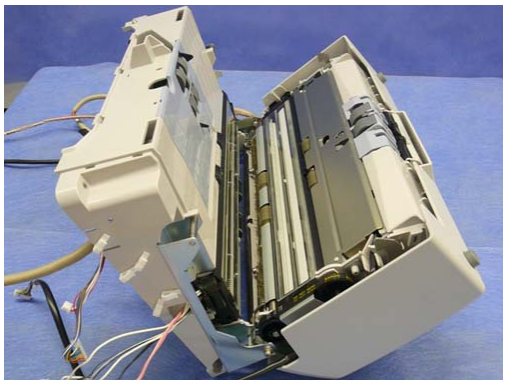
5.12.5 Background Unit F

NOTICE

1) Refer to section 3.3 for the part number of the Background Unit F.
2) The Background unit F includes the lamp for front side scanning and the background for backside scanning.

<Removal>

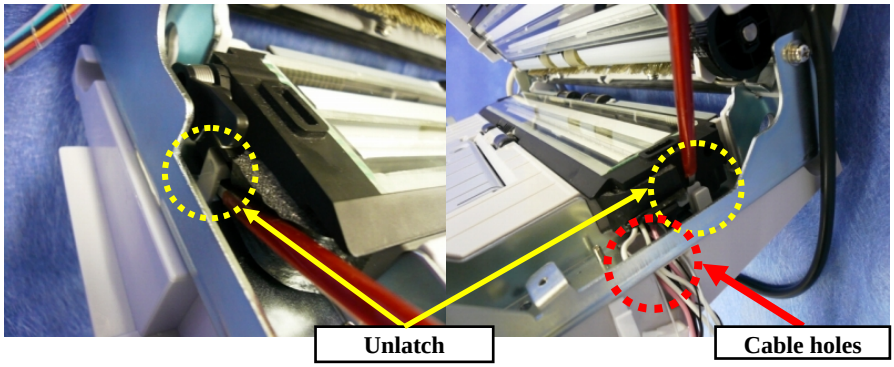
(1) Remove the ADF unit from the frame by referring to Section 5.9.1.
(2) Disconnect the cables and eight connectors from the ADF junction PCA by referring to steps (2) and (3) in Section 5.12.1
(3) Remove the base cover by referring to steps (3) and (4) in Section 5.12.2.
(4) Remove the cable from the Inverter by referring to Section 5.12.4.
(5) Open the ADF, and place it as shown below.



(6) With a flat-blade screwdriver, unlatch the claws at both sides of the Background unit F, and then remove the Background unit F.

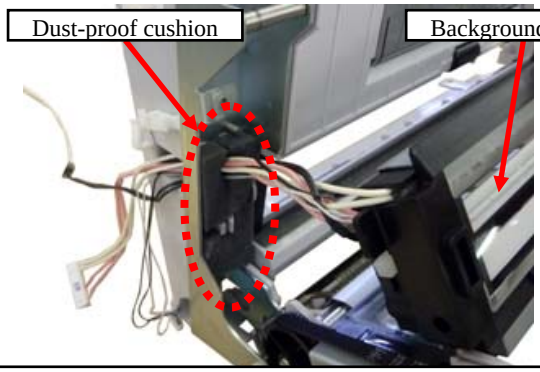
NOTICE

3) When removing the Background unit F, be careful not to damage the cables.



Background Unit F

4) When removing the Background unit F, be careful not to peel off the dust-proof cushion. 06



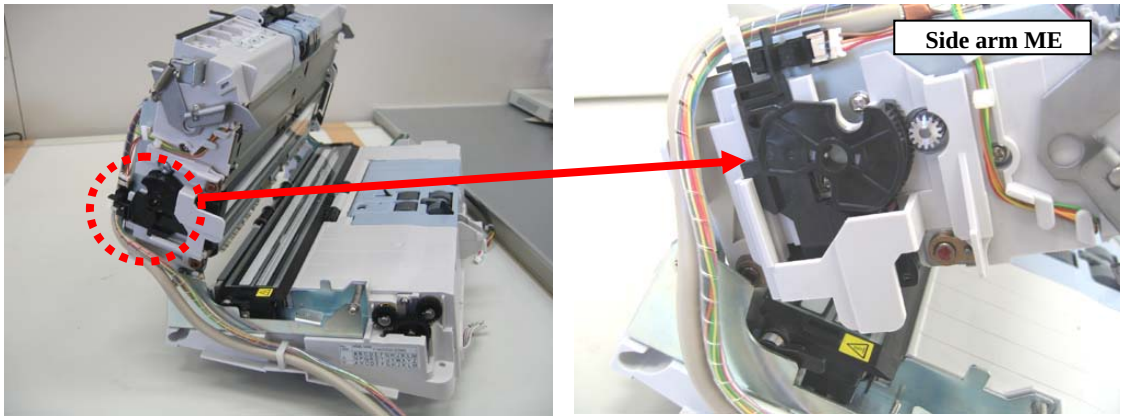
When disconnecting the cable for the Background Unit F, be careful not to peel off the dust-proof cushion.
* The dust-proof cushion may not be pasted on the Background Unit F depending on shipping date of the scanner.

<Installation>

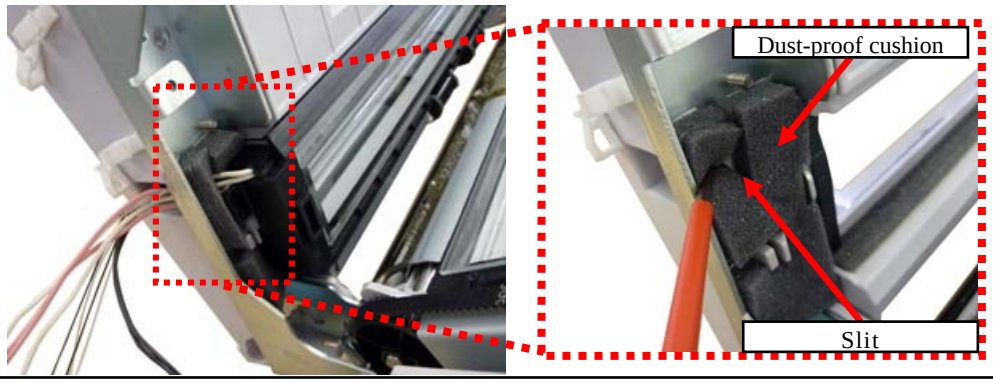
Follow the above procedure in reverse.

NOTICE

1) When installing the Background unit F, check that both the left and right claws secure the Background unit F properly. If not installed properly, the Background unit F and the slide arm ME interfere, which can damage the ADF REV Unit.



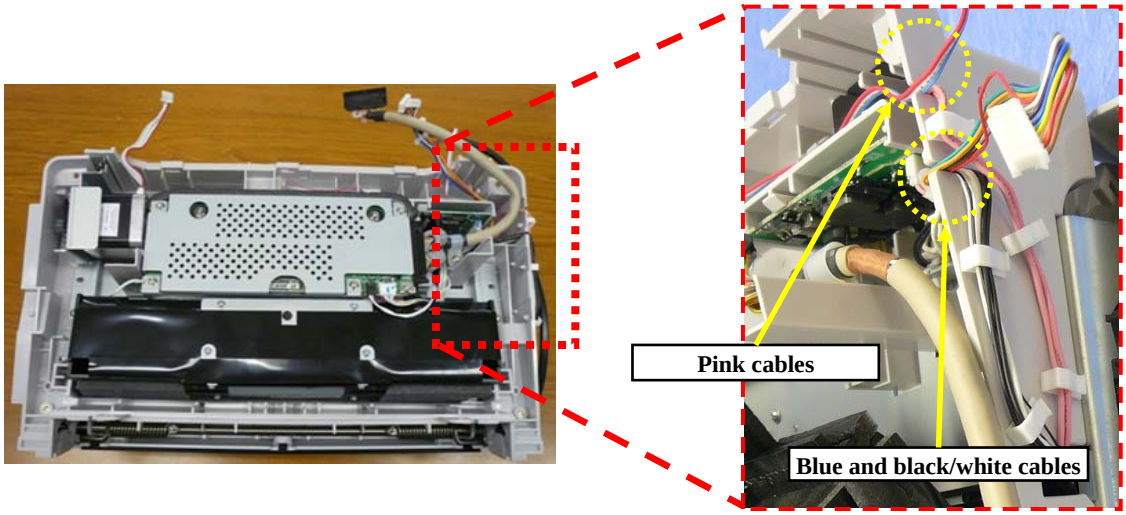
2) When installing the background Unit F, insert the cable between the slit of the dust-proof cushion. 06



* The dust-proof cushion may not be pasted on the Background Unit F depending on shipping date of the scanner.

3) After replacing the Background unit F, perform the offset adjustment (Section 6.1.4) and white level adjustment (Section 6.1.5).

4) To avoid defective images, make sure that the pink, blue and black/white cables are separated.



5.12.6 HK Ring ME

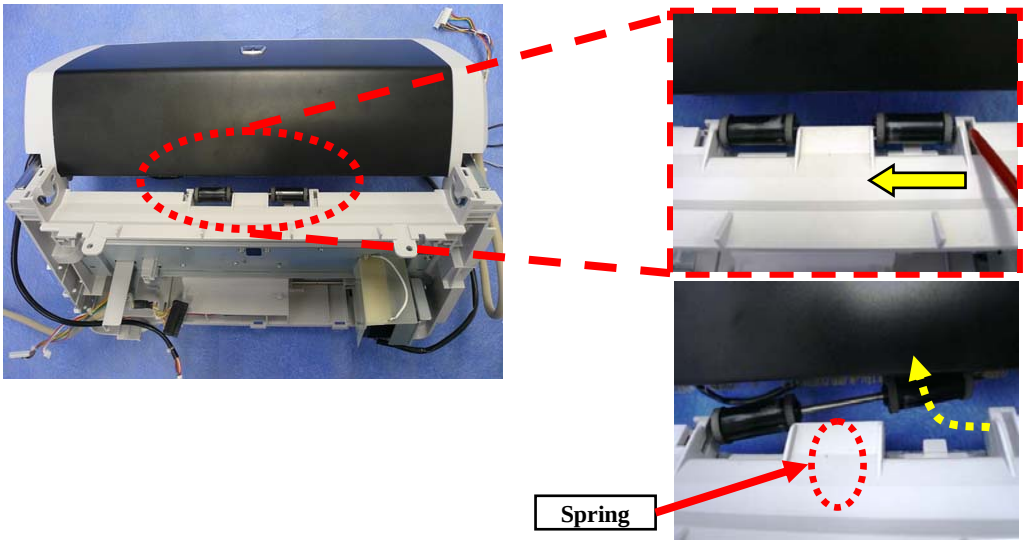
NOTICE

1) Refer to Section 3.13 for the part number of the HK Ring ME.
2) Do not touch the glass areas of the scanning section while disassembling.

<Removal>

(1) Remove the Background unit F by referring to Section 5.12.5.

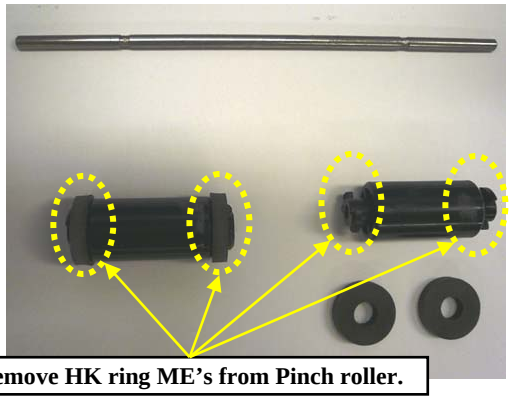
(2) Insert a small flat-blade screwdriver in the right groove when you look at the ADF unit from the document exit side (photo on the left below), and slide the Pinch roller shaft in the direction of the arrow until the Pinch rollers and shaft are removed.



NOTICE

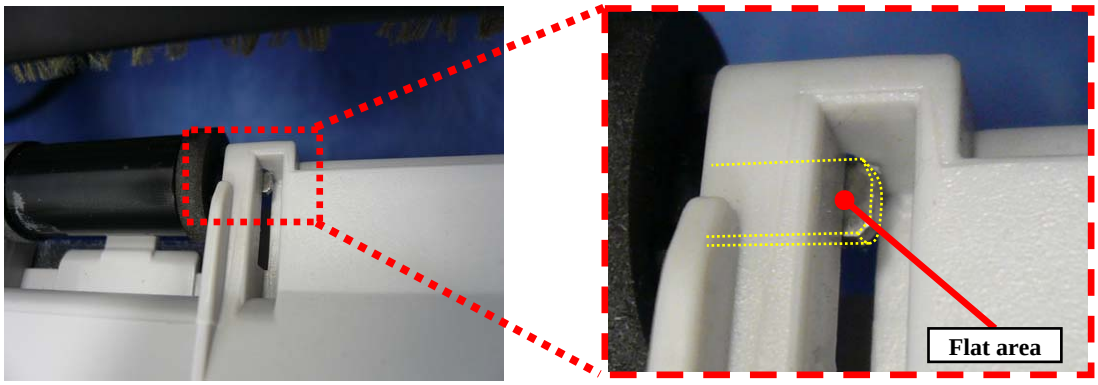
Do not lose the spring when removing the Pinch roller and the shaft.

(3) Remove the pinch rollers from the shaft, then remove the HK rings ME from the rollers.



<Installation>

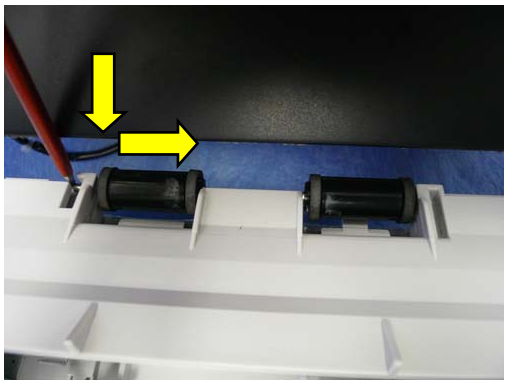
(1) Insert the side of the shaft with flat area into the right side groove when looking from the document ejector side.

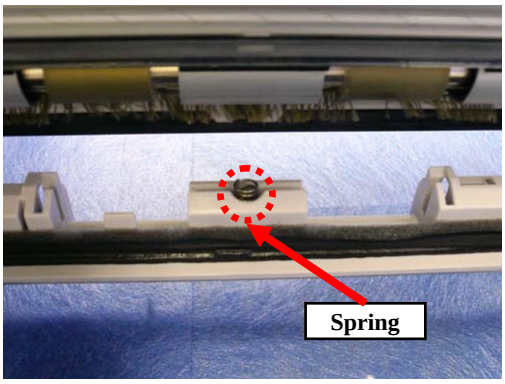


NOTICE

1. Be sure that the flat area of the shaft comes to the Stacker side.

(2) Insert the Pinch roller shaft in the groove, and slide the edge of the shaft in the direction of the arrow with a small flat-blade screwdriver to install.





NOTICE

2. Be sure to install the spring between the Pinch roller shaft and the frame.
3. After replacing the HK ring ME, perform the magnification adjustment (Section 6.1.3) and offset adjustment (Section 6.1.4).

5.13 Parts inside of FB

5.13.1 Panel Unit / Panel PCA

NOTICE

Refer to the following sections for the part number of the replacement parts.

Panel unit: Section 3.41

Panel PCA: Section 3.42

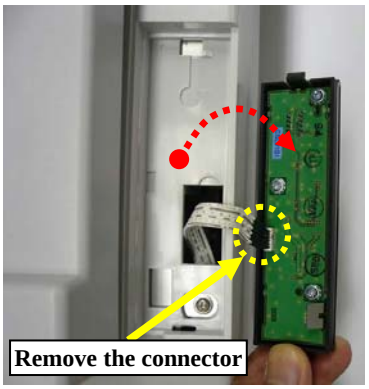
<Removing Panel Unit>

(1) The EEPROM is installed on the Panel PCA. Before replacing the Panel PCA, save the EEPROM data to the Control PCA temporarily by following the procedure in Section 7.2.

(2) Open the Panel unit cover. Insert a small flat-blade screwdriver at the top of the Panel unit and unlatch the Panel unit claw to remove the Panel unit.

(3) Disconnect the connector from the Panel unit, and then remove the unit.

Open the cover. Take out the Panel Unit with a flat-blade screwdriver.



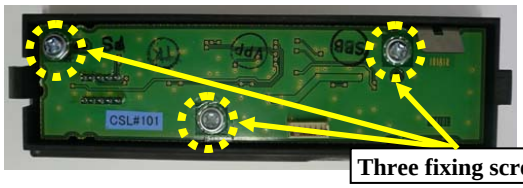
Remove the connector

Panel Unit

<Removing Panel PCA>

After step (3) in Section 5.13.1, remove the Panel PCA following the procedure below.

(4) Remove the three screws from the Panel unit, and then remove the Panel PCA.



Three fixing screws

Panel PCA

<Installation>

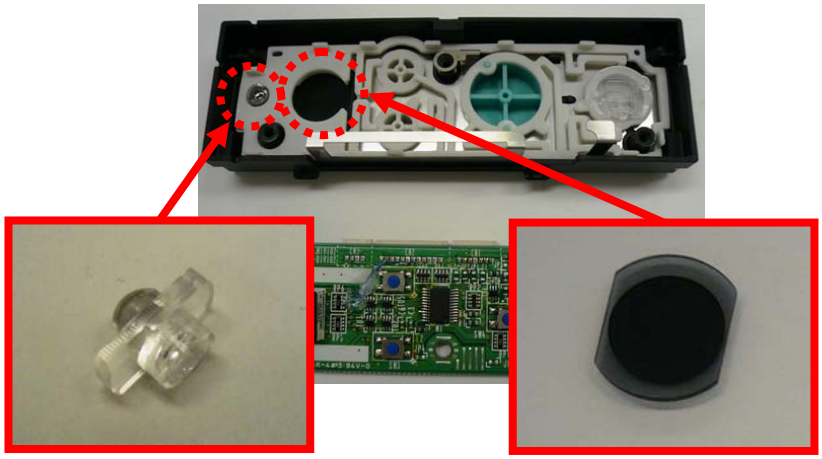
Follow the above procedure in reverse.

CAUTION

After replacing the Panel unit (Panel PCA), be sure to restore the EEPROM data which was saved in the Control PCA to the Panel PCA by referring to Section 6.2.

NOTICE

1) When installing the Panel PCA into the Panel unit, be careful no to drop the transparent plastic part for the LED.



2) When installing the Panel unit, be careful not to pinch the connected cables.

5.13.2 FB junction PCA

NOTICE

Refer to section 3.24 for the part number of the FB Junction PCA.

<Removal>

(1) Referring to Section 5.8.1, remove the PCA unit.

(2) Referring to Section 5.9.1, remove the ADF unit.

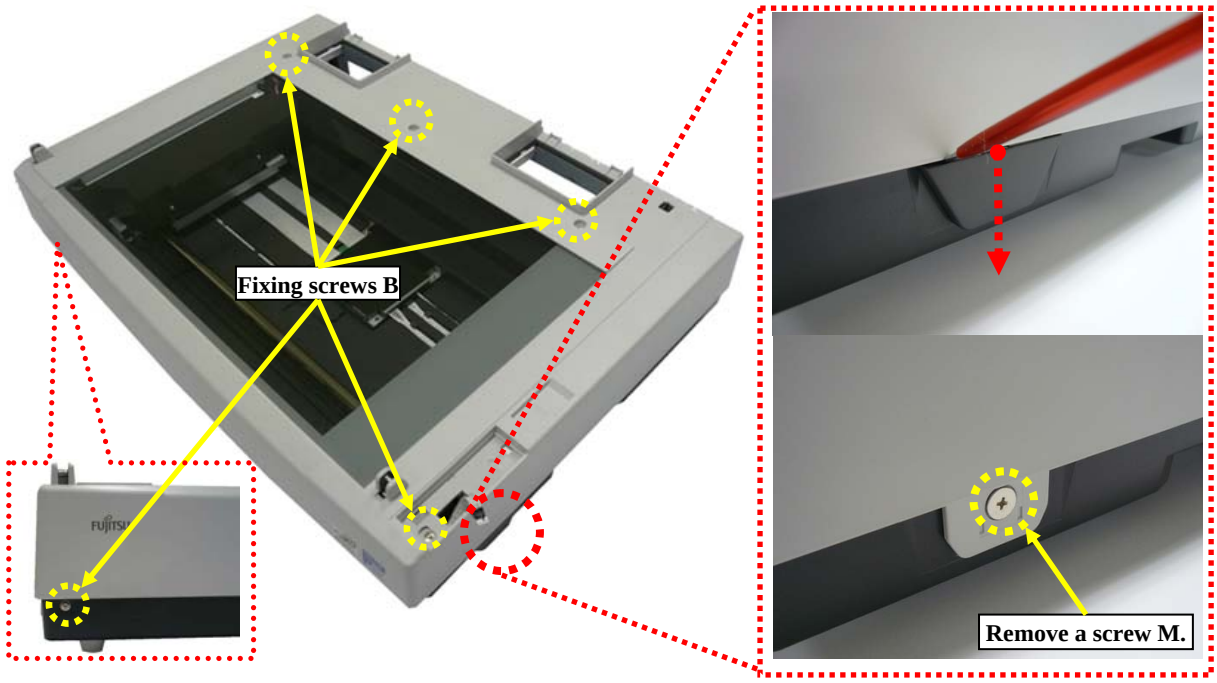
(3) Referring to steps (3) and (4) in Section 5.9.3, remove the Document cover.

(4) Referring to Section 5.13.1, remove the Panel unit.

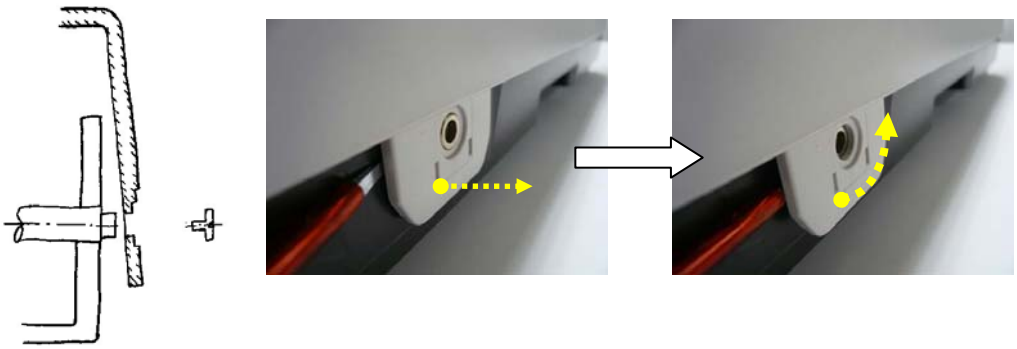
Note: The EEPROM data does not need to be copied to the Control PCA.

(5) Remove the four small screws B on the upper surface and the one screw from the front of the FB cover.

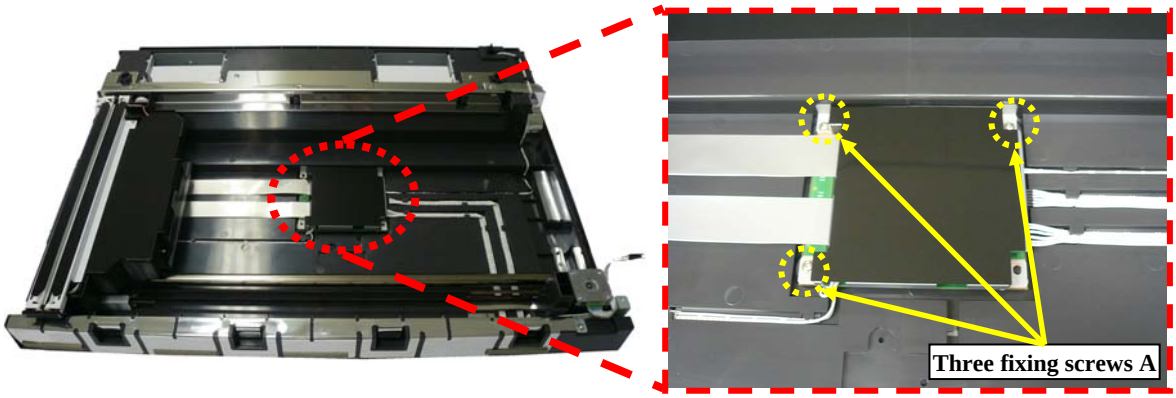
(6) With a small flat-blade screwdriver, lower the two small plastic covers under both sides of the FB cover to remove, and then remove the fixing screws M.



(7) Using a small flat blade screwdriver pry out the areas where the two screws were removed in step (6) above, and then lift the FB Cover upward to remove.



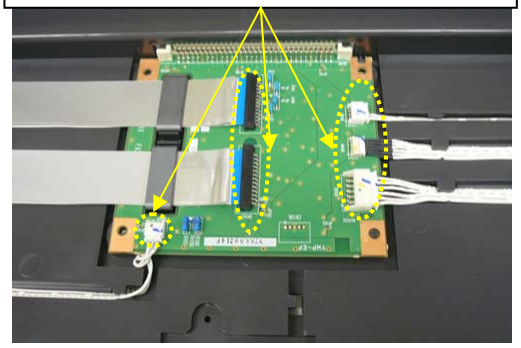
(8) Remove the three screws A that secure the FB junction PCA cover, and then remove the cover.

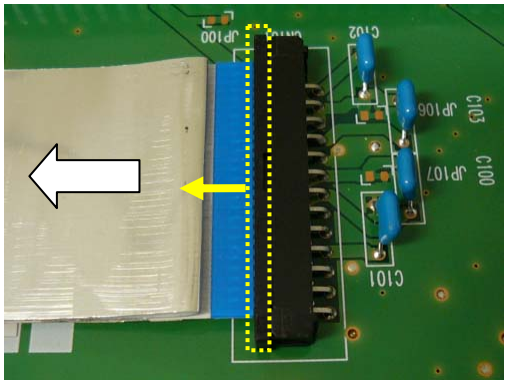


(9) Disconnect the two CCD cable FB's and four other cables from the FB junction PCA.

To disconnect the CCD cable FB, pull out the front edge of the connectors in the direction of the arrow in the photo below right.

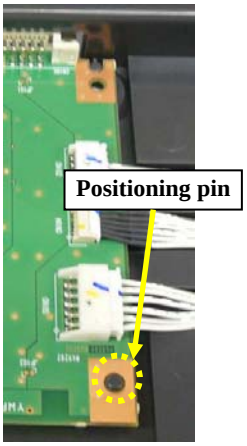
Remove CCD cable FB and connectors





Pull out the connector and remove the cable.

(10) Remove the FB junction PCA from the positioning pins and lifting it out of the FB unit.



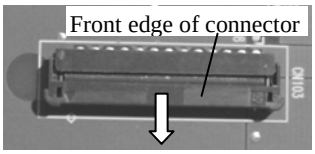
FB Junction PCA

<Installation>

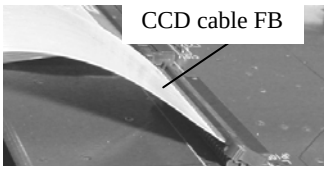
Follow the above procedure in reverse.

NOTICE

1) When inserting the CCD cables into the connectors, follow the procedure below.
   (a) Unlock the front edge of the connector.

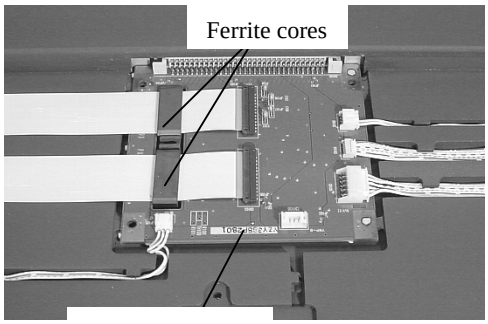


   (b) With the blue area of the cables facing up, insert each CCD cable FB into the connector. Insertion will be easier if the connector is turned up a bit. Press the connector toward the FB junction PCA after insertion.

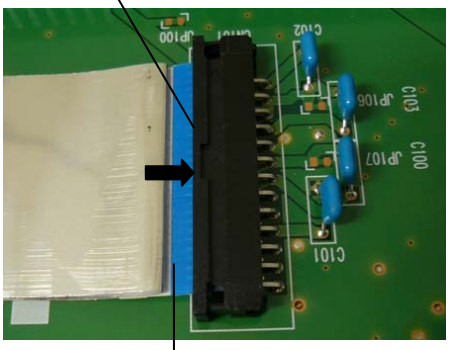


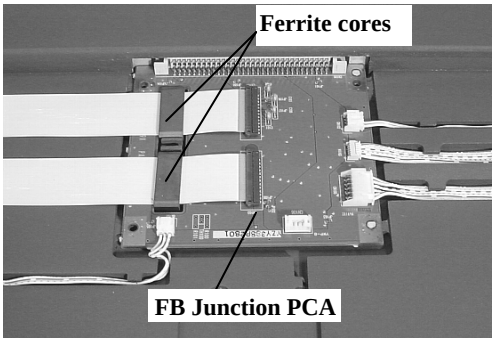
   (c) Push in the front edge of the connector to lock.

2) Set the ferrite cores into the grooves as shown on the lower right.



Edge of the connector





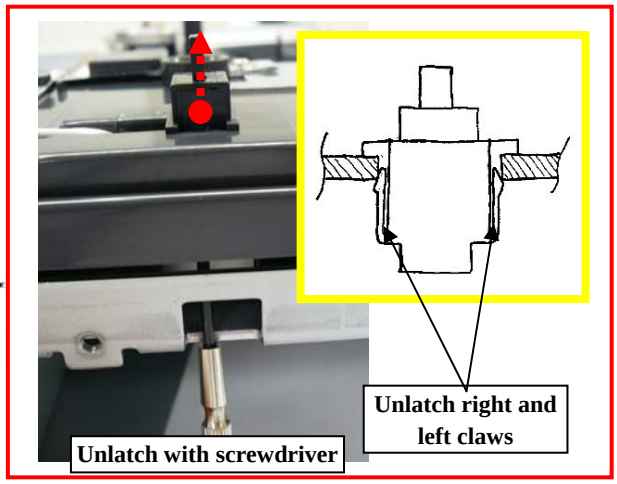
5.13.3 Sensor OP (for detecting document cover open)

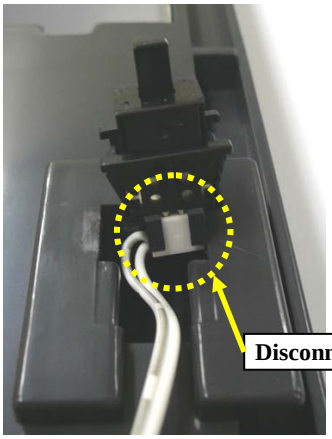
NOTICE

Refer to section 3.19 for the part number of the Sensor OP.

<Removal>

(1) Referring to Section 5.8.1, remove the PCA unit.
(2) Referring to Section 5.9.1, remove the ADF unit.
(3) Referring to steps (3) and (4) in Section 5.9.3, remove the Document cover.
(4) Referring to Section 5.13.1, remove the Panel unit.
(5) Referring to steps (5) ~ (7) in Section 5.13.2, remove the FB Cover.
(6) Insert a small flat-blade screwdriver into both spaces on each side of the Sensor OP to release from the frame.
(7) Disconnect the connector from the Sensor OP.

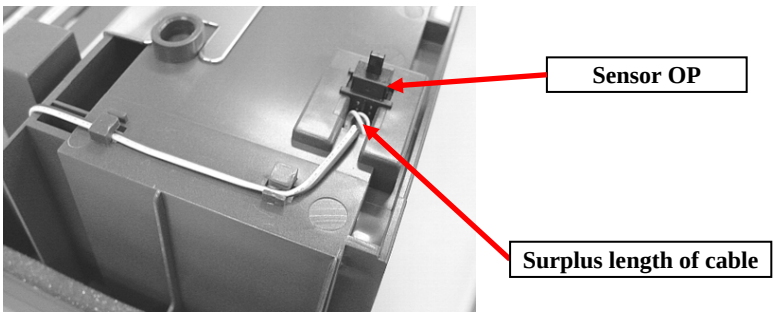




<Installation>

Follow the above procedure in reverse.

Note: Push the surplus length of the cable into the hole.



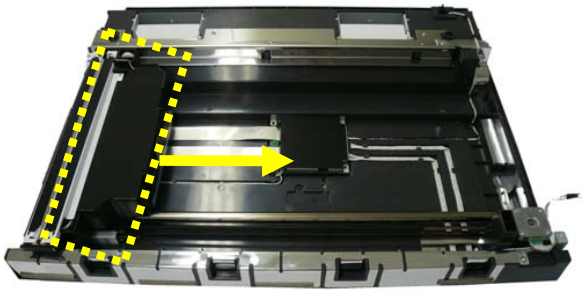
5.13.4 Sensor (for detecting home position)

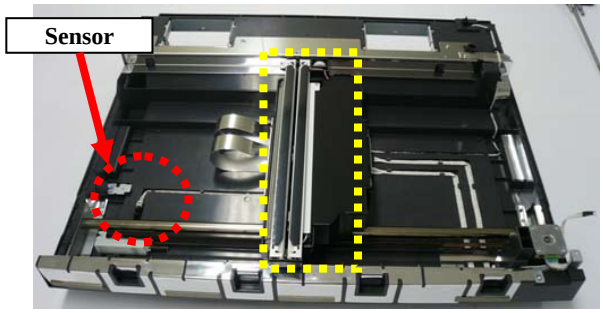
NOTICE

Refer to section 3.8 for the part number of the Sensor.

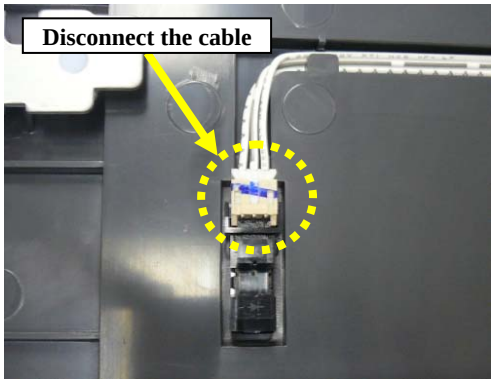
<Removal>

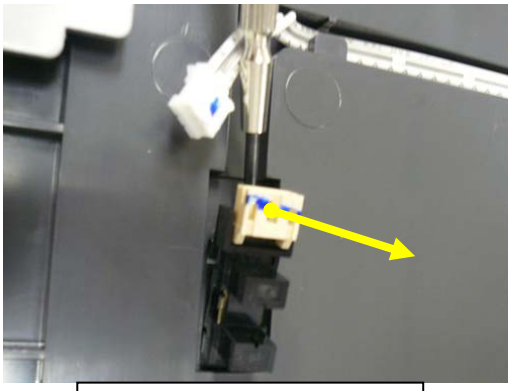
(1) Referring to Section 5.8.1, remove the PCA unit.
(2) Referring to Section 5.9.1, remove the ADF unit.
(3) Referring to steps (3) and (4) in Section 5.9.3, remove the Document cover.
(4) Referring to Section 5.13.1, remove the Panel unit.
(5) Referring to steps (5) ~ (7) in Section 5.13.2, remove the FB Cover.
(6) Move the Optical unit FB to the center of the FB unit, and then disconnect the cable connected to the Sensor.



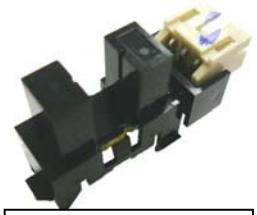


(7) Unlatch the claw at the side of the Sensor to remove the Sensor.





Unlatch and remove the sensor



Sensor

<Installation>

Follow the above procedure in reverse.

NOTICE

Be careful not to pinch any cables.

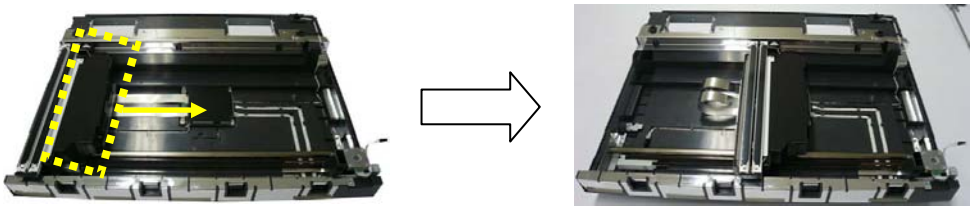
5.13.5 Optical unit FB

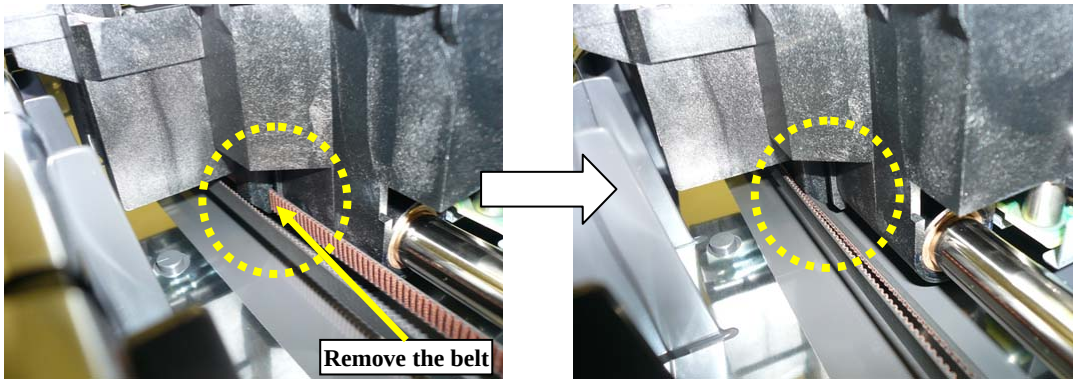
NOTICE

Refer to the Section 3.25 for the part number of the Optical Unit FB.

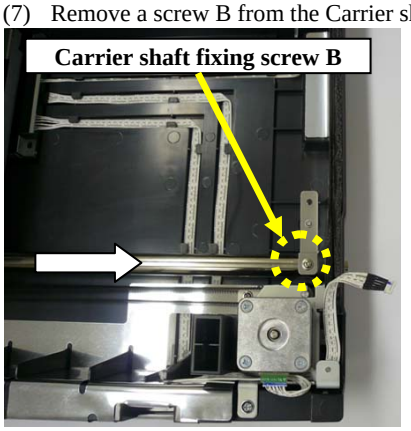
<Removal>

(1) Referring to Section 5.8.1, remove the PCA unit.
(2) Referring to Section 5.9.1, remove the ADF unit.
(3) Referring to steps (3) and (4) in Section 5.9.3, remove the Document cover.
(4) Referring to Section 5.13.1, remove the Panel unit.
(5) Referring to steps (5) ~ (7) in Section 5.13.2, remove the FB Cover.
(6) Move the Optical unit FB to the center of the FB unit, and then lower the belt to remove from the Optical unit FB (photos below).



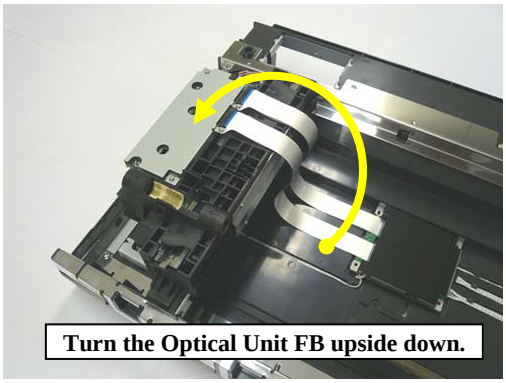


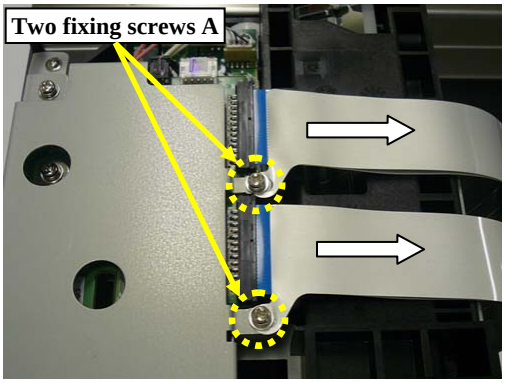
(7) Remove a screw B from the Carrier shaft, and then slide the Carrier shaft to remove from the Optical unit FB.



For easy removal, pull out the Carrier shaft after reinstalling the removed screw M.

(8) Turn over the Optical unit FB, remove the two fixing screws A and then disconnect the two CCD cable FB's to remove the Optical unit FB.





Optical Unit FB

<Installation>

Follow the above procedure in reverse.

Note: After replacing the Optical unit FB, perform the magnification adjustment (Section 6.1.3), offset adjustment (Section 6.1.4) and white level adjustment (Section 6.1.5).

5.13.6 CCD Cable FB

NOTICE

Refer to the Section 3.23 for the specification of replacement part.

<Removal>

(1) Referring to Section 5.8.1, remove the PCA unit.
(2) Referring to Section 5.9.1, remove the ADF unit.
(3) Referring to steps (3) and (4) in Section 5.9.3, remove the Document cover.
(4) Referring to Section 5.13.1, remove the Panel unit.
(5) Referring to steps (5) ~ (7) in Section 5.13.2, remove the FB Cover.
(6) Referring to steps (8) and (9) in Section 5.13.2, remove the CCD cable FB at the FB Junction PCA side.
(7) Referring to steps (6) ~ (8) in Section 5.13.5, remove the CCD cable FB at the Optical unit FB side.

CCD Cable FB

<Installation>

Follow the above procedure in reverse.

Note: When installing the CCD cable FB, refer to <Installation> in Section 5.13.2.

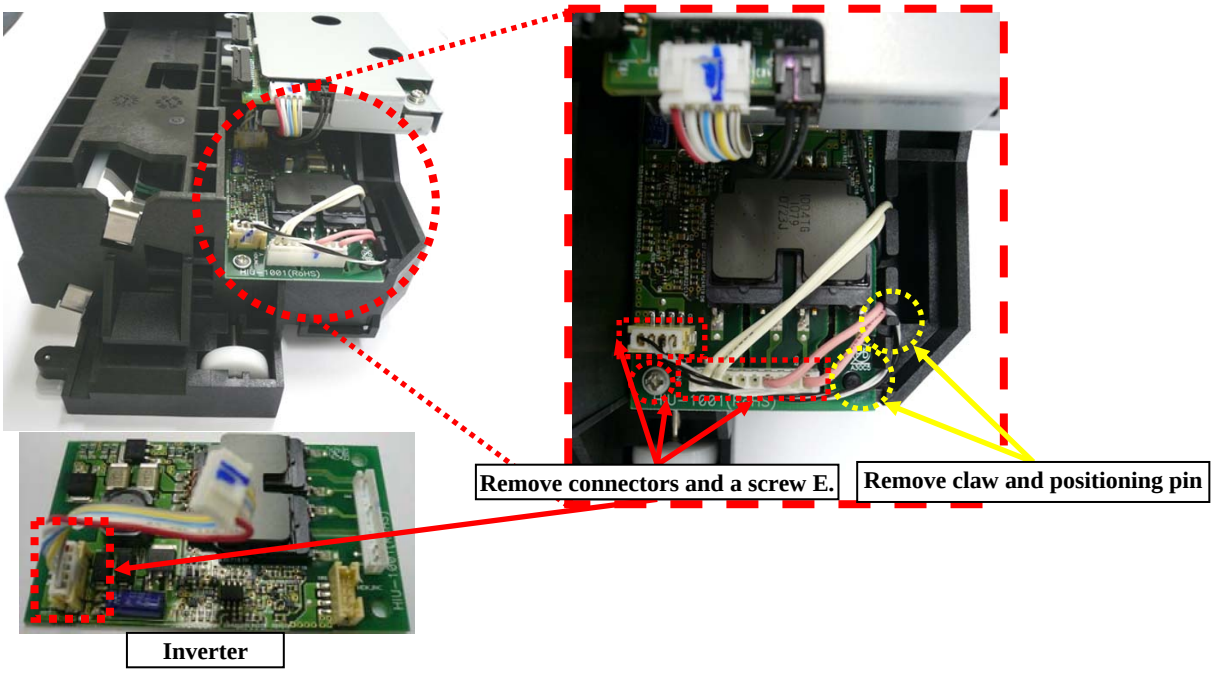
5.13.7 Inverter

NOTICE

Refer to the Section 3.5 for the part number of the Inverter.

<Removal>

(1) Referring to Section 5.8.1, remove the PCA unit.
(2) Referring to Section 5.9.1, remove the ADF unit.
(3) Referring to steps (3) and (4) in Section 5.9.3, remove the Document cover.
(4) Referring to Section 5.13.1, remove the Panel unit.
(5) Referring to steps (5) ~ (7) in Section 5.13.2, remove the FB Cover.
(6) Referring to steps (6) ~ (8) in Section 5.13.5, remove the Optical unit FB.
(7) Disconnect the three connectors from the Inverter, remove the one screw E that secures the Inverter. While lifting up the Inverter, move the claw outward to remove the Inverter.

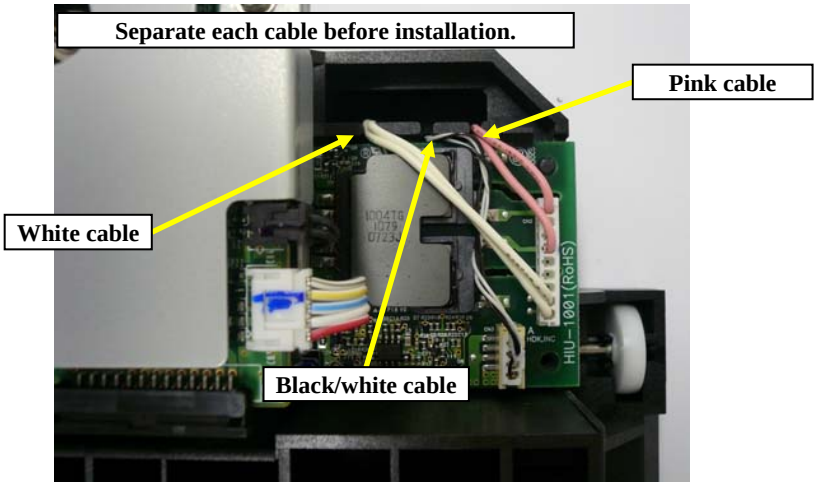


<Installation>

Follow the above procedure in reverse.

NOTICE

To avoid defective images, make sure that the pink, white, and black/white cables are separated as shown in photo below.



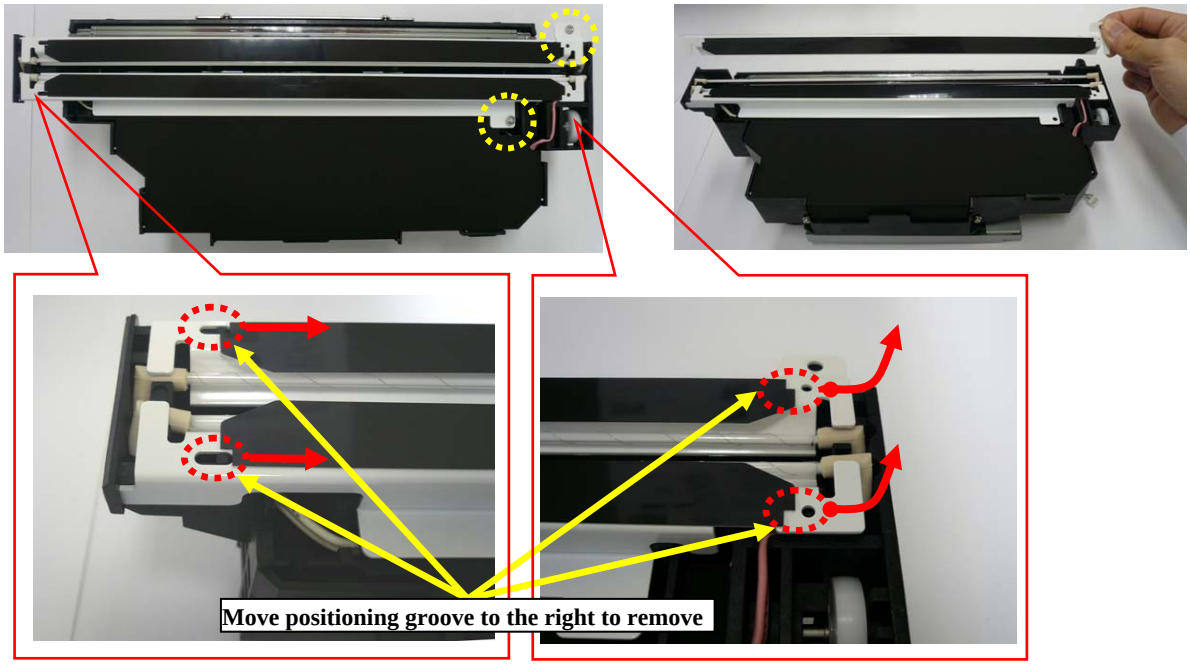
5.13.8 Lamp FB

NOTICE

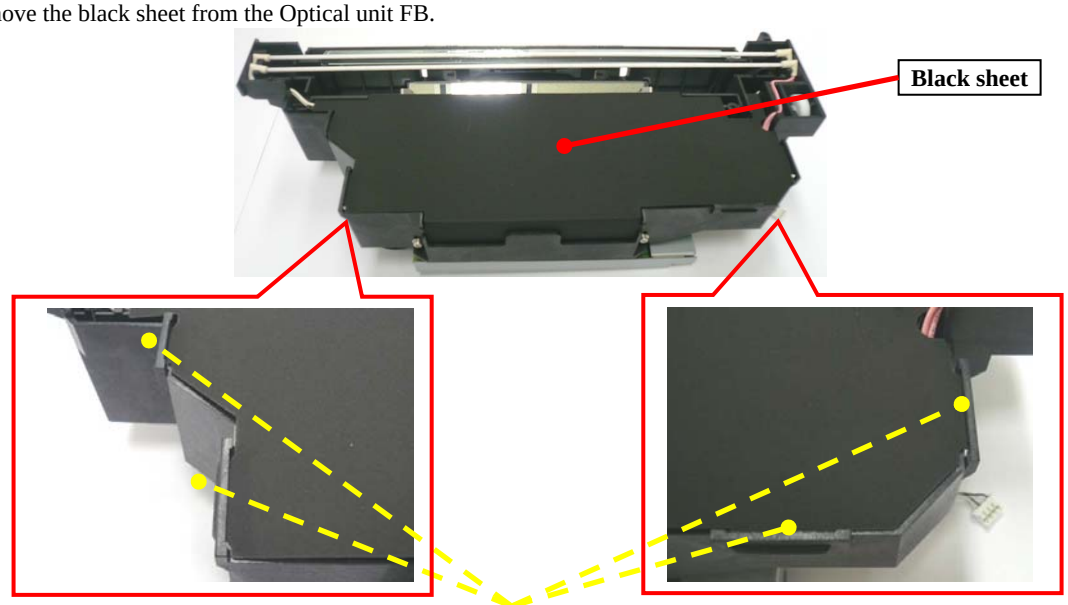
Refer to the Section 3.26 for the part number of the Lamp FB.

<Removal>

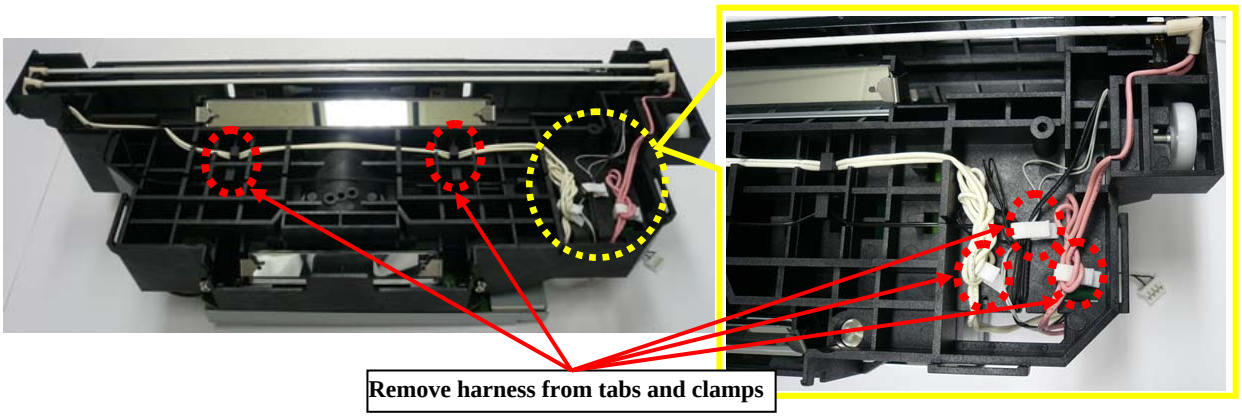
(1) Referring to Section 5.8.1, remove the PCA unit.
(2) Referring to Section 5.9.1, remove the ADF unit.
(3) Referring to steps (3) and (4) in Section 5.9.3, remove the Document cover.
(4) Referring to Section 5.13.1, remove the Panel unit.
(5) Referring to steps (5) ~ (7) in Section 5.13.2, remove the FB Cover.
(6) Referring to steps (6) ~ (8) in Section 5.13.5, remove the Optical unit FB.
(7) Referring to step (7) in Section 5.13.7, disconnect the connector from the Inverter.
(8) Remove the two screws E from the Optical unit FB, then move the reflector to the right on the groove to remove.

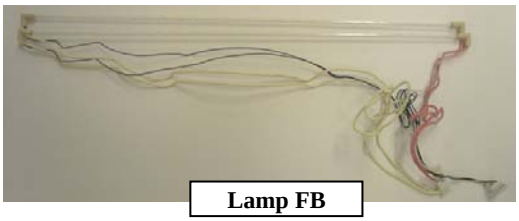


(9) Remove the black sheet from the Optical unit FB.



(10) Remove the wiring harness from black tabs and white cable clamps in the Optical unit FB. Lift the Lamp FB to remove from the Optical unit FB.





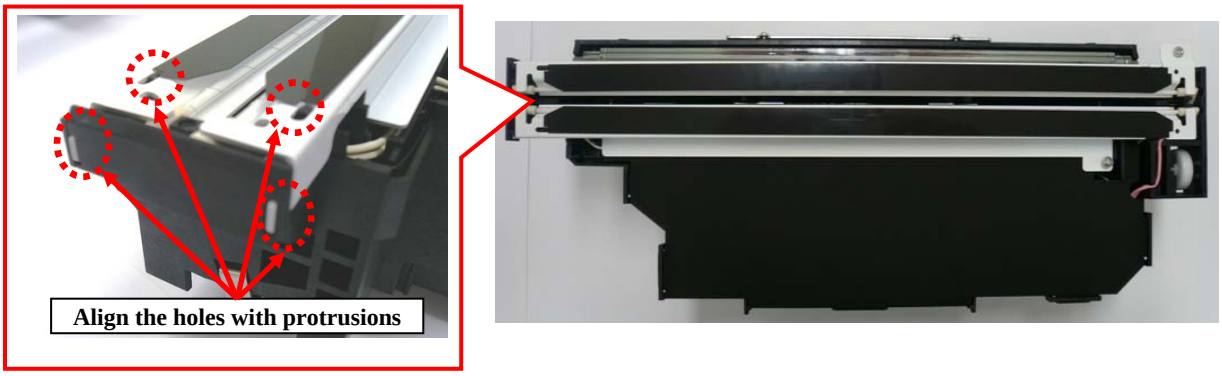
<Installation>

Follow the above procedure in reverse.

NOTICE

1) Insert the rubber lamp contact insulators at both ends of the Lamp into the slots in the frame of the Optical unit FB, and install the reflector to avoid breaking the lamp. Then route the lamp harness under the black tabs and the white cable clamps.

2) When installing the reflectors, insert the reflector tabs on the Optical unit FB frame, and then align the reflector holes with the Optical unit FB protrusions.



3) After replacing the Lamp FB, perform the magnification adjustment (Section 6.1.3), offset adjustment (Section 6.1.4) and white level adjustment (Section 6.1.5).

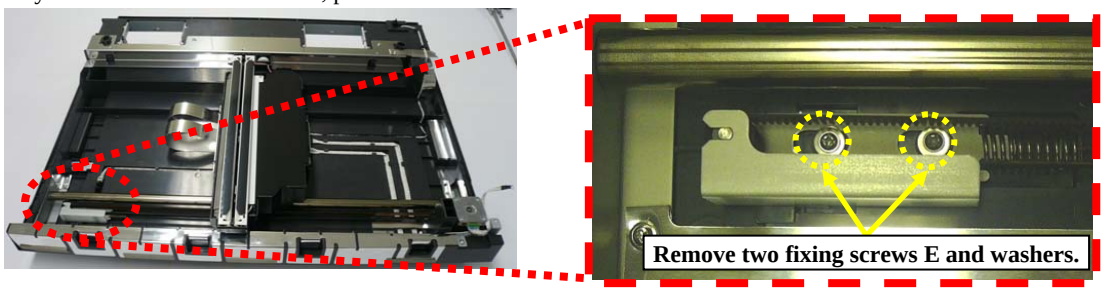
5.13.9 FB Motor

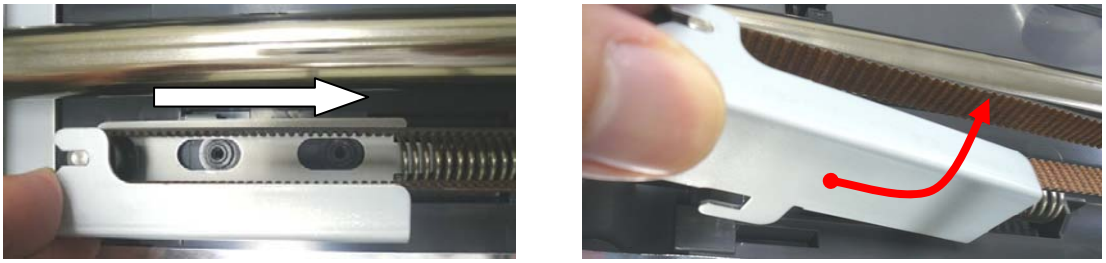
NOTICE

Refer to Section 3.22 for the part number of the FB Motor.

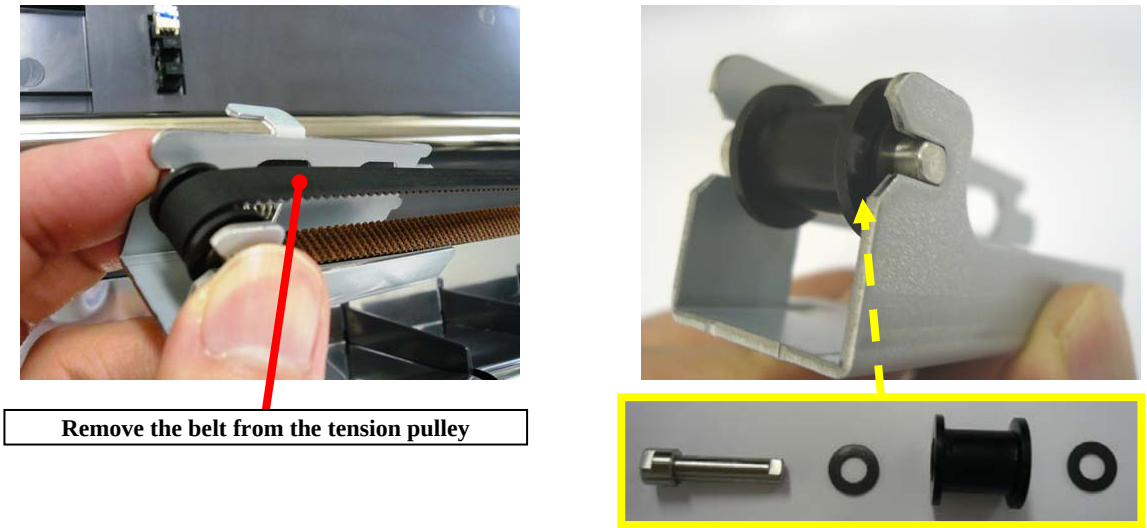
<Removal>

(1) Referring to Section 5.8.1, remove the PCA unit.
(2) Referring to Section 5.9.1, remove the ADF unit.
(3) Referring to steps (3) and (4) in Section 5.9.3, remove the Document cover.
(4) Referring to Section 5.13.1, remove the Panel unit.
(5) Referring to steps (5) ~ (7) in Section 5.13.2, remove the FB Cover.
(6) Remove the two screws E and washers and that secure the tension pulley. Pushing the bracket that supports the tension pulley in the direction of the arrow, pull it to the front to remove.





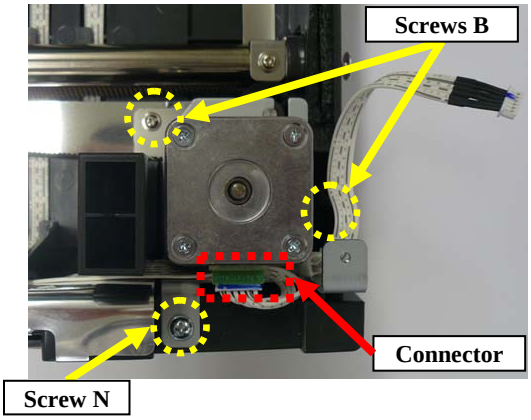
(7) Remove the tension pulley from the bracket groove, and then the belt from the tension pulley.



NOTICE

Two spacers (each for upper and lower) are installed on the tension pulley shaft. Be careful not to lose them.

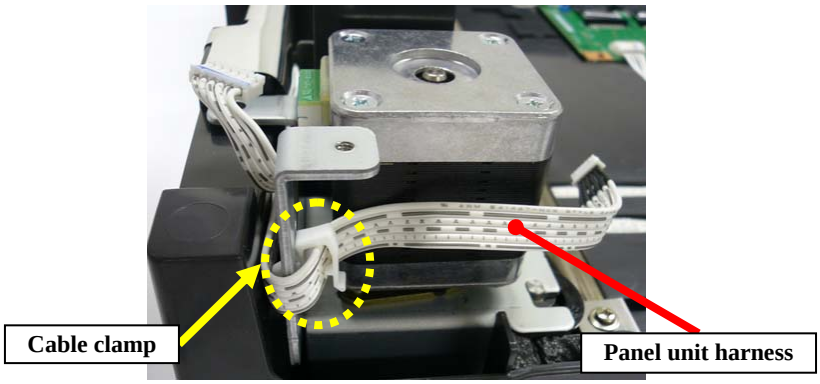
(8) Remove the screws (two screws B and one screw N) that secure the FB motor, disconnect the connector connected to the Motor to remove the FB motor.



(9) Remove the Panel unit harness from the cable clamp.

NOTICE

The FB motor includes the belt.



<Installation>

Follow the above procedure in reverse.

NOTICE

After replacing the FB motor, perform the magnification adjustment (Section 6.1.3) and offset adjustment (Section 6.1.4).

5.14 Other parts

5.14.1 ADF Cable

NOTICE

Refer to Section 3.40 for the part number of the ADF Cable.

<Removal>

(1) Referring to steps (1) ~ (4) in Section 5.8.1, disconnect the ADF cable.

(2) Referring to steps (1) ~ (7) in Section 5.9.1, disconnect the ADF cable from the ADF unit.

<Installation>

Follow the above procedure in reverse.

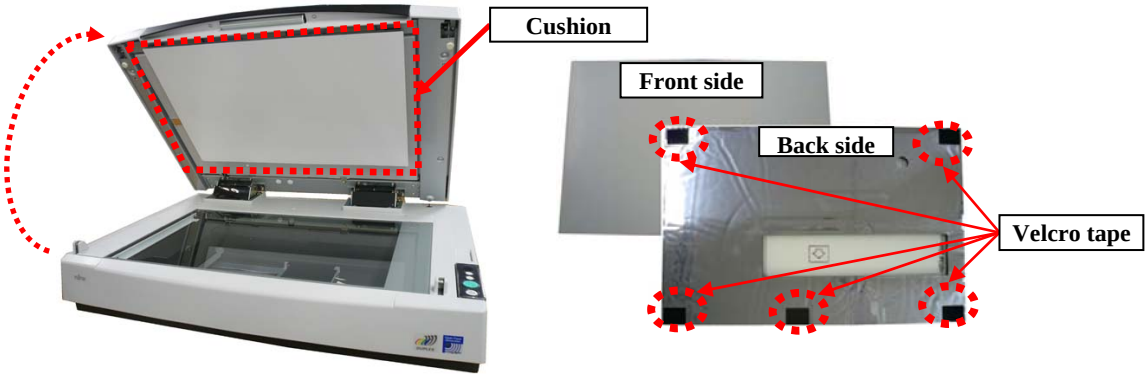
5.14.2 Cushion

NOTICE

Refer to section 3.28 for the part number of the Cushion.

<Removal>

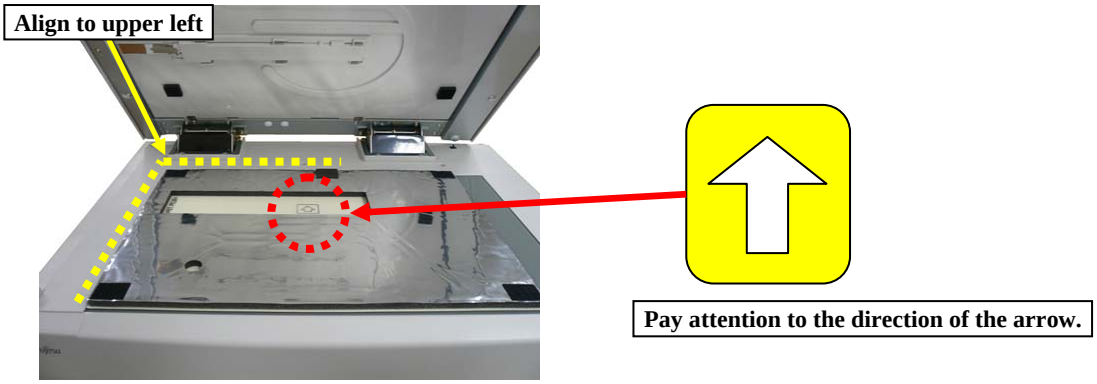
(1) Open the Document cover. Pull the Cushion off of the Document cover to remove.



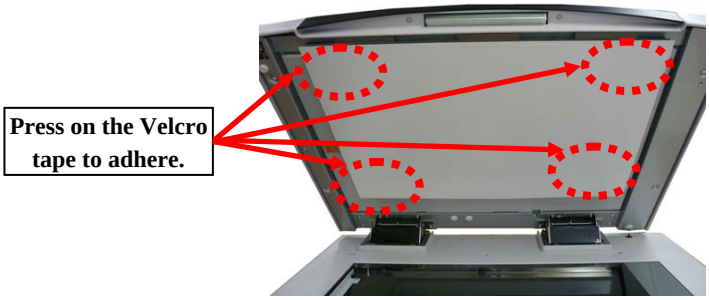
<Installation>

(1) With the side of the Cushion with the Velcro facing up, align the Cushion at the back left corner of the FB glass. (Check the rectangular hole position in the photo below.)

(2) Close the Document cover to adhere the Cushion to the Document cover.



(3) Open the Document cover, and press the Cushion where the Velcro tapes are pasted on to adhere.



Chapter 6 Adjustment/Settings

6.1 Maintenance Mode

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

Note on Maintenance Mode **05**

1: Before performing the sub-scanning magnification adjustment, Offset adjustment, or White level adjustment, set the user's inherent adjustment value to the default value.
The adjustment is not performed properly if the offset adjustment value and magnification adjustment value are set individually.

[Default value setting method]
Check the following items on the Software Operation Panel. If you found any individual setting values, modify them before adjustment.
Software Operation Panel ➔ Device Setting ➔ Offset
- Offset setting: "0" for ADF (front) Main/Sub-scanning and ADF (back) Main/Sub-scanning
- Vertical magnification adjustment: "0.0" % for ADF/Flatbed
Software Operation Panel ➔ Device Setting 2 ➔ Page edge filler
- "0" for Top/Bottom/Right/Left
*** After changing the setting values above, write into EEPROM to reflect the setting.**

2: If you want to perform "White level adjustment" for Flatbed with a "Black document holding pad" installed onto the scanner, replace it with the standard "White document holding pad" before starting the adjustment.
If you cannot install the standard "White document holding pad", pile up three white reference sheets and close the "Black document holding pad", and then start adjustment.
*** If White level adjustment is performed with a "Black document holding pad" installed, the correct offset may not be acquired which results in abnormal image (the image is too bright).**

6.1.1 Activating the Maintenance Mode and Mode Types

(1) How to activate the Maintenance mode

Open the ADF cover and press the Power button while holding down the Scan/Stop button to turn ON the power. Keep holding the Scan/Stop button down until Screen T04 is displayed. This will put the scanner into the Maintenance mode. While in Maintenance mode, the scanner interface is off-line.
The following display appears during activation of Maintenance mode.

Screen T01

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

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

Screen T04

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

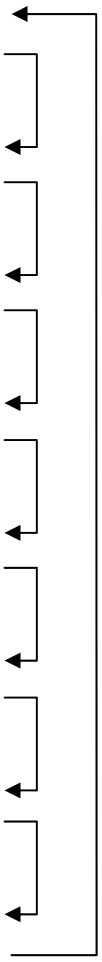
(2) Test/adjustment items of the Maintenance mode

The following lists test/adjustment items #1 ~ #8 that are supported by the scanner.

Mode #1: Paper feeding test and Sensor test
Mode #2: 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
Mode #8: Ultra sonic sensor adjustment

(3) How to change the Maintenance mode

To change the Maintenance modes (#1 ~ #7), press the Function button on the operator panel. The display changes as follows. Mode #1 is the default.

Maintenance mode No.	Display			Maintenance mode	Related section
	Function No. Display	Power LED	Status transition		
#1		ON		Paper feeding test and Sensor test	6.1.2
#2		ON		Sub-scanning magnification adjustment	6.1.3
#3		ON		Offset adjustment	6.1.4
#4		ON		White level adjustment	6.1.5
#5		ON		Consumables counter display and reset	6.1.6
#6		ON		Miscellaneous information display	6.1.7
#7		ON		EEPROM data restore	6.1.8
#8		ON		Ultrasonic sensor adjustment * Pressing the Function button returns to #1.	6.1.9

(4) How to start the Maintenance mode

Select a Maintenance mode and press the Scan/Stop button. The scanner activates the selected Maintenance mode.

(5) How to exit the Maintenance mode

Keep pressing the Power button to turn OFF the scanner.
If you exited the Maintenance mode before saving the adjustment result, the result will not be reflected.

6.1.2 Maintenance Mode #1: Paper feeding, Background switchover and Sensor test

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

[How to start]

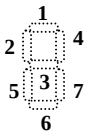
(1) From screen T04, press the Scan/Stop button. The selection screen for scanning speed/sensor test appears. A number is shown on the Function No. Display indicating the selected scanning speed or test mode as follows.

Function No. Display	Scanning speed/test mode	Remarks
0	200 dpi	Default
1	240 dpi	
2	300 dpi	
3	400 dpi	
4	600 dpi	
5	(Reserved)	
6	Background switchover test	
7	Sensor test	

(2) The scanning speed/test mode is changed by pressing the Function button. To test the continuous feeding operation, select the desired scanning speed (this varies depending on the scanning resolution) from 0 ~ 4.
When pressing the Scan/Stop button with paper on the ADF paper chute (Empty sensor ON), the ADF scanning starts. Without paper on the ADF paper chute, the FB scanning starts.

(3) By pressing the Scan/Stop button while "7" is shown on the display, the scanner enters the 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 Empty sensor status	Illuminates when the sensor is ON. (Paper is detected)
	5: indicates ADF Cover open sensor status	Illuminates when the sensor is OFF. (Cover is open)
	4: indicates TOP sensor status	Illuminates when the sensor is ON. (Paper is detected)
	7: indicates the Multifeed sensor status	Illuminates when the sensor is ON. (Paper is detected)
	1: indicates OMR sensor status	Illuminates when the sensor is ON. (Paper is detected)
	3: indicates Pick sensor status	Illuminates when the sensor is ON. (Paper is detected)
	6: indicates Document cover sensor status	Illuminates when the sensor is ON. (Cover is open)

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

1. Press the Function button. The Feed motor and Pick motor rotate.
2. Set the document on the ADF paper chute.

[How to end]

Press the Send to button. The test stops and the Maintenance mode selection screen (T04) appears. The test also terminates when no paper remains on the ADF paper chute. To exit the Maintenance mode completely, keep pressing the Power button to turn the scanner OFF.

6.1.3 Maintenance Mode #2: Sub-scanning magnification adjustment

In this mode, the magnification correction values for sub-scanning (vertical) are automatically calculated to satisfy the following adjustment value.

Adjustment value: Within ±1.0% (Without stop and start during scanning)
If stopped and started during scanning, the adjustment value is within ±2.0.

NOTICE

Before this adjustment, obtain the Test sheet described in the figure 6.1.3. This is an A3 size sheet of paper.

Notes on Sub-scanning magnification adjustment 05

1: Before performing the sub-scanning magnification adjustment, set the user's inherent adjustment value to the default value.
The adjustment is not performed properly if the offset adjustment value and magnification adjustment value are set individually.

[Default value setting method]
Check the following items on the Software Operation Panel. If you found any individual setting values, modify them before adjustment.
Software Operation Panel ➔ Device Setting ➔ Offset
- Offset setting: "0" for ADF (front) Main/Sub-scanning and ADF (back) Main/Sub-scanning
- Vertical magnification adjustment: "0.0" % for ADF/Flatbed
Software Operation Panel ➔ Device Setting 2 ➔ Page edge filler
- "0" for Top/Bottom/Right/Left
*** After changing the setting values above, write into EEPROM to reflect the setting.**

[How to start]
(1) From screen T04, Press the Function button once to select F (Maintenance mode #2) and press the Scan/Stop button. A number is shown on the Function No. Display indicating the magnification to be adjusted as follows.

Function No. Display	Offset to be adjusted	Remarks
0	ADF sub-scanning magnification adjustment	Default Prepare the test sheet described in figure 6.1.3.
1	FB sub-scanning magnification adjustment	Prepare the test sheet described in figure 6.1.3.

(2) Change the selection by pressing the Function button.
(3) When adjusting the ADF, set a white A3 size sheet (Figure 6.1.3) on the ADF paper chute in Portrait orientation, and adjust the sheet guide to the width of the sheet.

For the FB adjustment, set a white A3 size sheet (Figure 6.1.3) aligning its corner to the corner of the Document bed (Section 7.1.4), and leave the Document cover open. In case the optional black document pad is attached, close the Document cover.

Press the Scan/Stop button to begin the adjustment operation.

[How to abort]

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

If 0 is displayed, the sub-scanning magnification is adjustment has been successful. Go to item No.4.

If C is displayed, the sub-scanning magnification adjustment has failed. Go to item No.5.

(4) When the sub-scanning magnification adjustment is completed successfully

If the sub-scanning magnification adjustment is completed successfully, Screen T21 appears. To save the adjustment result, press the Function button. If not, press the Send to button.

Screen T21

Function No. Display	Scanner status	Available buttons
	Displays "o" without blinking. The adjustment has been successful.	Function button: Displays screen T22 and writing offset correction value in EEPROM is available. Send to button: Terminates this mode and returns to screen T04.

After Function button is pressed, Screen T22 is displayed. To write the adjustment result, press the Scan/Stop and the Function buttons simultaneously. The writing operation begins. Screen T23 is displayed during the operation, and T24 is displayed when writing is completed.

Screen T22

Function No. Display	Scanner status	Available buttons
	"o" (lower half) blinks. Confirming whether the correction value is written to EEPROM.	Scan/Stop + Function button: Begin writing the offset correction value into EEPROM. During writing operation, screen T23 is displayed. Screen T24 is displayed when writing is completed. Send to button: Terminates this mode and returns to screen T04.

Screen T23

Function No. Display	Scanner status	Available buttons
	"L" lights without blinking. Correction value is being written to EEPROM.	All buttons are disabled.

Screen T24

Function No. Display	Scanner status	Available buttons
	"o" (upper half) lights without blinking. The value has been written successfully.	Send to button: Terminates this mode and returns to screen T04.

Press the Send to button to terminate this mode and return to screen T04.

To exit the Maintenance mode completely, keep pressing the Power button to turn the scanner OFF.

(5) When the sub-scanning magnification adjustment fails

When the sub-scanning magnification adjustment fails, Screen T25 appears. Press the Function button to see what error has occurred. After checking the error, press the Send to button to return to Screen T04.

Screen T25

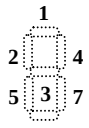
Function No. Display	Scanner status	Available buttons
	Displays "c" without blinking. The adjustment has failed.	Function button: Displays error information (screen T26) Send to button: Terminates this mode and returns to screen T04.

NOTICE

The major reason for adjustment failure is incorrect setting of the test sheet.

Set the test sheet correctly and try the magnification adjustment again.

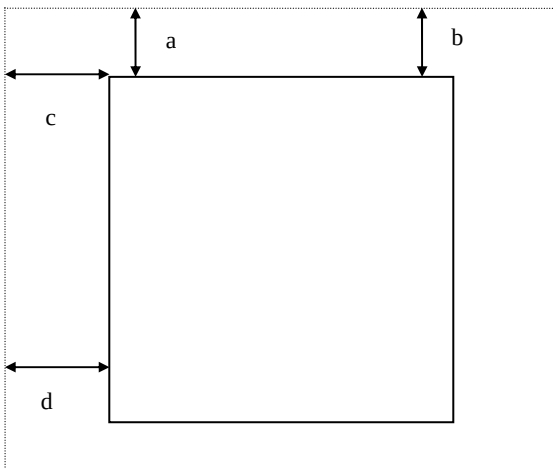
Screen T26

Function No. Display	Description	Countermeasure when abnormal termination frequently occurs
	1:Cannot detect the leading edge of the document (black detection failed)	Conduct necessary operation by referring to step (2) and later in section 4.3.7 or step (2) and later in section 4.3.10.
	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: Excessive skew A	
	7: Excessive skew B	

Skew A and B are calculated by the following expression.

Skew A = a – b

Skew B = c – d



<Available buttons on screen T26>

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

[Test sheet]
Use the test sheet for magnification / offset adjustment that meets the following specification (A3 copy paper is allowed).

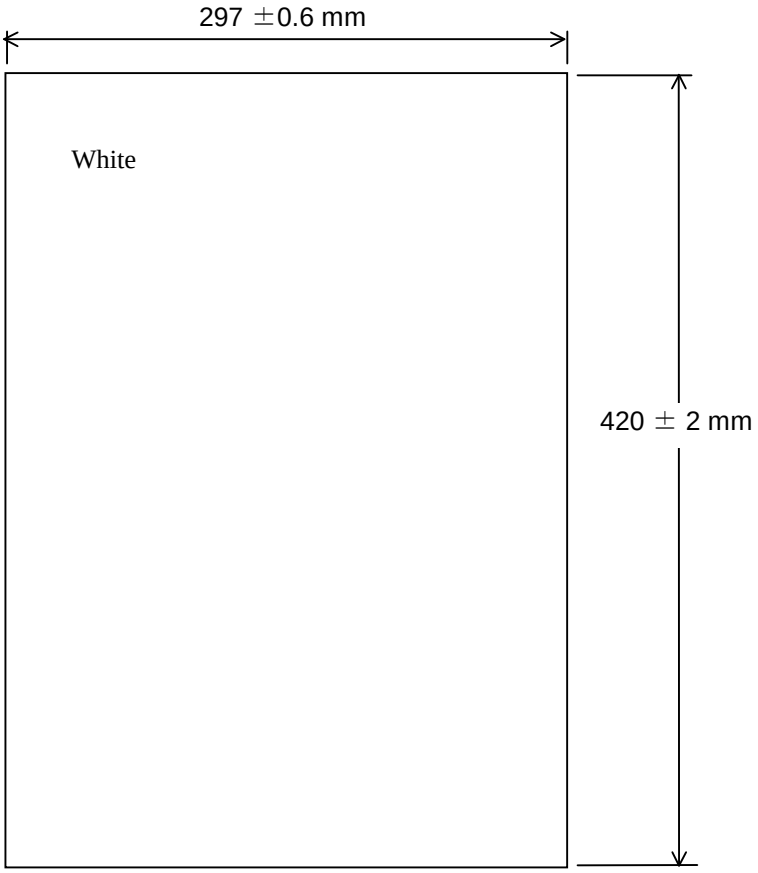


Figure 6.1.3 Magnification / Offset Adjustment Test Sheet

6.1.4 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:

<Target offset value>
Main scanning: The largest offset of A6 or larger size of document shall be: ± 24 dot (@600dpi)
Sub-scanning: The largest offset of A6 or larger size of document shall be: ± 33 dot (@600dpi)

NOTICE

1) The value above is the target value of offset adjustment. Image specification is as follows:
   FB) Main scanning: 0 to 1.5mm for both top and bottom of left edge
   Sub-scanning: 0 to 2.0mm for both left and right of leading edge
   ADF) Main scanning: Smaller offset of top or bottom of left edge shall be 0 to 1.5mm.
   Sub-scanning: Smaller offset of left or right of leading edge shall be 0 to 2.0mm.
2) Before this adjustment, obtain the Test sheet described in the figure 6.1.3. This is an A3 size sheet of paper.

Notes on Offset adjustment 05

1: Before performing the Offset adjustment, set the user's inherent adjustment value to the default value. The adjustment is not performed properly if the offset adjustment value and magnification adjustment value are set individually.

[Default value setting method]
Check the following items on the Software Operation Panel. If you found any individual setting values, modify them before adjustment.
Software Operation Panel ➔ Device Setting ➔ Offset
- Offset setting: "0" for ADF (front) Main/Sub-scanning and ADF (back) Main/Sub-scanning
- Vertical magnification adjustment: "0.0" % for ADF/Flatbed
Software Operation Panel ➔ Device Setting 2 ➔ Page edge filler
- "0" for Top/Bottom/Right/Left
*** After changing the setting values above, write into EEPROM to reflect the setting.**

[How to start]
(1) From screen T04, press the Function button twice to select  (Maintenance mode #3) and press the Scan/Stop button. A number is shown on the Function No. Display indicating the location of the offset to be adjusted.

Function No. Display	Offset to be adjusted	Remarks
0	ADF front	Default Prepare the test sheet described in Figure 6.1.3.
1	ADF back	Prepare the test sheet described in Figure 6.1.3.
2	FB	Prepare the test sheet described in Figure 6.1.3.

(2) Change the selection by pressing the Function button.
(3) When adjusting the ADF, set a white A3 size sheet (Figure 6.1.3) on the ADF paper chute in Portrait orientation, and adjust the sheet guide to the width of the sheet.

For the FB adjustment, set a white A3 size sheet (Figure 6.1.3) aligning its corner to the corner of the Document bed (Section 7.1.4), and leave the Document cover open. In case the optional black document pad is attached, close the Document cover.
Press the Scan/Stop button to begin the adjustment operation.

[How to abort]
Press the Send to button during the adjustment operation. The operation stops and the Maintenance mode selection screen (T04) appears.

If is displayed, the offset adjustment has been successful. Go to item No.4.

If is displayed, the offset adjustment has failed. Go to item No.5.

(4) When the offset adjustment is completed successfully

If the offset adjustment is completed successfully, Screen T31 appears. To save the adjustment result, press the Function button. If not, press the Send to button.

Screen T31

Function No. Display	Scanner status	Available buttons
	Displays "o" without blinking. The adjustment has been successful.	Function button: Displays screen T32 and writing offset correction value in EEPROM is available. Send to button: Terminates this mode and returns to screen T04.

After Function button is pressed, Screen T32 is displayed. To write the adjustment result, press the Scan/Stop and the Function buttons simultaneously. The writing operation begins. Screen T33 is displayed during the operation, and T34 is displayed when writing is completed.

Screen T32

Function No. Display	Scanner status	Available buttons
	"o" (lower half) blinks. Confirming whether the correction value is written to EEPROM.	Scan/Stop + Function button: Begin writing the offset correction value into EEPROM. During writing operation, screen T33 displayed. Screen T34 is displayed when writing is complete. Send to button: Terminates this mode and returns to screen T04.

Screen T33

Function No. Display	Scanner status	Available buttons
	"L" lights without blinking. Correction value is being written to EEPROM.	All buttons are disabled.

Screen T34

Function No. Display	Scanner status	Available buttons
	"o" (upper half) lights without blinking. The value has been written successfully.	Send to button: Terminates this mode and returns to screen T04.

Press the Send to button to terminate this mode and return to screen T04.

To exit the Maintenance mode completely, keep pressing the Power button to turn the scanner OFF.

(5) When the offset adjustment fails

When the offset adjustment fails, Screen T35 appears. Press the Function button to see what error has occurred. After checking the error, press the Send to button to return to Screen T04.

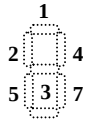
Screen T35

Function No. Display	Scanner status	Available buttons
	Displays "c" without blinking. The adjustment has failed.	Function button: Displays error information (screen T36) Send to button: Terminates this mode and returns to screen T04.

NOTICE

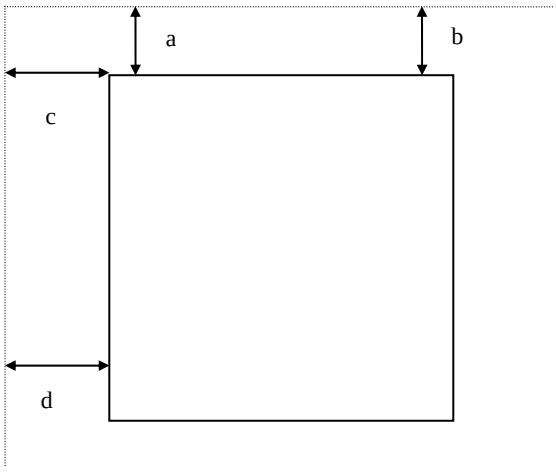
The major reason for adjustment failure is incorrect setting of the test sheet.
Set the test sheet correctly and try the offset adjustment again.

Screen T36

Function No. Display	Description	Countermeasure when abnormal termination frequently occurs
	1:Cannot detect the leading edge of the document (black detection failed)	Conduct necessary operation by referring to step (2) and later in section 4.3.6 or step (3) and later in section 4.3.9.
	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: Excessive skew A	
	7: Excessive skew B	

Skew A and B are calculated by the following expression.

Skew A = a – b
Skew B = c – d



<Available buttons on screen T36>
Send to button: Terminates this mode and returns to screen T04.

6.1.5 Maintenance Mode #4: White level adjustment

In this mode, the white level correction values for the ADF and FB are automatically adjusted.

NOTICE

Before this adjustment, obtain the white level adjustment sheet (A4 coated paper) described in Section 5.4.

Notes on White level adjustment 05

1: Before performing the White level adjustment, set the user's inherent adjustment value to the default value. The adjustment is not performed properly if the offset adjustment value and magnification adjustment value are set individually.

[Default value setting method】
Check the following items on the Software Operation Panel. If you found any individual setting values, modify them before adjustment.
Software Operation Panel ➔ Device Setting ➔ Offset
- Offset setting: "0" for ADF (front) Main/Sub-scanning and ADF (back) Main/Sub-scanning
- Vertical magnification adjustment: "0.0" % for ADF/Flatbed
Software Operation Panel ➔ Device Setting 2 ➔ Page edge filler
- "0" for Top/Bottom/Right/Left
*** After changing the setting values above, write into EEPROM to reflect the setting.**

2: If you want to perform "White level adjustment" for Flatbed with a "Black document holding pad" installed onto the scanner, replace it with the standard "White document holding pad" before starting the adjustment. If you cannot install the standard "White document holding pad", pile up three white reference sheets and close the "Black document holding pad", and then start adjustment.
*** If White level adjustment is performed with a "Black document holding pad" installed, the correct offset may not be acquired which results in abnormal image (the image is too bright).**

[How to start]
(1) From screen T04, press the Function button three times to select 8 (Maintenance mode #4) and press the Scan/Stop button. A number is shown on the Function No. Display indicating the location of the white level to be adjusted.

Function No. Display	White level to be adjusted	Remarks
0	ADF front	Default Use the white level adjustment sheet described in section 5.4.
1	ADF back	Use the white level adjustment sheet described in section 5.4.
2	FB	

(2) Change the selection by pressing the Function button.
(3) For the ADF adjustment, set the adjustment test sheet (Section 5.4) on the Chute unit in landscape orientation and adjust the sheet guide to the width of the test sheet.

For the FB adjustment, set the test sheet (Section 5.4) on the Document bed (Section 7.1.4) and close the Document cover.

Press the Scan/Stop button to begin the adjustment operation.

NOTICE

The adjustment starts approx. 10 seconds after pressing the Scan/Stop button.

[How to abort]
Press the Send to button during the adjustment operation. The operation stops and the Maintenance mode selection screen (T04) appears.

If  is displayed, the white level adjustment has been successful. Go to item No.4.

If  is displayed, the white level adjustment has failed. Go to item No.5.

NOTICE

After scanning the white level adjustment sheet, it takes approx. 10 seconds for the scanner to calculate the level adjustment.

(4) When the white level adjustment is completed successfully

If the white level adjustment is completed successfully, Screen T41 appears. To save the adjustment result, press the Function button. If not, press the Send to button.

Screen T41

Function No. Display	Scanner status	Available buttons
	Displays "o" without blinking. The adjustment has been successful.	Function button: Displays screen T42 and writing the correction value in EEPROM is available. Send to button: Terminates this mode and returns to screen T04.

After Function button is pressed, Screen T42 is displayed. To write the adjustment result, press the Scan/Stop and the Function buttons simultaneously. The writing operation begins. Screen T43 is displayed during the operation, and T44 is displayed when writing is complete.

Screen T42

Function No. Display	Scanner status	Available buttons
	"o" (lower half) blinks. Confirming whether the correction value is written to EEPROM.	Scan/Stop + Function button: Begin writing the white level correction value to EEPROM. During the writing operation, screen T43 displayed. Screen T44 is displayed when writing is complete. Send to button: Terminates this mode and returns to screen T04.

Screen T43

Function No. Display	Scanner status	Available buttons
	"L" lights without blinking. Correction value is being written to EEPROM.	All buttons are disabled.

Screen T44

Function No. Display	Scanner status	Available buttons
	"o" (upper half) lights without blinking. The value has been written successfully.	Send to button: Terminates this mode and returns to screen T04.

Press the Send to button to terminate this mode and return to screen T04.
To exit the Maintenance mode completely, keep pressing the Power button to turn the scanner OFF.

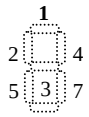
(5) When the white level adjustment fails

When the white level adjustment fails, Screen T45 appears. Press the Function button to see what error has occurred. After checking the error, press the Send to button to return to Screen T04.

Screen T45

Function No. Display	Scanner status	Available buttons
	Displays “c” without blinking. The adjustment has failed.	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 test sheet may not be the specified one. Please confirm the test sheet.	The Lamps, Optical units may be defective. Replace the defective parts.

<Available buttons at screen T46>

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

6.1.6 Maintenance Mode #5: Consumables counter display and Reset

In this mode, the following consumable counters cab be displayed and reset:

- Pick counter (Abrasion counter for the Pick roller)
- Brake roller counter (Abrasion counter for the Brake roller)

[How to operate]

(1) From screen T04, press the Function button four times to select  (Maintenance mode #5) and press the Scan/Stop button. A number is shown on the Function No. Display indicating the counters as follows.

Function No. Display	Display	Remarks
0	Pick counter (Abrasion counter for Pick roller)	Default
1	Brake roller counter (Abrasion counter for Brake roller)	

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

(3) The counter is displayed as follows when pressing the Scan/Stop button.

Counter	Display
Pick counter	The counter displays 8 digits in total, 1 number at a time (1 blink), 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 begins. The counter displays "0" until it reaches 500, and increases in increments of 10 after 500. eg. When the counter is "16,245", "-00016240" is displayed in the following order: "-" → "0" → "0" → "0" → "1" → "6" → "2" → "4" → "0"
Brake roller counter	See above.

The following buttons are available during the 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	Power LED	Scanner status	Available buttons
	ON	"o" (lower half) blinks. Counter is ready to be reset.	Scan/Stop + Function button: Begin resetting the displayed counter value to 0. During the reset operation, screen T52 displayed. Screen T53 is displayed when the counter is reset. Send to button: Terminates this mode and returns to screen T04.

Screen T52

Function No. Display	Scanner status	Available buttons
	"L" lights without blinking. The counter is being reset.	All buttons are disabled.

Screen T53

Function No. Display	Scanner status	Available buttons
	"o" (upper half) lights without blinking. Counter reset is complete.	Send to button: Terminates this mode and returns to screen T04.

Press the Send to button to terminate this mode and return to screen T04.

To exit the Maintenance mode completely, keep pressing the Power button to turn the scanner OFF.

6.1.7 Maintenance Mode #6: Miscellaneous information display

In this mode, the following information is displayed:

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

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

[How to start]

(1) From screen T04, press the Function button five times to select 8 (Maintenance mode #6) and press the Scan/Stop button. A number is shown on the Function No. Display indicating the information as follows.

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 the Function button.

(3) The information is displayed as follows when pressing the Scan/Stop button.

Information	Display
Firmware version number	The version numbers (4 digits for each) of firmware for interface control (SDC) and for mechanical control (MDC) are displayed following the symbol "-". eg. When the SDC version is "A00" and the MDC version is "B00" (*1), "A" is converted to "01" and "B" is converted to "02" so the scanner displays them in the following order: <SDC> <MDC> "-" → "0" → "1" → "0" → "0" → "-" → "0" → "2" → "0" → "0" "A" is converted to "01" "B" is converted to "02"
Starting date of the scanner	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 the ADF	The accumulated number of scanned by the ADF is displayed in 8 digits from left to right, following the symbol "-". (If the counter does not reach 8 digits, 0 is added to blank digits.) The counter displays "0" until it reaches 10, and increases in increment of 10. You cannot reset this counter. eg. When the accumulated number is "16,245", "00016240" is displayed in the following order: "-" → "0" → "0" → "0" → "1" → "6" → "2" → "4" → "0"
The accumulated number of scanned by the FB	See the case of ADF.

*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 the 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 the Function No. display cannot display alphabets, an alphabet is expressed by two digits as follows:

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

[How to abort]

Press the Send to button to terminate this mode and return to screen T04.

To exit the Maintenance mode completely, keep pressing the Power button to turn the scanner OFF.

6.1.8 Maintenance Mode #7: EEPROM data restore

When replacing the Panel PCA, the EEPROM data on the Panel PCA must 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) From screen T04, press the Function button six times to select  (Maintenance mode #7) and press the Scan/Stop button. The following display appears.

Screen T71

Function No. Display	Scanner status	Available buttons
	"o" (lower half) blinks. Confirming whether the data is restored or not.	Scan/Stop + Function button: Returns the data from the Control PCA to the EEPROM. During the restore operation, screen T72 is displayed. Send to button: Terminates this mode and returns to screen T04.

Screen T72

Function No. Display	Scanner status	Available buttons
	"L" lights without blinking. The data is being restored.	All buttons are disabled.

When the data restoration is successful, the following display appears. Press the Send to button: to return to screen T04.

Screen T73 Normal termination

Function No. Display	Scanner status	Available buttons
	Displays "o" (upper half) without blinking. The data has been restored successfully.	Send to button: Terminates this mode and returns to screen T04.

When no data exists on the Control PCA, the following display appears. Press the Send to button to return to screen T04.

Screen T74 No data

Function No. Display	Scanner status	Available buttons
	Displays "c" without blinking.	Send to button: Terminates this mode and returns to screen T04.

6.1.9 Maintenance Mode #8: Ultra sonic sensor adjustment

In this mode, the optimum Ultra sonic sensor (US sensor) output is automatically adjusted in order to improve the multifeed detection accuracy.

NOTICE

Before this adjustment, obtain the adjustment sheet (A4 size thick paper) described in section 6.4.

[How to start]

(1) From screen T04, press the Function button seven times to select  (Maintenance mode #8). Place the adjustment sheet on the ADF paper chute and press the Scan/Stop button. The adjustment will begin.

[How to abort]

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

If  is displayed, the adjustment was successful. Go to item No.4.

If  is displayed, the adjustment failed. Go to item No.5.

NOTICE

After scanning the US sensor adjustment sheet, it takes approx. 10 seconds for the scanner to calculate the level adjustment.

(4) When the ultra sonic sensor adjustment is successful

If the ultra sonic sensor adjustment is successful, Screen T81 appears. To save the adjustment result, press the Function button. If not, press the Send to button.

Screen T81

Function No. Display	Scanner status	Available buttons
	Displays "o" without blinking. The adjustment has been successful.	Function button: Displays screen T82 and writing the correction value in EEPROM is available. Send to button: Terminates this mode and returns to screen T04.

After the Function button is pressed, Screen T82 is displayed. To write the adjustment result, press the Scan/Stop and the Function buttons simultaneously. The writing operation begins. Screen T83 is displayed during operation, and T84 is displayed when writing has completed.

Screen T82

Function No. Display	Scanner status	Available buttons
	"o" (lower half) blinks. Confirming whether the correction value is written to EEPROM or not.	Scan/Stop + Function button: Begin writing the white level correction value into EEPROM. During the writing operation, screen T83 displayed. Screen T84 is displayed when writing is complete. Send to button: Terminates this mode and returns to screen T04.

Screen T83

Function No. Display	Scanner status	Available buttons
	"L" lights without blinking. Correction value is being written to EEPROM.	All buttons are disabled.

Screen T84

Function No. Display	Scanner status	Available buttons
	"o" (upper half) lights without blinking. The value has been written successfully.	Send to button: Terminates this mode and returns to screen T04.

Press the Send to button to terminate this mode and return to screen T04.

To exit the Maintenance mode completely, keep pressing the Power button to turn the scanner OFF.

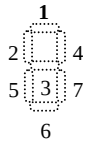
(5) When the ultra sonic sensor adjustment fails

When the ultra sonic sensor adjustment fails, Screen T85 appears. Press the Function button to see what error has occurred. After checking the error, press the Send to button to return to Screen T04.

Screen T85

Function No. Display	Scanner status	Available buttons
	Displays “c” without blinking. The adjustment has failed.	Function button: Displays error information (screen T86) Send to button: Terminates this mode and returns to screen T04.

Screen T86

Function No. Display	Description	Countermeasure when abnormal termination frequently occurs
	1: Adjustment failed because of incorrect sensor output.	The US sensor or US PCA is defective.

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

6.2 Saving EEPROM Data

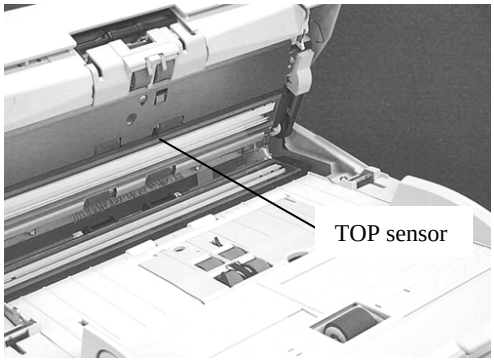
The EEPROM data on the Panel PCA can be saved to the flash memory of the Control PCA. This operation is required when replacing the Panel PCA. Since this operation is performed when the Panel PCA is malfunctioning, the following procedure was designed to save the EEPROM data without the use of the operator panel.

NOTICE

1. Do not perform this procedure unless the Panel PCA is malfunctioning.
2. The Panel PCA from which the data was saved to the Control PCA cannot be used again.
3. Make sure to have a new Panel PCA before saving the EEPROM data.
4. If EEPROM data cannot be saved/restored, the device setting returns to the factory default. Explain your customer and ask to configure the device setting again. (See Note 2.)

[How to save the EEPROM data onto the Control PCA]

1. Open the ADF cover. While pressing the TOP sensor lever (ON), power on the scanner. "P" -> "H " are displayed.
2. Let go of the TOP sensor lever. Press the TOP sensor longer than 1 second twice.
3. Close the ADF cover. "L" is displayed when the Function No. Display is working normally.
4. After more than 5 seconds elapse, open the ADF cover.
5. When the EEPROM data is successfully saved, the ADF front lamp blinks 3 times and 0 is displayed on the Function No. Display. In case the EEPROM data is not successfully saved, the lamp does not blink and E is displayed on the Function No. Display.



NOTICE

1. If EEPROM data is saved to 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.
2. If EEPROM data cannot be saved/restored, the unique setting will not be taken over. The device setting will return to the factory default (initial setting).

6.3 Test Item List

No.	Maintenance Mode	6.1.2		6.1.3	6.1.4	6.1.5	6.1.6	6.1.7	6.1.8	6.1.9
		Paper feeding test	Sensor test	Sub-scanning magnification adjustment	Offset adjustment	White level adjustment	Consumable counter display & reset	Miscellaneous information display	EEPROM data restore	Ultrasonic sensor adjustment
1	ADF FIX UNIT	●	●	●	●	●	●			●
2	ADF REV UNIT	●	●	●	●	●	●			●
3	BACK GROUND UNIT F	●			●	●				
4	BACK GROUND UNIT B/BS	●			●	●				
5	INVERTER	●				●				
6	US SENSOR	●								●
7	US PCA	●								●
8	SENSOR (For Pick arm position detection) (For Background switchover mechanism detection) (For Empty sensor)	●	●							
9	PICK SENSOR	●	●							
10	DF SENSOR	●								
11	GUIDE S ASSY	●								
12	PICK MOTOR	●		●						
13	HK RING ME	●		●	●					
14	BW MOTOR (For Pick arm drive) (For Background switchover mechanism drive)	●	●							
15	ADF JUNCTION PCA	●								
16	FEED MOTOR	●		●	●					
17	BELT ADF	●		●	●					
18	TOP SENSOR	●	●		●					
19	SENSOR OP	●	●							
20	OPTICAL UNIT ADF	●			●	●				
21	FB UNIT	●	●	●	●	●				
22	FB MOTOR	●		●	●					
23	CCD CABLE FB	●								
24	FB JUNCTION PCA	●								
25	OPTICAL UNIT FB	●			●	●				
26	LAMP FB	●		●	●	●				
27	DOCUMENT COVER	–								
28	CUSHION	–								
29	HINGE UNIT	–								
30	CONTROL PCA	●								
31	(Reserved)									
32	FUSE 2 (4.0A)	●								
33	FUSE 3 (2.5A)	●								
34	FUSE	●								
35	POWER SUPPLY	●								
36	STACKER ASSY	●		–	–	–	–	–	–	–
37	CHUTE ASSY	●		–	–	–	–	–	–	–
38	CHUTE ROLLER	●		–	–	–	–	–	–	–
39	ADF CABLE	●								
40	PANEL UNIT	●							●*1	
41	PANEL PCA	●							●*1	
42	FAN ASSY	●								
43	CGA BOARD	●								
44	DIMM	●								
45	ADF UNIT	●	●	●	●	●	●			●

*1: Before replacing the Panel Unit and/or the Panel PCA, be sure to save the EEPROM data (Section 6.2).

Chapter 7 Operation and Daily Maintenance

7.1 Basic Operation

7.1.1 Turning the Scanner ON/OFF

Turning the Scanner ON

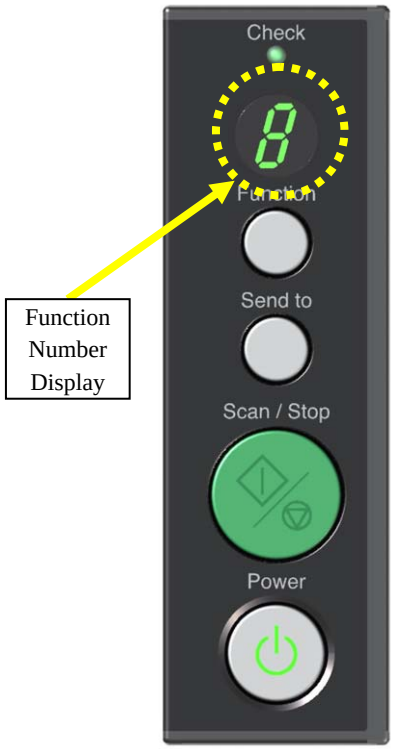
NOTICE

For a SCSI cable connection, be sure to turn on your computer AFTER turning on the scanner, and making sure number "1" indicates on the Function Number Display.

(1) Press the "I" side of the Main Power Switch of the scanner.

(2) Press the [Power] button on the Operator Panel.
The scanner is turned ON, and the Power LED on the Operator Panel lights in green.

Note that while the scanner is being initialized, the indication of the Function Number Display changes as follows; "8" → "P" → "0" → "1", where "1" means that the Operator Panel is in the Ready Status.



NOTICE

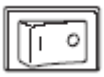
Use the Main Power Switch to turn on the power if "Power SW Control" using the [Power] button on the Operator Panel has been disabled.

Turning the Scanner OFF

(1) Press the [Power] button on the Operator Panel for more than 2 seconds.
→ The power is turned off and the Power LED goes off.

NOTICE

• If you will not use the scanner for a long time, press the "O" side of the Main Power Switch to turn off the power. Then, unplug the scanner from the power outlet.

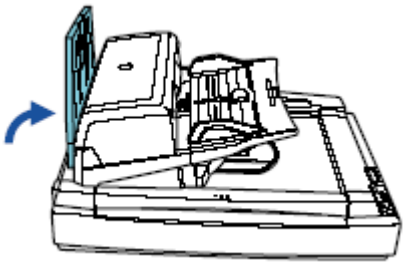


• Use the Main Power Switch to turn off the power if "Power SW Control" using the [Power] button on the Operator Panel has been disabled.

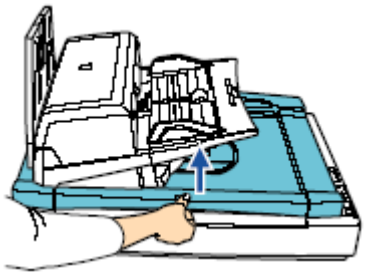
7.1.2 Changing the ADF Position

Endusers can select ADF positions and directions. The following is the procedure for changing the ADF position.

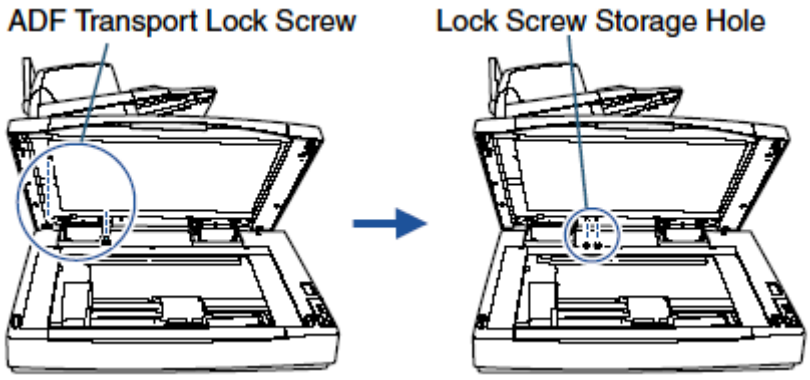
(1) Raise the Stacker.



(2) Holding the handle, lift up the Document Cover.



(3) Remove the ADF Transport Lock Screws, and install them in the Lock Screw Storage Holes.



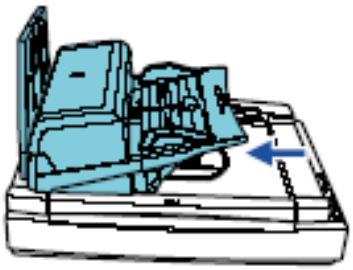
NOTICE

Make sure that the ADF Transport Lock Screws have been placed in the Lock Screw Storage Holes.

(4) Gently close the Document Cover.

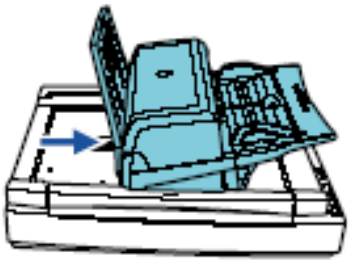
(5) Change the position of the ADF.
Slide the ADF until it clicks into place.
The three adjustable positions of the ADF are:

- Traditional (Factory default)



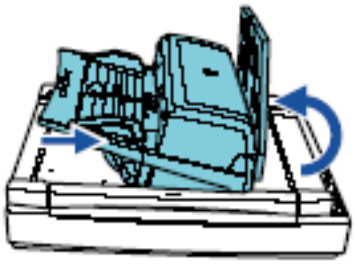
- Standard (Space-saving type and for right-handed operators)

Slide the ADF to the center of the scanner.



- Reversed (Space-saving type and for left-handed operators)

Slide the ADF toward the center of the scanner, and then rotate it counterclockwise by 180 degrees.



NOTICE

1. Be careful not to pinch your fingers while sliding the ADF.
2. Do not rotate the ADF more than 180 degrees. Doing so may damage the ADF.

(6) Let the Stacker down.

7.1.3 Loading Documents on the ADF (images-TBD)

This section describes how to load documents on the ADF.

(1) Align the edge of your document.

1 Confirm that all the documents have the same width.

2 Check the number of sheets in the document stack.

The following is a guideline for the limits on loadable sheets:

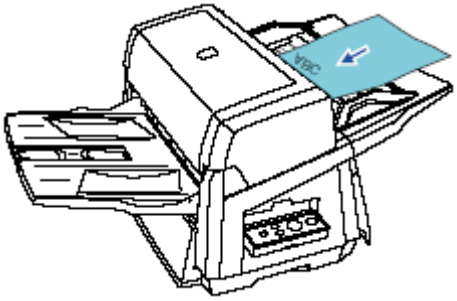
- A4/letter-size paper or smaller that makes a document stack of 20 mm or less (80 g/m^2)
- A4/letter-size paper or larger that makes a document stack of 10 mm or less (80 g/m^2)

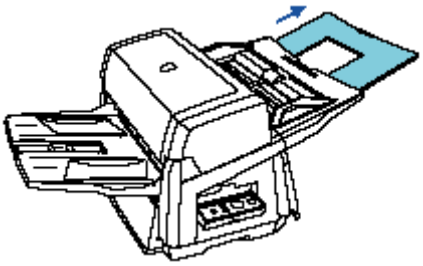
(2) Fan the documents as follows:

1 Hold the document stack with both hands and fan it out several times.

2. Turn the document stack by 90 degrees, and then fan it in the different orientation again.
3. Align the edge of the document.

(3) Load the documents face down on the ADF Paper Chute.





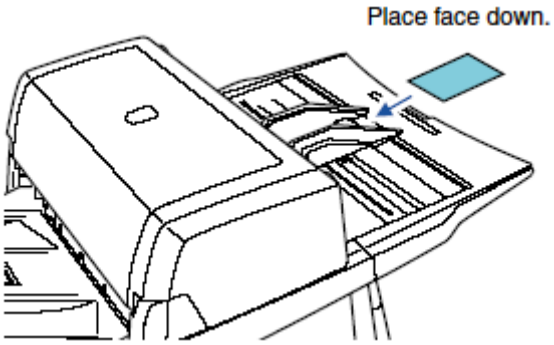
Note: If the documents to scan are long, slide the Paper Chute Extension out from the ADF Paper Chute to the position where the documents can be fully supported.

NOTICE

When scanning plastic cards, you need to pay attention to the following:

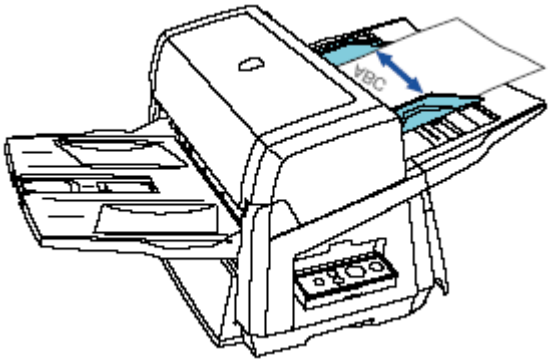
- Place one card on the ADF Paper Chute at a time.
- It is recommended that the front side of the card be placed face down in the ADF.
- Place the card in the following orientation (portrait).
- The card to be scanned should satisfy:

  ISO7810 type ID-1 type compliant card
  Size : 86 (height) x 54 (width) mm
  Thickness : 0.76 ± 0.08 mm
  Material : Poly vinyl chloride (PVC) or Polyvinyl chloride acetate (PVCA)
  Before scanning your card, test with a dummy card of the same material to see if it can be fed into the ADF properly.



- Embossed cards cannot be scanned.
- Cards that are excessively rigid or less flexible may not feed smoothly.
- Wipe off greasy finger marks if any from the surface of card before scanning the card.

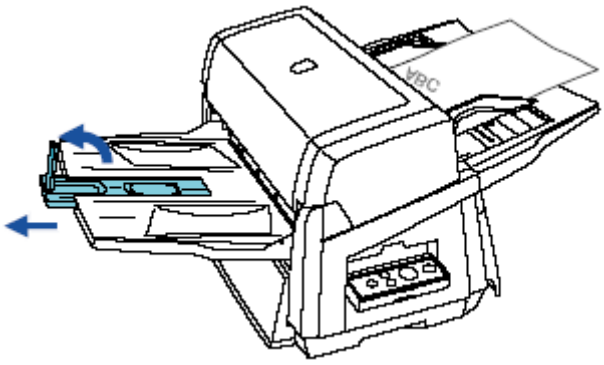
(4) Adjust the Side Guides to the width of the document.
Slide the Side Guides so they touch both edges of the document lightly.
Any gap between the guides and the document edge may cause skewed images.



NOTICE

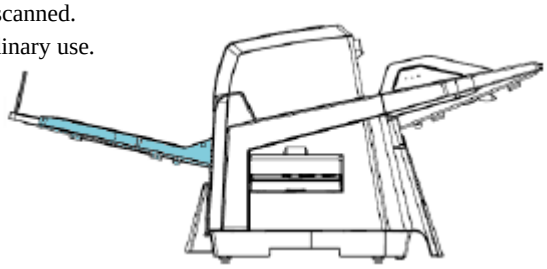
- Remove paper clips and staples from the documents before scanning.
  If a multifeed or mis-picking occurs, reduce the number of documents loaded on the Chute.
- When loading small documents, be careful not to touch the hood for the Chute Roller during scanning. Doing so may let the hood open that may catch your finger.

(5) Pull out the Stacker Extension to the length of the documents, and then raise the Paper Stopper to stop the documents.

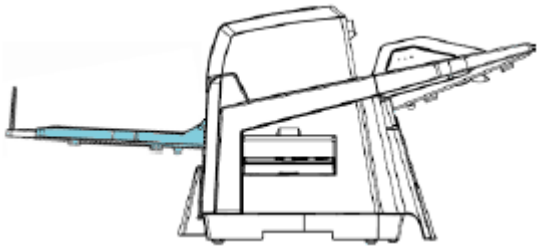


NOTICE

Adjust the height of the Stacker according to the paper type being scanned.
Select a desired height. The upper position is recommended for ordinary use.



Select the lower position to scan thin or curled documents.



The number of documents that can be loaded in the ADF decreases when the upper position is selected. (About 100 sheets if the paper weight is 80g/m^2.)

(6) Open the scanning application to begin scanning.

The following is the example of scanning procedure by ScandAll PRO.

1. Start up the ScandAll PRO.
   Select the [start] menu → [All Programs] → [Fujitsu ScandAll PRO] → [Fujitsu ScandAll PRO].
   ➔ ScandAll PRO starts up.

2. Select the [Tool] menu → [Preferences].
   ➔ The [Setup] dialog box appears.

3. On the [Scan] tab, under [Device Driver], select either of the drivers, and then click the [OK] button.
4. Select the [Scan] menu → [Select Scanner].
   ➔ The [Select Scanner] dialog box appears.

5. Select a scanner you want to use, and then click the [Select] button.
   Select the scanner model name that you connected to the PC. The indication of the scanner name depends on the scanner driver selected. If you use CGA, select "Kofax VRS Scanner."

Scanner model	TWAIN	ISIS／VRS	
	FUJITSU TWAIN32	FUJITSU ISIS	Kofax VRS
fi-6770	FUJITSU fi-6770dj	Fujitsu fi-6770	Kofax VRS Scanner
fi-6770A			
fi-6750S	FUJITSU fi-6750Sj	Fujitsu fi-6750S	---

6. Select the [Scan] menu → [Scan Settings].
   On the [Scan Settings] dialog box, specify the folder where the scanned document images are saved into.

7. On the [Scan Settings] dialog box, click the [Scanner Setting] button.
   Configure the scan parameters such as "Resolution" and "Paper size."

8. On the [Scan settings] dialog box, click the [Scan] button.

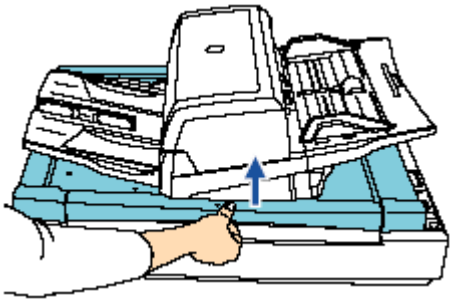
   When the scanning operation is complete, the scanned image is displayed on the ScandAll PRO window.

7.1.4 Loading Documents on the Flatbed

This section describes how to load documents on the Flatbed.

The Flatbed allows for easy scanning of thick documents such as books or irregularly-shaped documents.

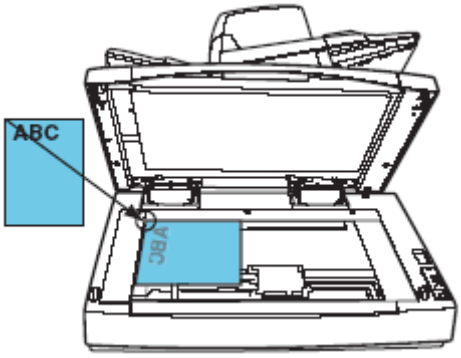
(1) Holding the handle, lift up the Document Cover.



NOTICE

Make sure that no document is left on the ADF Paper Chute or on the Stacker.

(2) Place the document to be scanned on the Document Bed with its face down and the top left corner aligned to the reference point (back, left corner of FB Glass).



(3) Gently close the Document Cover.

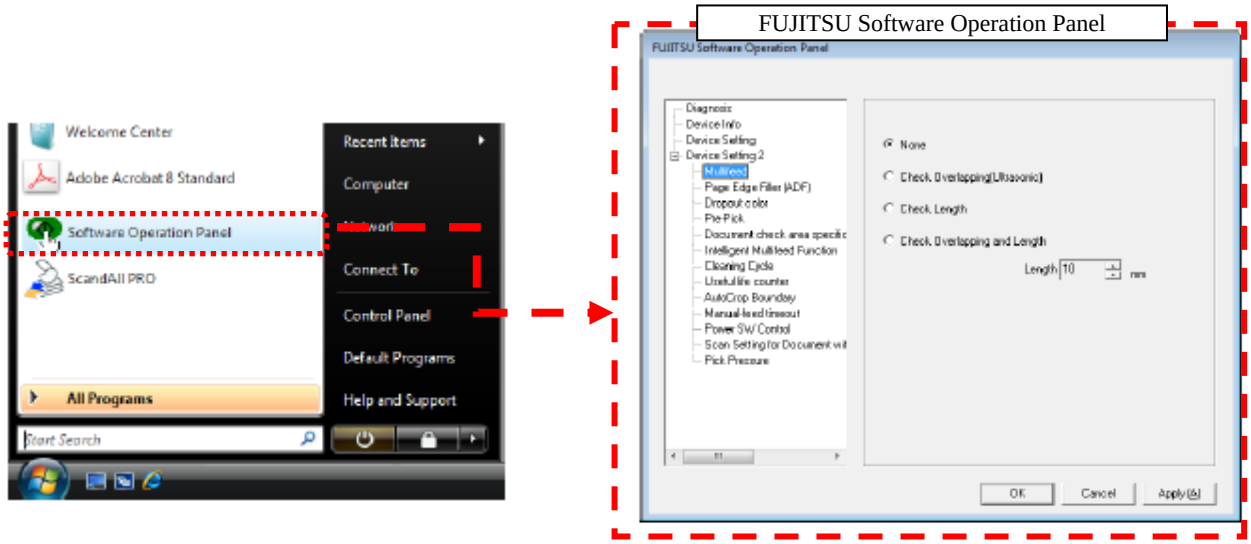
(4) Open the scanning application to begin scanning.

Note: The Document Cover with the black document holding pad is available as an option.
This type is convenient for scanning documents in black background when loading them from the flatbed.
Use of this option supports automatic page crop and deskew.
Name: Black Document Pad
Parts No.: PA03338-D960

7.1.5 Software Operation Panel

The Software Operation Panel (SOP) is installed together with the scanner divers (TWAIN/ISIS).
With this application, you can configure various settings for operating the scanner and for managing its consumables, and the setting information that is necessary to be saved is .stored in the EEPROM.

1. Confirm if the scanner is connected correctly to the PC, then power on the scanner.
2. Select the [start] menu → [All Programs] → [Scanner Utility for Microsoft Windows] → [Software Operation Panel].
   → The [Software Operation Panel] dialog box appears.



You can confirm and configure the following items on the Software Operation Panel.

- Diagnosis: Diagnoses the scanner.
- Device Info: Displays various information of the scanner.
- Device Setting: Checks the Page counter, configures Power saving, Offset and Vertical magnification adjustment.
- Device Setting 2: Configures Multifeed, Page edge filler, Dropout color, Useful life counter, etc.

* For the details of each setting, refer to the table below.

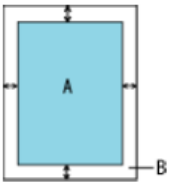
[Device setting]

Item	Explanation	Selectable Parameters	Default	Connector 1	Connector 2
				Connection via SCSI/USB connector	
Page Counter (Consumables counters)	For evaluating the consumable replacement cycle. Use this function to reset the counters after cleaning or replacing the consumables.	After cleaning/Brake Roller/Pick Roller	0 pages	Yes	Yes
		Remaining Ink (only when the imprinter option for fi-6670/fi-6670A is installed)	Shown only when the Imprinter option for fi-6670/6670A is installed		
Power saving	Specify the waiting time before entering the Power saving mode.	Setting range: 15 to 55 min. (in steps of 5 min.)	15 min.	Yes	Yes
Offset	Adjust the starting position for the document scanning.	Unit: For connection via SCSI/USB Connector 1: ADF (Front), ADF (Back) (fi-6770/fi-6770A only) Flat Bed For connection via SCSI/USB Connector 2: ADF (Back), Flat Bed Main/Sub: -2 mm to 3 mm (in steps of 0.5 mm)	Main/Sub: 0mm	Yes	Yes

[Device Setting] (Cont'd)

Item	Explanation	Selectable Parameters	Default	Connector 1	Connector 2
				Connection via SCSI/USB connector	
Vertical magnification Adjustment	Adjust the magnification in the feeding direction on the scanning side specified for [Unit].	Setting range: -3.1 to 3.1% (in steps of 0.1%)	0%	Yes	Yes

[Device Setting 2]

Item	Explanation	Selectable Parameters	Default	Connector 1	Connector 2
				Connection via SCSI/USB connector	
Multifeed	Select the method to detect multifeeds. Check either of overlapping or document length, or both. Can also be specified from the scanner driver's setting dialog box. Note the setting with the scanner driver is given a priority.	None/Check Overlapping [Ultrasonic]/Check Length/Check Overlapping and Length Selectable length (to be detected as length difference): 10, 15 or 20 mm	Check Overlapping [Ultrasonic]	Yes	Yes
Page Edge Filler (ADF) Page Edge Filler (FB)	Fill the specified width of the end sections on the scanned image with white or black color. When the backing (background) color is white, the end sections are filled with white; and when the background color is black, filled with black. Can also be specified from the scanner driver's setting dialog box. Note the setting with a larger value is given a priority. The setting here is not applied when Kofax VRS is used.	ADF: Top/Left/Right: 0 to 15 mm Bottom: -7 to 7 mm (in increments of 1 mm) FB: Top/Bottom/Left/Right: 0 to 15 mm  (A: Image area, B: Filled area, A+B: Output area)	Top/Bottom/ Left/Right: 0mm	Yes	No
Dropout color	Drop out a preselected color for the scanned image (binary black & white/grayscale mode only). Can also be specified from the scanner driver's setting dialog box. Note the setting with the scanner driver is given a priority.	Red/Green/Blue/White	Green	Yes	No

[Device Setting 2] (Cont'd)

Item	Explanation	Selectable Parameters	Default	Connector 1	Connector 2
				Connection via SCSI/USB connector	
Pre-pick	To give a higher priority to processing speed, select [Yes], if not, select [No]. Can also be specified from the scanner driver's setting dialog box. Note the setting with the scanner driver is given a priority.	Yes/No	Yes	Yes	No
Document check area specification for Multifeed Detection	Selected range: Check this item when limiting the range of detecting multifeeds. You can determine if multifeed detection is enabled or disabled for the specified area.	Check or do not check "Selected range"	Do not check	Yes	Yes
		Enable/Disable (when "Selected range" is checked)	Disable		
	Start: Specify the start point of the check area in length (mm) from the top edge of the document.	0 to 510 mm (in increments of 2 mm)	0mm		
	End: Specify the end point of the check area in length (mm) from the top edge of the document.	0 to 510 mm (in increments of 2 mm)	0mm		
Intelligent Multifeed Function	Bypass multifeed detection by remembering the pattern (size and location) of glued paper on the document. Note that you need to select "Check Overlapping" beforehand.	Manual Mode/Auto Mode 1/Auto Mode 2	Manual mode	Yes	Yes
Cleaning Cycle	Displays the time to clean the consumables. When the number of sheets scanned exceeds the value of this counter, the background color of the counter turns yellow and a cleaning instruction is prompted from the scanner driver. The cleaning instruction is not displayed when CGA (Kofax VRS) is used.	1,000 to 255,000 sheets (in increments of 1,000) Show cleaning instructions: Check/Do not check	10,000 sheets Do not check	Yes	Yes
Useful life counter	When the value of the page counter (consumables counter) exceeds a value specified here, the background color of the counter turns yellow, and a replacing instruction is displayed from the scanner driver.	10,000 to 2,550,000 sheets (in increments of 10,000) for each consumable	200,000 枚	Yes	Yes
SCSI Bus WIdth	Specify the data transfer width when the connection is via SCSI Connector 2 on the CGA board.	16 bit (Wide)/8 bit	16bit (wide)	No	Yes
AutoCrop Boundary	Select whether to round up or down the fractional part of scanned image data.	Round Up/Round Down	Round Down	Yes	No

[Device Setting 2] (Cont'd)

Item	Explanation	Selectable Parameters	Default	Connector 1	Connector 2
Manual-feed timeout	Specify the waiting time to disable manual feeding.	Disable/Enable Waiting time setting when this option is enabled: For connection via SCSI/USB Connector 1: 5, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, 180, 240, 300, 360, 420, 480, 540, 600, 900, 1200, 1500, 1800, 1999 (in seconds) For connection via SCSI/USB Connector 2: 5, 10, 20, 30 (in seconds)	Disable	Yes	Yes
Power SW Control	Specify whether or not to enable power switch by using the [Power] button on the Operator Panel.	Enable power switch/ Disable power switch	Enable power switch	Yes	Yes
Scan Setting for Document with Tab	For a document that includes index sheets or a document with index stickers (or tabs) attached at its bottom edge, you can specify whether or not to include the index portion (or tab) images during scanning with Auto Paper Size Detection setting. When "Document with tab" is selected, the tab (index) image is included in the document page image. Scanning speed with this setting, however, slows down to a certain degree. Once this setting is enabled, the [Scan Setting for Document in Dark Background Color] option will automatically be disabled.	For connection via SCSI/USB Connector 1: Document with tab/Document without tab/Non-rectangular document For connection via SCSI/USB Connector 2: Document with tab/Document without tab	Document without tab	Yes	Yes
Scan Setting for Document in Dark Background Color	Specify whether or not to detect the edge of document in a dark background color during scanning. You can specify a density of background color so the edge will be detected correctly. Once this option is enabled, the settings for scanning documents with tabs will automatically be disabled.	Disable/Enable Density of background color: 1 to 5 Levels	Disable	No	Yes
Overcrop/ Undercrop	Adjust the output image scanned by enabling the Automatic Page Size Detection option.	Overcrop: 0 mm to 3 mm (in increments of 1 mm) Undercrop: -3 mm to 0 mm (in increments of 1 mm)	0mm	No	Yes
Pick Pressure	Specify the pick pressure for feeding documents.	Low/Mid/High	Mid	Yes	Yes

7.2 Cleaning

⚠ CAUTION

- When operating the scanner, the glass inside the ADF becomes very hot.
- Before you clean the inside of the scanner, turn off its power and unplug the AC adapter from the DC outlet. Wait for at least 15 minutes for the ADF glasses to cool down.
- Before you clean the Feed Rollers and Eject Rollers, turn off the scanner and unplug the AC adapter from the DC outlet. Wait for at least 15 minutes, then turn on the power again.
- Do not use any aerosol sprays or alcohol based sprays to clean the scanner. Dust blown up by strong air from the spray may enter the inside of the scanner. This may cause the scanner to fail or malfunction.
  Sparks caused by static electricity, generated when blowing off dust and dirt from the outside of the scanner, may cause a fire.

Note:

- The actual cleaning cycle depends on the conditions of the documents scanned. You must clean the scanner more frequently when the following documents are scanned:
  - Smooth-faced documents such as coated paper
  - Documents with printed text or graphics almost covering the entire surface
  - Chemically treated documents such as carbonless paper
  - Documents containing a large amount of calcium carbonate
  - A large volume of documents written with pencil
  - Documents on which the toner is not fused sufficiently

7.2.1 Cleaning the ADF

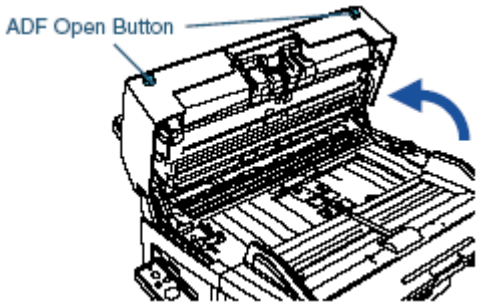
As a guideline, clean the ADF every 10,000 scanned sheets.
Note that this guideline varies according to the type of documents you scan. For example, it may be necessary to clean the ADF more frequently if documents are scanned when the toner is not fused to the paper properly.

(1) Turn off the scanner, and wait for at least 15 minutes.

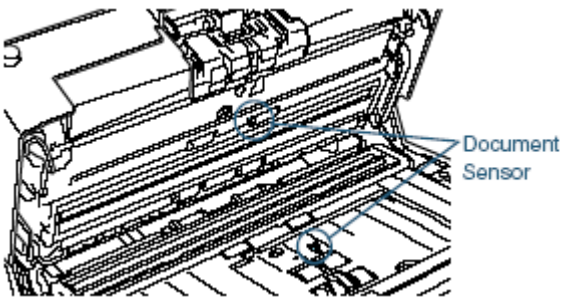
(2) Pushing the ADF Open Buttons, lift open the ADF.

NOTICE

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

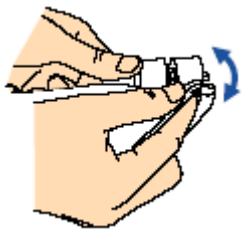


(3) Clean the following locations using a cloth moistened with isopropyl alcohol.
Note: To avoid damaging the document sensors, take care that cloth does not hook them during wiping.



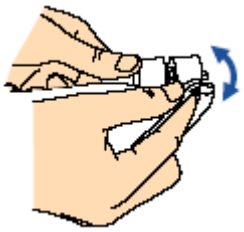
Brake Roller

Lightly clean the Brake Roller along the grooves on the rollers, taking care not to scratch its surface.
When cleaning the Brake Roller, remove them from the scanner.

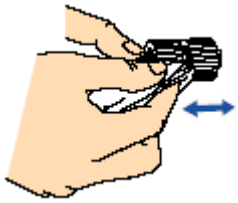


Pick Rollers

Lightly clean the Pick Rollers along the grooves on the rollers, taking care not to scratch their surface. Take particular care when cleaning these rollers as black debris on them adversely affects the paper pick performance.



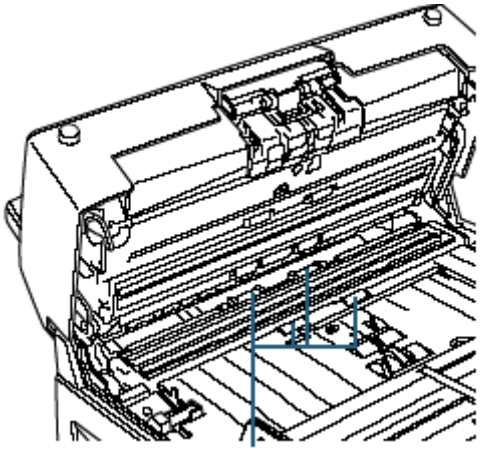
Roller with groove



Roller without groove

Plastic Rollers

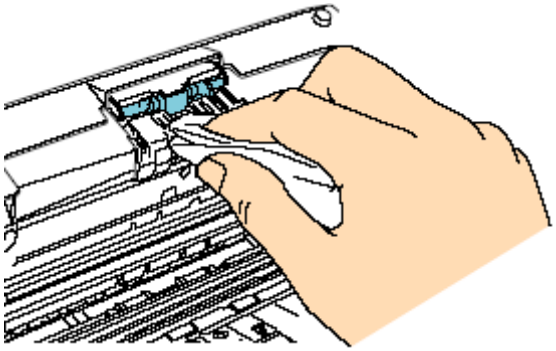
Lightly clean the Plastic Rollers, taking care not to damage their surface. Take particular care when cleaning these rollers as black debris on them adversely affects the pickup performance. Be careful not to damage the sponge HK Rings attached on each side of the rollers.



Plastic Roller (x4)

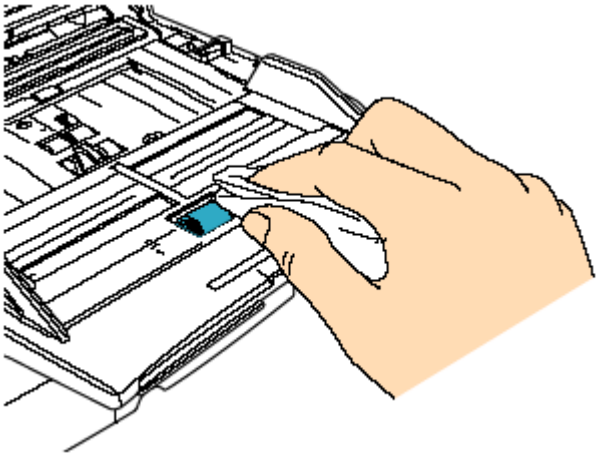
Pick Arm

Lightly wipe off the roller at the tip of the Pick Arm.



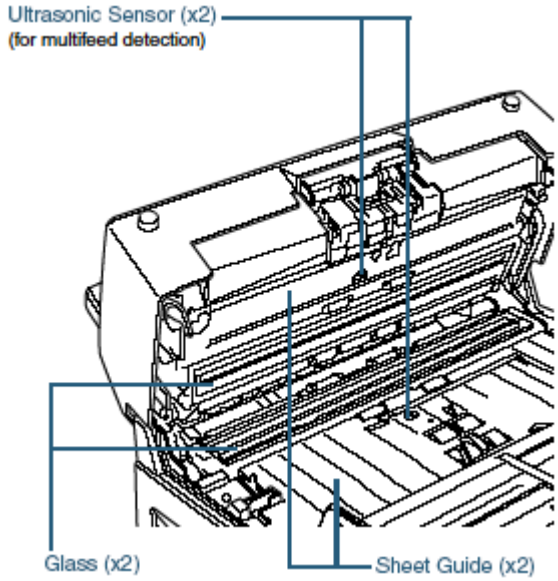
Chute Roller

Lightly wipe off the Chute Roller with its hood open.



Glass/Sheet Guides/Ultrasonic Sensors

Lightly wipe off the glass, Sheet Guides, and Ultrasonic Sensors.



NOTICE

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

(4) Turn on the scanner. Then clean the Feed Rollers.

Feed Rollers

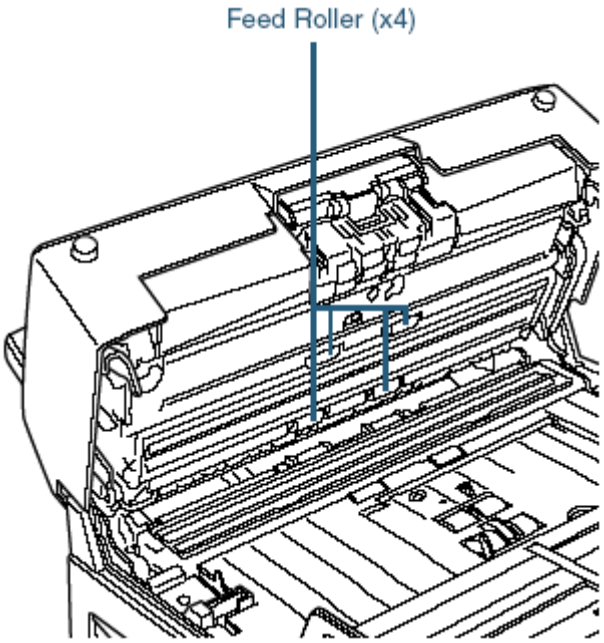
1 With the power on, open the ADF when the Operator Panel indicates error code other than “P” and number “0.”
Note that the Feed Rollers will not rotate if you open the ADF and do the following action while “P” and “0” are indicated.

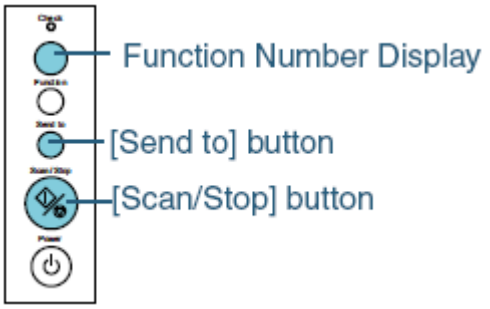
2 Hold down the [Send to] and [Scan/Stop] buttons simultaneously on the Operator Panel. The Feed Rollers and Eject Rollers start to rotate.

NOTICE

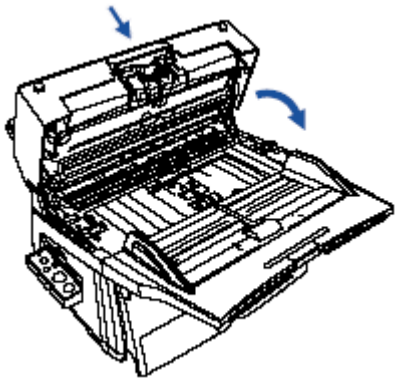
Both the Feed Rollers and Eject Rollers turn at the same time.

3 Hold a soft cloth moistened with cleaning fluid against the surface of the rotating Feed Rollers and Eject Rollers so that the cloth wipes off the surface of the rollers lightly. Take particular care in cleaning these rollers as black debris on them adversely affects the feeding performance.
As a guideline, pressing of the [Send to] and [Scan/Stop] buttons together seven times turn the Feed Rollers and Eject Rollers one full turn.





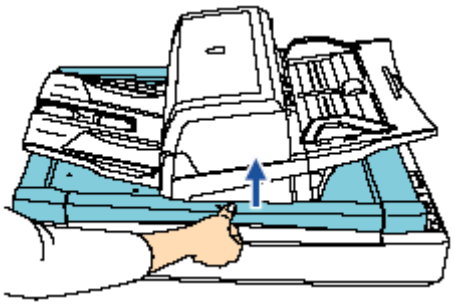
(5) Close the ADF.
Press down on the center of the ADF to return it to its original position until the ADF Open Buttons are locked.



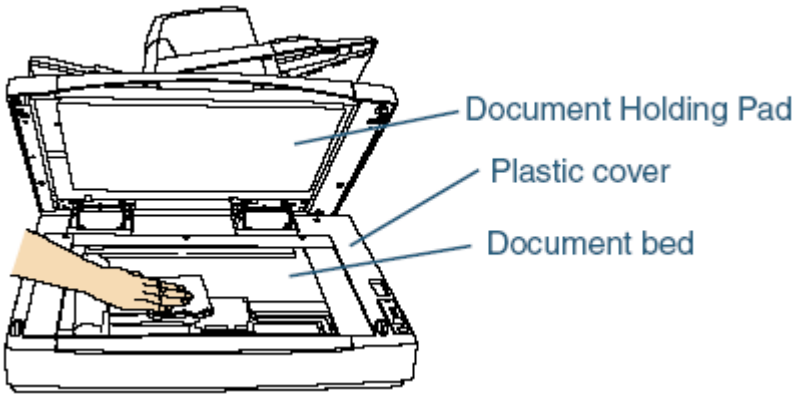
Note: Make sure the ADF is completely and properly closed. Feeding errors may occur if the ADF is not closed properly.

7.2.2 Cleaning the Flatbed

(1) Holding the handle, lift up the Document Cover.



(2) Lightly wipe off the following locations using a cloth moistened with isopropyl alcohol.



NOTICE

Do not allow moisture to flow into the gap between the Document bed and the Plastic Cover.

(3) Wait for the cleaned parts to dry.

(4) Gently close the Document Cover.

7.3 Consumables and Replacement

- When operating the scanner, the glasses inside the ADF become very hot.
- Before you replace the consumables, turn the scanner off and unplug the power cable. Wait for at least 15 minutes for the ADF glasses to cool down.

7.3.1 Consumables

The scanner has the following consumables which endusers need to replace at the following intervals. To check the number of scanned documents, go to Maintenance mode (see Section 6.1.6) or the Software Operation Panel of the scanner (Section 7.1.3).

No.	Part name	Specifications	Standard replacement cycle *1	How to check the number of scanned documents	How to replace
1	Brake roller	PA03576-K010	250,000 sheets or one year	See Section 7.3.2.	See Section 7.3.3.
2	Pick roller	PA03338-K011	250,000 sheets or one year		See Section 7.3.4.

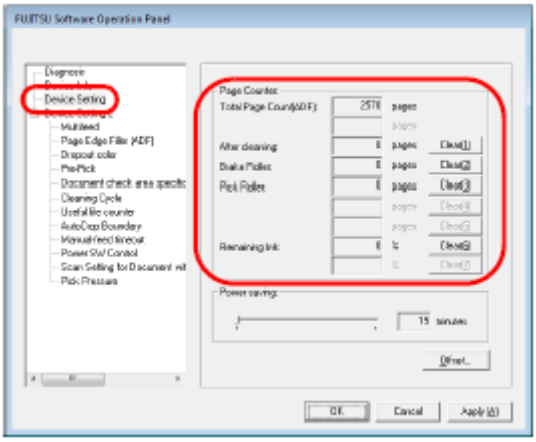
* The replacement cycles above are rough guidelines for the case of using A4/Letter-sized woodfree or wood containing paper of 64 g/m^2 (17 lb) in weight. This cycle varies according to the type of the paper used and how frequently the scanner is used and cleaned.

Note: Use only the specified consumables to avoid document feeding trouble.

7.3.2 Checking and Resetting the Consumables Counters

(1) Start up the Software Operation Panel.
Select [start] menu -> [All Programs] -> [Scanner Utility for Microsoft Windows] -> [Software Operation Panel].

(2) From the tree listing on the left, select [Device Setting].



In the dialog box, you can confirm the following items:

Item	Description
Total Page Count (ADF)	Total scanned sheets using the ADF
Total Page Count (FB)	Total scanned sheets using the Flatbed
After cleaning	Total sheets scanned after last cleaning
Brake Roller	Number of sheets scanned since last replacement of Brake Roller
Pick Roller	Number of sheets scanned since last replacement of Pick Rollers

(3) Click the [Clear] button beside the replaced consumables.

(4) Click the [OK] button on the cleaning instruction displayed.

➔ The counter is reset to 0.

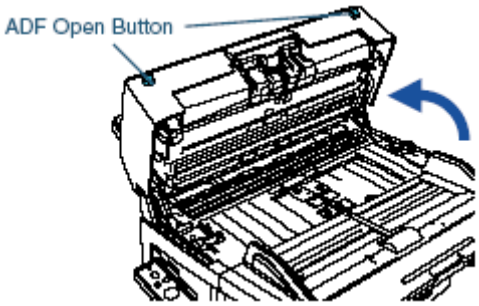
7.3.3 Replacing the Brake Roller (images-TBD)

(1) Remove all the documents (if any) from the ADF Paper Chute.

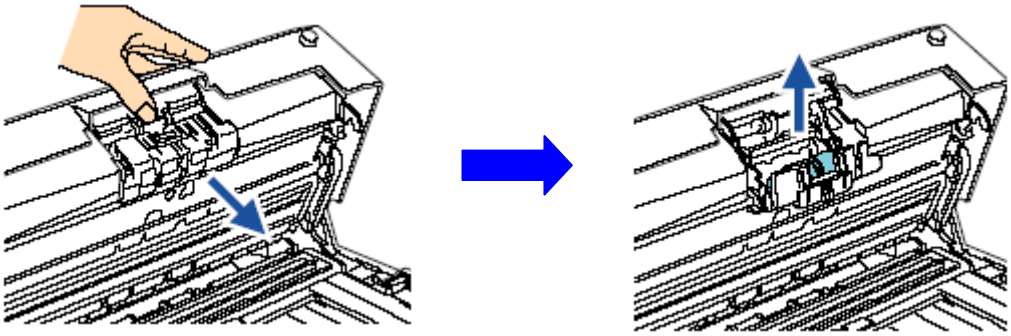
(2) Pushing the ADF Open Buttons, lift open the ADF.

NOTICE

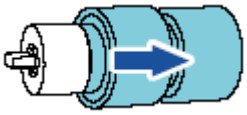
Be careful, the ADF may close and pinch your fingers.



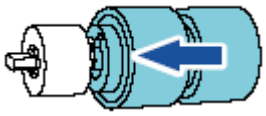
(3) Holding the Brake Roller Holder, open the cover of the Brake Roller in the arrow-indicated direction, and then remove the Brake Roller from the scanner.



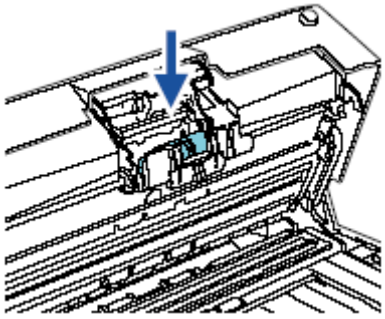
(4) Remove the Brake Roller from its shaft.



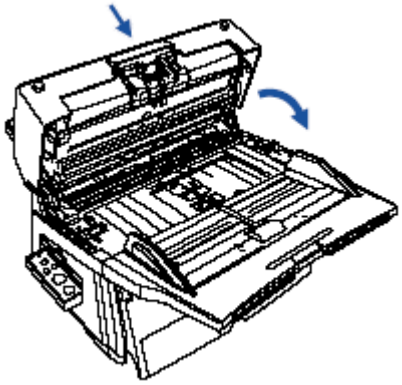
(5) Attach a new Brake Roller by joining the groove of the shaft with the protruding section of the rotating shaft.



(6) Place the Brake Roller in the holder by aligning the flat section of the rotating shaft to the guide slot of the Brake Holder on the scanner, and then close the Brake Roller Holder.



(7) Close the ADF by pressing down the center of the ADF to return to its original position until the ADF clicks into place.



NOTICE

- Be careful, the ADF may close and pinch your fingers.
- Do not close the ADF while the Brake Roller Cover is open.
- Confirm that the Brake Roller is attached firmly. If not, paper feed errors such as multfeeds will occur.

(8) Reset the brake roller counter by referring to Section 7.3.2.

7.3.4 Replacing the Pick Rollers (images-TBD)

NOTICE

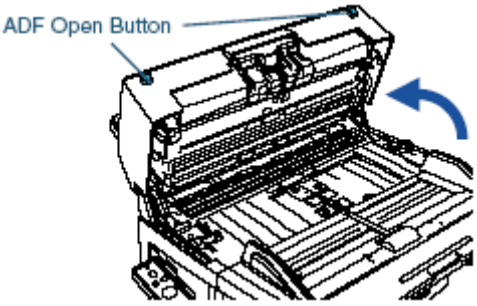
The scanner has two Pick Rollers. Be sure to replace both of them at the same time.

(1) Remove documents (if any) from the ADF Paper Chute.

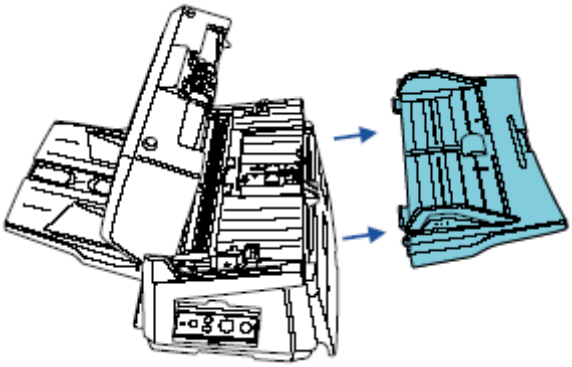
(2) Pushing the ADF Open Buttons, lift open the ADF.

NOTICE

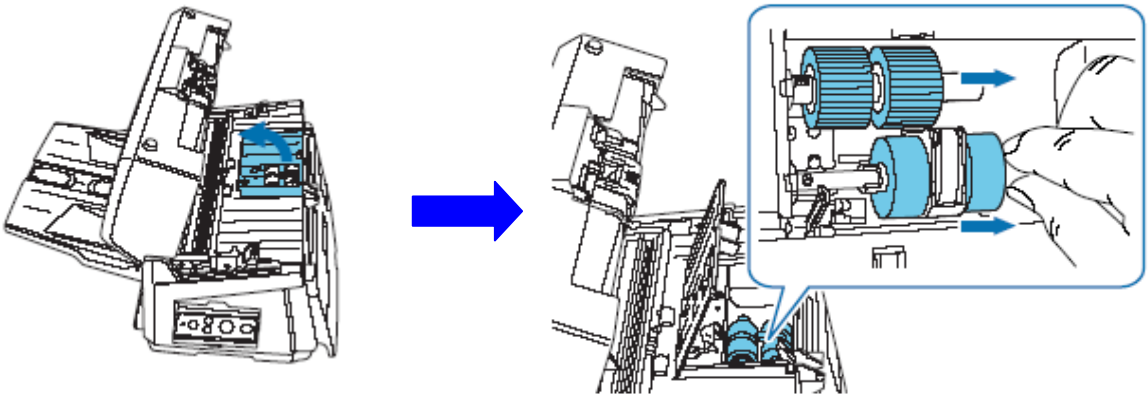
Be careful, the ADF may close and pinch your fingers.



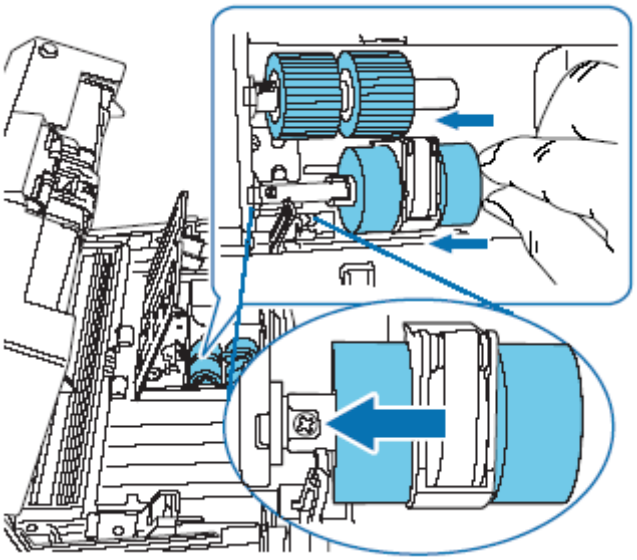
(3) Remove the ADF Paper Chute.



(4) Open the Pick Roller Cover and pull out the Pick Rollers (x2) from the rotating shaft on the scanner.



(5) Insert each new Pick Roller so its socket will fit to the rotating shaft screws on the scanner, and close the Pick Roller Cover. Confirm that both sides of the cover are locked firmly.

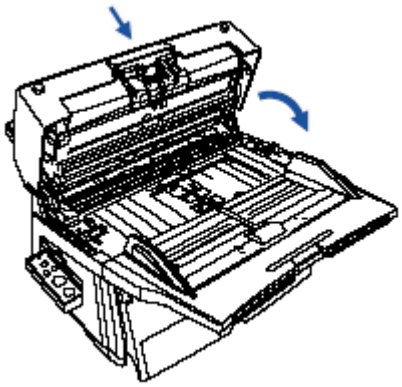


(6) Attach the ADF Paper Chute.

(7) Close the ADF by pressing down the center of the ADF to return to its original position until the ADF clicks into place.

NOTICE

- Be careful, the ADF may close and pinch your fingers.
- Do not close the ADF while the Pick Roller Cover is open.
- Confirm that the Pick Rollers are attached firmly. If not, paper feed errors such as paper jams will occur.



(8) Reset the pick roller counter by referring to Section 7.3.2.

Appendix 1 Screws

The screws that are used in this device (scanner and imprinter) are as follows.

Name on this manual	Description	Part number	Remarks
Screw A	SCREW	RU6SW2N3-08121	fi-6670/fi-6670A fi-6770/fi-6770A/fi-6750S

Name on this manual	Description	Part number	Remarks
Screw B	SCREW	U30L-0010-0030#M3x8	fi-6670/fi-6670A fi-6770/fi-6770A/fi-6750S

Name on this manual	Description	Part number	Remarks
Screw C	SCREW	RU6SW2N3-06121	fi-6670/fi-6670A fi-6770/fi-6770A/fi-6750S

Name on this manual	Description	Part number	Remarks
Screw D	SCREW	RU6SW2N3-05121	fi-6670/fi-6670A fi-6770/fi-6770A/fi-6750S

Name on this manual	Description	Part number	Remarks
Screw E	PT SCREW	PA83952-5038	fi-6670/fi-6670A fi-6770/fi-6770A/fi-6750S

Name on this manual	Description	Part number	Remarks
Screw F	PT SCREW	PA83952-2636	fi-6670/fi-6670A fi-6770/fi-6770A/fi-6750S

Name on this manual	Description	Part number	Remarks
Screw G	SCREW	RU6SW2N4-10121	fi-6670/fi-6670A fi-6770/fi-6770A/fi-6750S

Name on this manual	Description	Part number	Remarks
Screw H	SCREW	RU6SW2N3-14121	fi-6670/fi-6670A fi-6770/fi-6770A/fi-6750S

Name on this manual	Description	Part number	Remarks
Screw I	SCREW	U120-4300-Z624	fi-6670/fi-6670A fi-6770/fi-6770A/fi-6750S

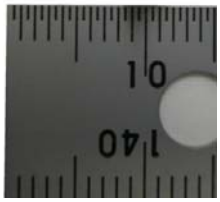
Name on this manual	Description	Part number	Remarks
Screw J	SCREW	RU6SNA2R5-05121	fi-6670/fi-6670A fi-6770/fi-6770A/fi-6750S

Name on this manual	Description	Part number	Remarks
Screw K	SCREW	CA98001-8785	fi-6670/fi-6670A fi-6770/fi-6770A/fi-6750S

Name on this manual	Description	Part number	Remarks
Screw L	SCREW	RU6SNA3-06121	fi-6670/fi-6670A

Name on this manual	Description	Part number	Remarks
Screw M	C SCREW	PA03951-0610	fi-6770/fi-6770A/fi-6750S

Name on this manual	Description	Part number	Remarks
Screw N	PT SCREW	PA83952-5040	fi-6770/fi-6770A/fi-6750S



Name on this manual	Description	Part number	Remarks
Thumb screw	THUMB SCREW	PA83951-1510	fi-6670/fi-6670A fi-6770/fi-6770A/fi-6750S

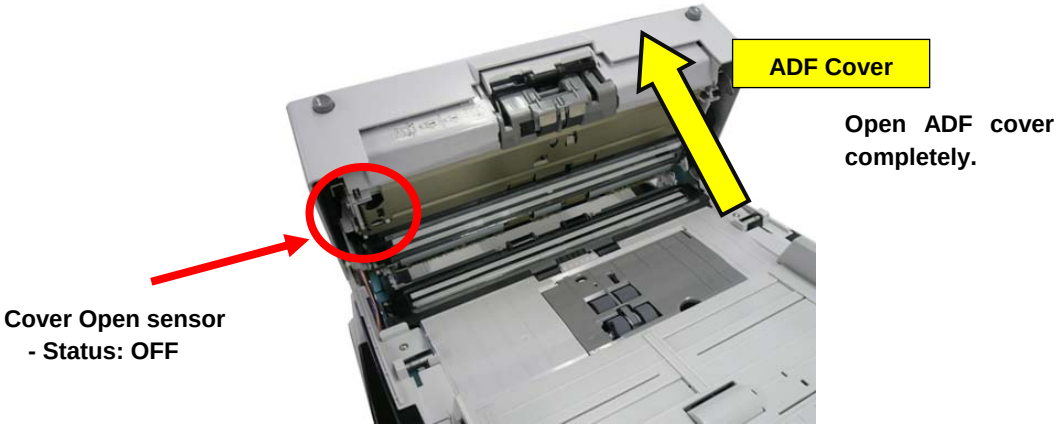
Appendix 2 Emulation Mode

Emulation of the following scanners can be specified on this scanner.

Model name	Scanner that can be emulated
fi-6770	fi-5750C、fi-4750C、fi-4640S
fi-6770A	
fi-6750S	No scanner available

To activate the Emulation function, scanner setting needs to be changed.
For the configuration method, see below.

1. With the ADF cover open and the Cover Open sensor status OFF (by opening the cover all the way), press the Power button while pressing the Function button. (In this mode, the scanner interface with the host becomes off-line.)



The following is the Function Number Display and the scanner status transition during scanner initialization after the power is turned ON in the procedure above.

Function No. Display	Scanner status
0	Initializing

⇩

Function No. Display	Scanner status
-	In Maintenance Mode

- When the scanner goes into the Maintenance Mode, let go of the Function button.

⇩

Function No. Display	Scanner status
8	In Emulation switch mode

- When the scanner goes into the Emulation switch mode, close the ADF cover.

2. During the Emulation switch mode, press the Scan/Stop button to display the current scanner setting.
   - If the Emulation mode is activated for the first time, the initial value (standard) "0" appears on the Function Number Display.
   - When fi-5750C is selected, "1" appears on the Function Number Display.

3. Pressing the Function button changes the displayed number. Press it several times until the number for the model you want your scanner to emulate appears.
   - If your scanner is fi-6770, to emulate fi-5750C, press the Function button several times until "1" is displayed on the Function Number Display.

Function No. Display	Emulated model	Your scanner		Remarks
		fi-6770/fi-6770A *1	fi-6750S *2	
0	fi-6770	✓		Initial value (standard) Emulation mode invalid
	fi-6750S		✓	
1	fi-5750C	✓	--- *2	
2	fi-4750C *3	✓	--- *2	
3	fi-4640S *3	✓	--- *2	

*1: Emulation on fi-6770A through CGA board (SCSI/USB) is not available.
With a standard interface, use the Emulation function as fi-6770.

*2: The initial value can be checked on fi-6750S in the Emulation mode. But emulation to the other scanner is not available.
(Mode selection is not possible on the Function Number Display.)

*3: Only SCSI interface is supported on fi-4750C and fi-4640S.
(The scanner emulated to fi-4750C/fi-4640S and connected to USB is recognized as fi-6770.)

4. Press the Scan/Stop button to display the selected scanner name (numbers) by turns.
   - The first "-" is a start mark. "SP" signifies "OFF: No display". Switching interval is 0.5 second.

Emulation mode	How to display
fi-6770	"6770" is displayed as below repeatedly. "-" ➔ "6" ➔ "SP" ➔"7" ➔ "SP" ➔ "7" ➔"SP" ➔ "0" ➔ "SP"
fi-6750S	"6750"is displayed as below repeatedly. "-" ➔"6" ➔"SP" ➔ "7" ➔"SP" ➔"5" ➔"SP" ➔ "0" ➔"SP"
fi-5750C	"5750" is displayed as below repeatedly. "-" ➔ "5" ➔ "SP" ➔"7" ➔ "SP" ➔ "5" ➔"SP" ➔ "0" ➔ "SP"
fi-4750C	"4750"is displayed as below repeatedly. "-" ➔"4" ➔"SP" ➔ "7" ➔"SP" ➔"5" ➔"SP" ➔ "0" ➔"SP"
fi-4640S	"4640" is displayed as below repeatedly. "-" ➔ "4" ➔ "SP" ➔"6" ➔ "SP" ➔ "4" ➔"SP" ➔ "0" ➔ "SP"

5. If the scanner name (numbers) displayed on the Function Number Display is correct, press the Function button.
   Pressing the Function button displays Screen E1 to ask whether to write thee selected mode into EEPROM.

   - To cancel the process, press the Send to button and return to the initial display of the Emulation mode.

[Screen E1]

Function No. Display	Power LED	Scanner status
	ON	Blinks "o" (lower). Interval of blinking: 1.0 second (Switching interval of light ON and OFF is 0.5 second)

6. Writing to EEPROM.

Pressing the Scan/Stop + Function buttons writes the information of the scanner of which setting has been changed into EEPROM.

While the data is being written into EEPROM, Screen E2 appears.

When writing process is complete successfully, Screen E3 appears.

- To cancel the process, press the Send to button and return to the initial display of the Emulation mode.

[Screen E2]

Function No. Display	Scanner status
	Displays “L” without blinking.

Data is being written into EEPROM.
No button is available.

(1) When the process is terminated successfully:

[Screen E3]

Function No. Display	Scanner status
	Displays “o” (upper) without blinking.

When data writing into EEPROM is complete successfully, Screen E3 appears.

(2) When the process is terminated abnormally:

[Screen E4]

Function No. Display	Scanner status
	Displays “ c ” (lower) without blinking.

If writing to EEPROM failed, the Screen E4 appears.

7. Restart the scanner.

If the process is terminated abnormally, turn off the power and back on again to restart the scanner.

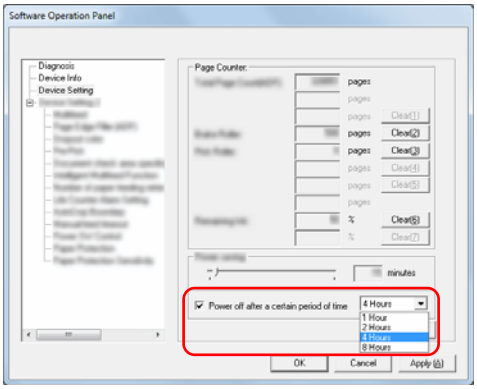
Scanner configuration change for Emulation mode is complete now.

08

Appendix 3 Auto Power OFF Function

Auto Power Off Function

The “auto power OFF function” is a function in which after scanning is complete, if the scanner stays in that state (standby) for longer than the specified time, the scanner automatically enters into OFF mode (power OFF).
For scanners that have the “auto power OFF function”, a setting is added in the Software Operation Panel. (See the figure to the right)
To return the scanner from OFF mode (power OFF), press the power button on the operator panel. (Same as for power ON)



“Auto Power OFF Function” Applicable Scanners/Default Settings

This function is installed on all scanners shipped starting in autumn of 2012.
The serial numbers of models have also been raised.
At shipping time, this function is enabled or disabled according to the destination. Refer to the following table.

Destination	Device Name	Device Number	Serial Number	Default Settings	Remarks
Europe	FI-6770	PA03576-B101	＃500001 -	Enabled Setting parameter： 1/2/4/8 hours * Default factory setting is 4 hours.	
	FI-6750S	PA03576-B401			
North America	FI-6770	PA03576-B102	＃500001 -	Disabled	
	FI-6750S	PA03576-B402			
Japan	FI-6770	PA03576-B103	＃500001 -	Disabled	
	FI-6750S	PA03576-B403			
FCPA	FI-6770	PA03576-B105	＃500001 -	Disabled	
	FI-6750S	PA03576-B405			
FHK	FI-6770	PA03576-B107	＃500001 -	Disabled	
	FI-6750S	PA03576-B407			

Notes on maintenance

- The setting for the “auto power OFF function” is saved in the EEPROM. When replacing the panel PCA, back up/restore the EEPROM data, and then inherit the setting for the “auto power off function”.
  If EEPROM data cannot be backed up/restored, then the menu for “auto power OFF function” will not be displayed on the Software Operation Panel. In that case, it is necessary to use the “auto power OFF function setting tool” (*1) to change the setting.

  If the version of the Software Operation Panel is old, the auto power OFF function setting item is not displayed. If the setting for the auto power OFF function is saved as enabled in the scanner, the scanner will enter into power OFF mode when the set time is exceeded, even though the menu is not displayed.
  In that case, reinstall the Software Operation Panel (driver) bundled with the product.

- When using this function in an environment with an old driver, errors may occur.
  In that case, use the “auto power OFF function setting tool” (*1) to change the setting to disabled, or reinstall the driver using the Setup DVD bundled with the product.

  (*1) The “auto power OFF function setting tool” is a tool for configuring detailed settings of the auto power OFF function. Refer to the readme stored in the DVD bundled with the product, and then change the setting of the auto power OFF function.

  Program: [drive name]\Tools\AutoPowerOff\AutoPowerOff_CTL.exe
  Documentation: [drive name]\Tools\AutoPowerOff\Readme

Note

- Even if the setting for “auto power OFF mode” is enabled, the scanner does not automatically enter into power OFF mode during “emulation mode” and “hardware error”.