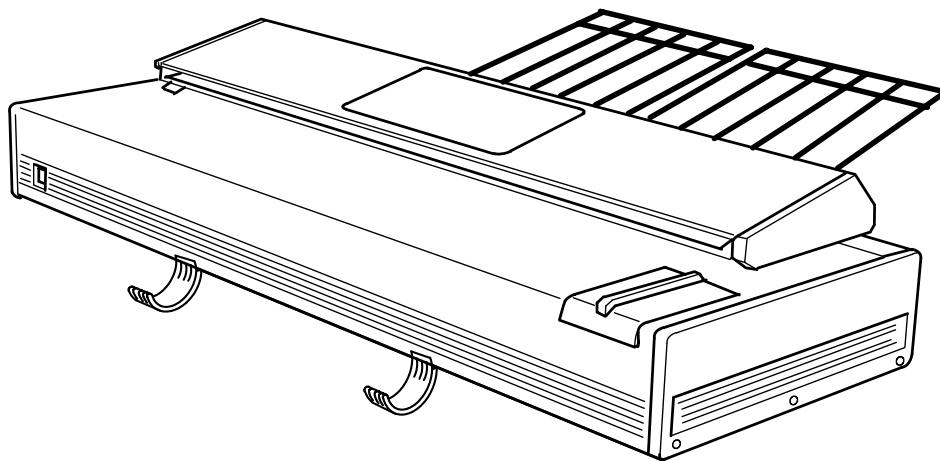


# **KIP2050      KIP2080** **KIP2120      KIP2160**

**(K-75 Series)**

## **SERVICE MANUAL**

**Version F.16**



This service manual contains basic information required for achieve several service to maintain the product quality and functions of the Image Scanner KIP2050, KIP2080, KIP2120, & KIP2160

- Chapter 1 Introduction
- Chapter 2 Installation
- Chapter 3 Electrical System
- Chapter 4 Mechanical System
- Chapter 5 Maintenance and Checking
- Chapter 6 Troubleshooting
- Chapter 7 Service Mode
- Chapter 8 Appendixes

Some of the information contained in this manual may be changed by product upgrades and so on. Such information will be communicated to you as engineering notices on occasion.

Read this service manual and occasionally issued engineering notices carefully.

A deep and correct understanding for this machine is the only way to develop the skills for maintaining the product quality and functions of this product for a long period of time and the applied capacity for finding the causes of breakdowns.

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# Chapter 1

## Introduction

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# 1.1 Features

## **An image scanner for a large original**

KIP2000 Series Scanner is available to scan 36 inches wide original in maximum.

Resolution is 400dpi (KIP2050, KIP2080, KIP2120 & KIP2160)

The following list shows the connectable printers.

Speed	Connectable Printer	Resolution
50.95mm/sec.	KIP2000 Series Printer	400dpi
80mm/sec.	KIP2720E	400dpi
	KIP2720E-2	600dpi
100mm/sec.	KIP6000	400dpi & 600dpi
120mm/sec.	KIP3620E	400dpi
160mm/sec.	KIP9010	400dpi
240mm/sec.	KIP8000	400dpi

## **Fine quality of image scanning**

A high resolution scanner head is used.

Scanned images such as letters and diagrams are copied clearly with fine quality.

## **Easy and friendly operation**

Since the touch panel is used, operation gets easier compared with our former models.

## **Level of reading density (Threshold Level) is adjustable.**

Since KIP2000 Series Scanner has 17 Threshold Levels, it is possible to select the best level for reading original's image.

It is also possible to select the Threshold Level by automatic selection.

## **Scanned image is compensated by the loaded software.**

Halftone images are expressed in the pseudo gray scale by this software.

## **Reduction, enlargement and multiple sheets of copying**

Since the memory is installed, it is possible to adjust the zoom ratio from 25.0% to 400.0% in 0.1% increment.

Also it is possible to do a multiple sheets of copying up to 999 sheets for one original at one time.

## **Abundant interface function**

KIP2000 Series Scanner is equipped with an exclusive Interface for output to printer, and also is equipped with SCSI Interface for output to the computer.

## **Space and energy saving design**

KIP2000 Series Scanner is formed as a compact desktop type with a rationalized design.

Therefore, it is possible to install it in a small space in the office.

Scanner has Power Save Modes not to consume so much power when no operation is done.

## **Storing multiple Copy Jobs to the memory (Pre-scan)**

Even if the connected printer is not ready, it is possible to scan originals and store the scanned image data in the memory as Copy Jobs if memory capacity allows.

**Other functions**

- (1) Background Mode (Real Time Threshold)
- (2) Image shift (Horizontal shift : Shift and Centering)  
(Vertical shift : Leading Edge or Trailing Edge)
- (3) Automatic original size detection
- (4) Set Copy Mode (Layout and Sort)
- (5) Date Stamp Mode
- (6) Mirror Image Mode
- (7) Negative Image Mode
- (8) Auto Zoom Mode
- (9) Auto Paper Mode

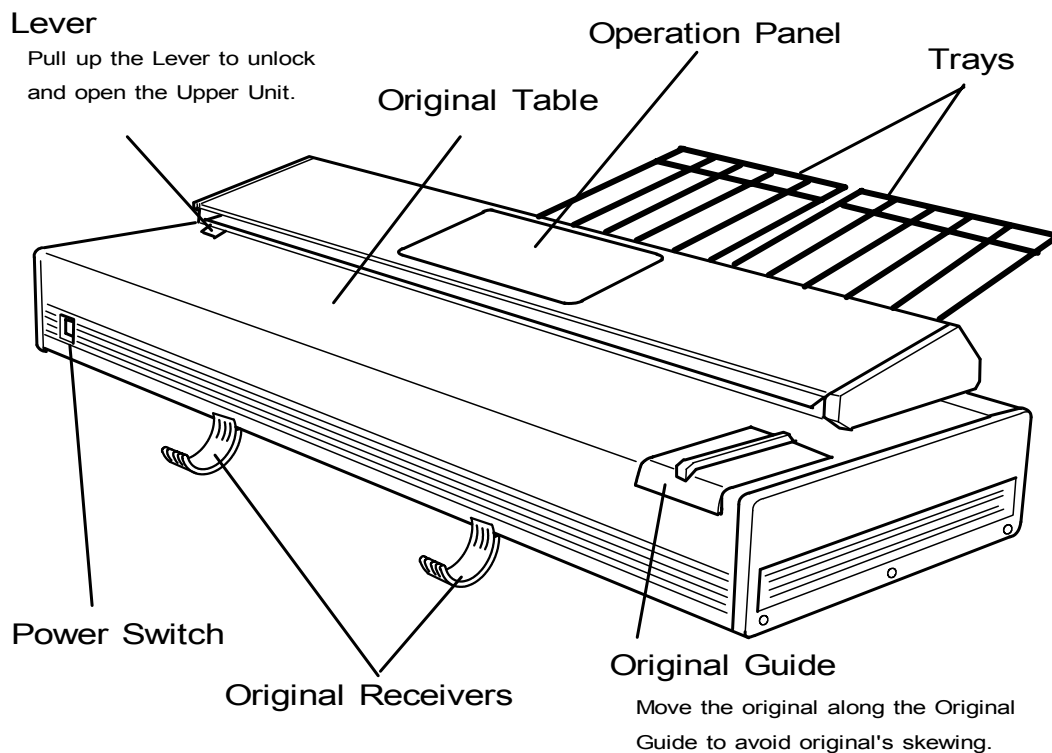
## 1.2 Specifications

Model	KIP2050, KIP2080, KIP2120, KIP2160
Scanning method	Sheet through type
Reading sensor	Silicone-CCD
Light source	Cold Cathode Ray Tube
Maximum reading width	914.4mm
Reading speed	KIP2050 : 50.95mm (per second) KIP2080 : 80mm KIP2120 : 120mm KIP2160 : 160mm
Resolution	In Copy Mode : 400dpi In Scan Mode : 100 to 1200dpi
Tone	Line, Line/Photo and Photo
Interface	KIP IF- 8 (For printer) RS232C SCSI-2 (Option)
Memory capacity	From 64MB (standard) to 320MB (option)
Power consumption	190W
Environmental conditions	<u>Temperature</u> From 10 to 32.5 degrees centigrade <u>Humidity</u> From 20% to 80% (No dew)
Acoustic noise	Less than 60db
Outer dimension	1,368mm (Width) x 489mm (Depth) x 266mm (Height)
Weight	About 76kg
Power source	<u>Voltage</u> From 100 to 240V plus or minus 10%  Note : Scanner's voltage condition is automatically corresponded to the voltage of outlet (from 100V to 240V) if only you connect the power plug.  <u>Frequency</u> 50 or 60Hz
Original thickness	0.05mm to 1.6mm (50g to 120g/centare)  Notes (1) When you scan an original which is thicker than 0.12mm, make sure to select 50% or larger zoom ratio. (2) It is possible for us to guarantee the image quality if original's thickness is from 0.08mm to 0.12mm. If the original is thicker or thinner than this range, however, we will not guarantee the image quality.

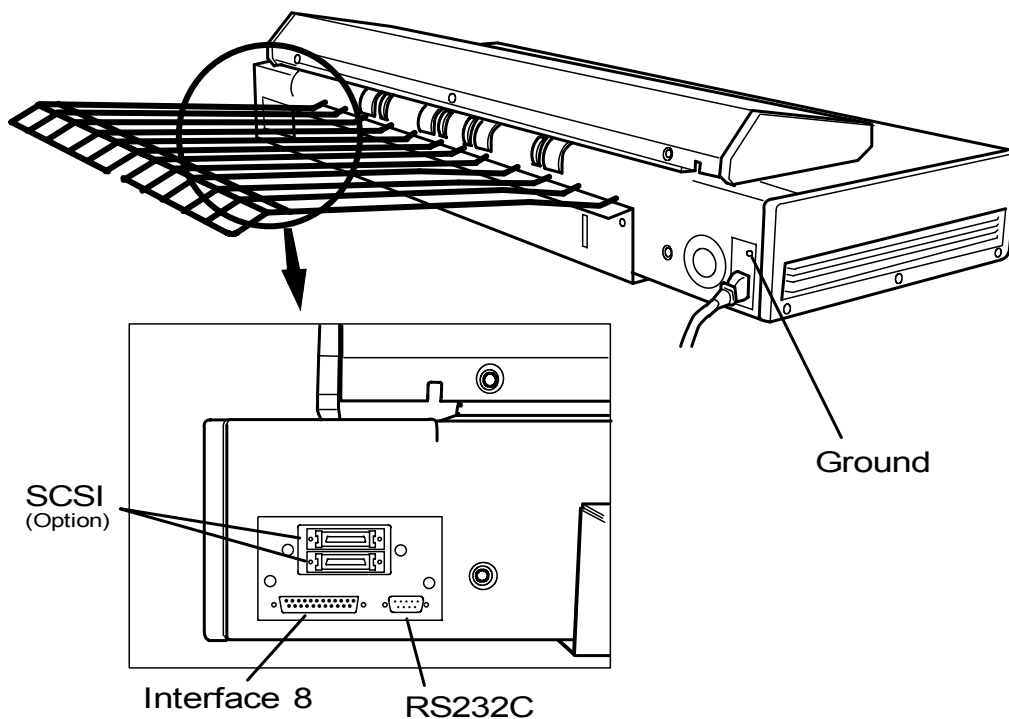
Note : We may change these specifications without noticing to you.

## 1.3 Name of Each Part

### 1.3.1 Front view



### 1.3.2 Rear view





# Chapter 2

## Installation

We have done careful adjustments and strict inspections for the product in our factory before packaging and shipment.  
 The installation is important in order to let the product work properly as same as it has passed our factory inspection.  
 We would ask service engineers to know every function of product, to install it at a proper place in the correct way, and to check it fully after the installation.

### Note

The following installation works are ordered.

Carry out these works orderly from the top to the bottom without skipping or changing the order.

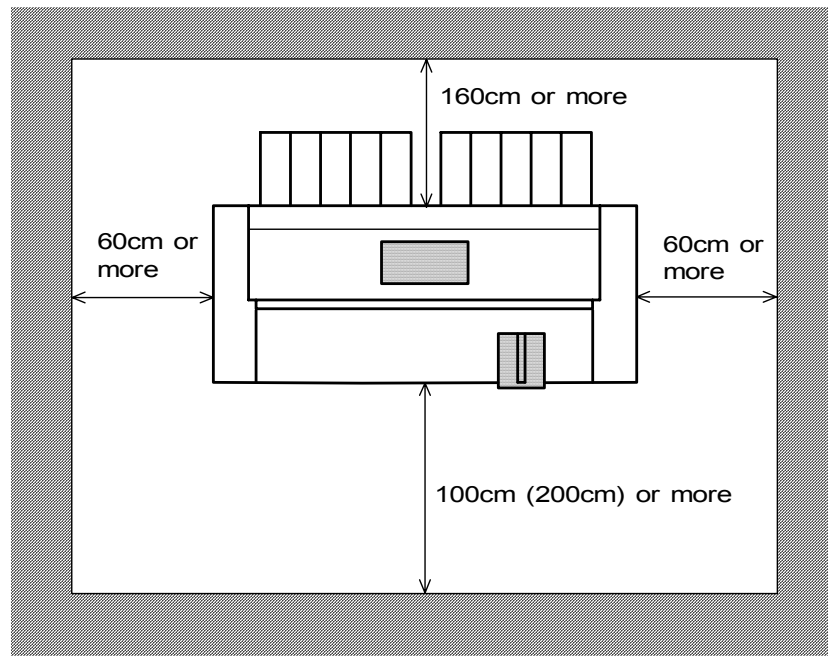
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## 2.1 Necessary Conditions

Following conditions have to be satisfied.

1. The power source should be rated from 100V to 240V plus or minus 10%, more than 6A and 50 or 60Hz.  
Scanner's voltage condition is automatically corresponded to the voltage of outlet (from 100V to 240V) if only you connect the power plug.
2. Make sure to connect the power plug to the outlet that is provided with the Ground Terminal.  
The outlet must be corresponded to 3 pins power plug.
3. To completely disconnect the equipment from the power source, please draw the power plug from the outlet.  
The outlet must be easily accessible near the equipment.
4. The temperature must be within the range from 10 to 32.5 degrees centigrade, and the humidity must be from 20% to 80%.
5. Prevent the equipment from fire, dust and direct sunlight.  
If it is impossible to avoid the direct sunlight, please pull the curtain to intercept the sunlight.
6. Machine Noise Information Ordinance 3. GSGV January 18, 1991 :  
The maximum sound pressure level is equal or less than 70dB (A) according to ISO 7779.
7. The floor must be enough strong to withstand machine's weight (About 76kg).
8. Keep enough space around the machine as follows.

Note : Parenthesized numbers are required space to scan the original of 0.12mm or thicker.



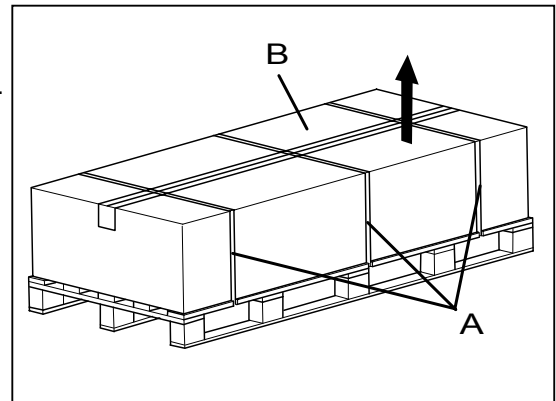
## 2.2 Unpacking

### 2.2.1 Unpacking

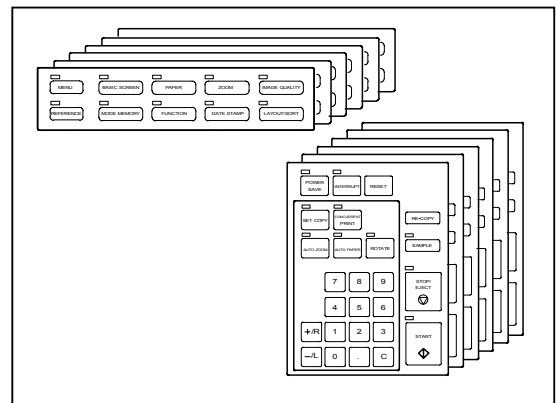
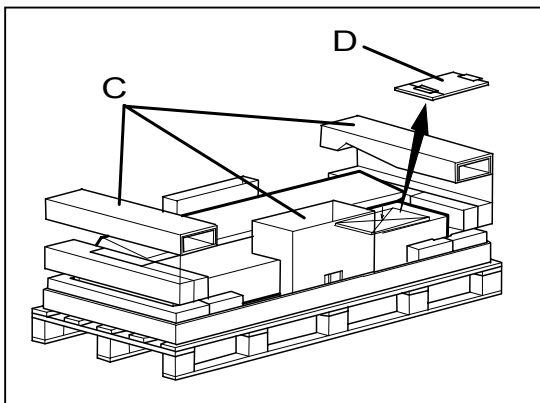
When you will install the scanner that has been kept in the cold warehouse for a long time in winter, carry the packaged scanner to the room you will install, and then wait for more than 6 hours before unpacking in order to accustom the scanner to the temperature of room air enough.

If you unpack the scanner although it has not been accustomed to the room temperature yet but is still cold, the scanner may get dewed and it may result in several troubles.

- 1) Cut 3 pieces of Band (A).
- 2) Bring up and remove the Corrugated Cardboard (B).



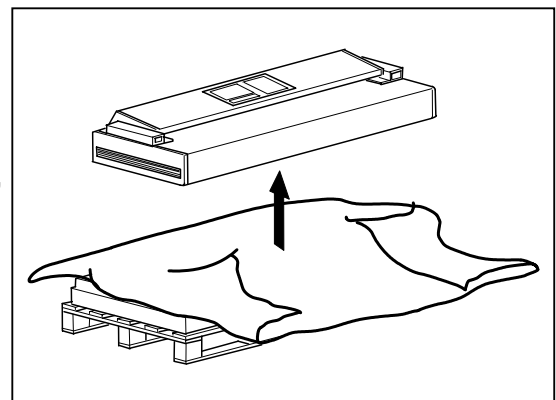
- 3) Remove 3 pieces of Protection Corrugated Cardboard (C).  
Remove Operation Panel Sheets (D) and put them aside.



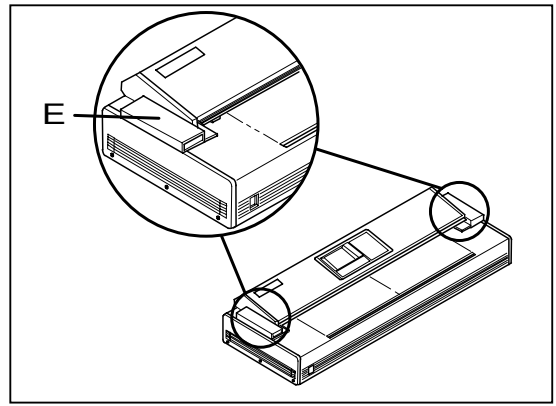
Operation Panel Sheets (D)

- 4) Open the Protection Sheet, and then take out the Scanner Unit.

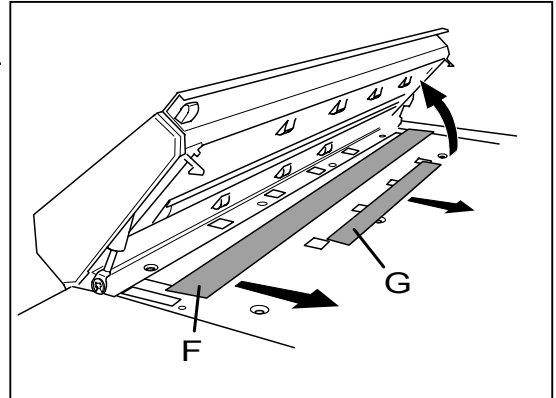
**CAUTION :** Bring the Scanner Unit by 2 or more persons because it is about 76kg. When you bring up the Scanner Unit, be careful not to catch the Protection Sheet between Scanner Unit and your hand because the Protection Sheet is slippery so you may drop off the Scanner Unit.



5) Remove Protection Pads (E) at both sides.



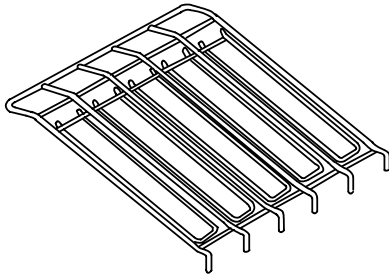
6) Open the Upper Unit, and then remove the Protection Sheet (F) that protects the Original Glass. Remove the Protection Sheet (G) also.



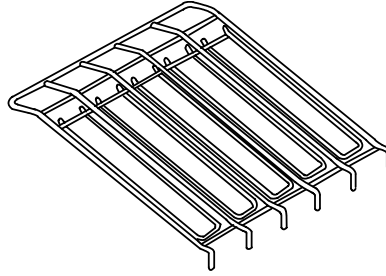
## 2.2.2 Confirmation of accessories

The following parts are attached to the product.  
Confirm that no part is missed out.

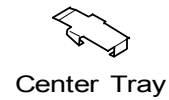
1. Tray Left
2. Tray Right
3. Center Tray
4. Original Receiver Assembly
5. Original Guide Assembly
6. User's Manual (CDROM)
7. Tray Holder
8. Tapping Screws
9. Setup Procedure
10. Printer Cable



Tray Left



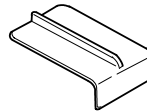
Tray Right



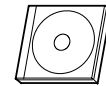
Center Tray



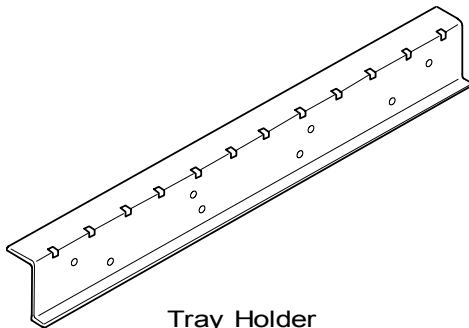
Original Receiver Assembly



Original Guide Assembly



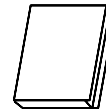
User's Manual (CDROM)



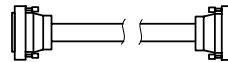
Tray Holder



Tapping Screws



Setup Procedure



Printer Cable

## 2.3 Installation

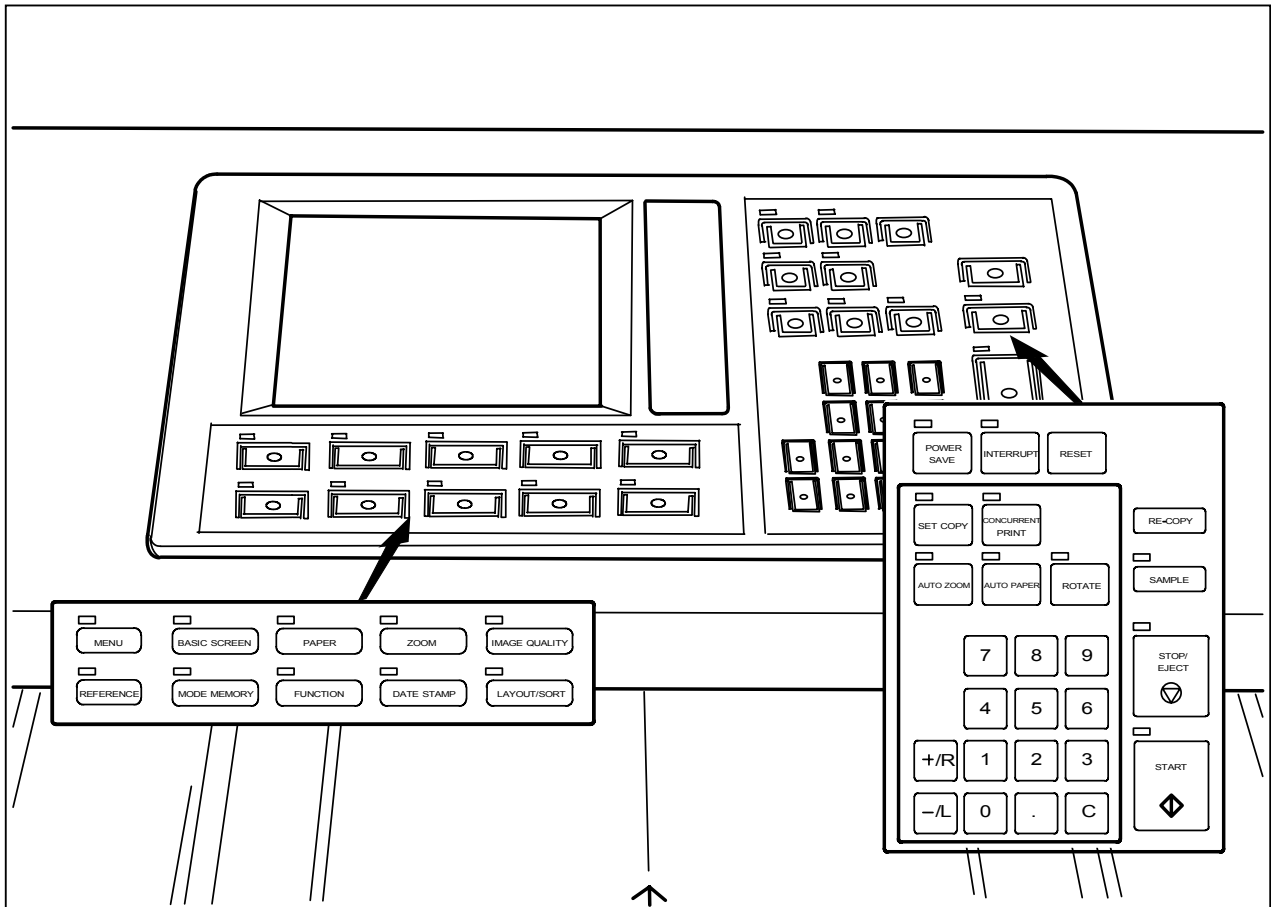
### 2.3.1 Pasting Operation Panel Sheets

The product is attached with 6 kinds of Operation Panel Sheets.

Since the language is different, paste one of them on the Operation Panel according to customer's residence.

Languages are as follows.

- |             |            |
|-------------|------------|
| 1. Japanese | 4. German  |
| 2. English  | 5. Italian |
| 3. French   | 6. Spanish |



(Example : English)

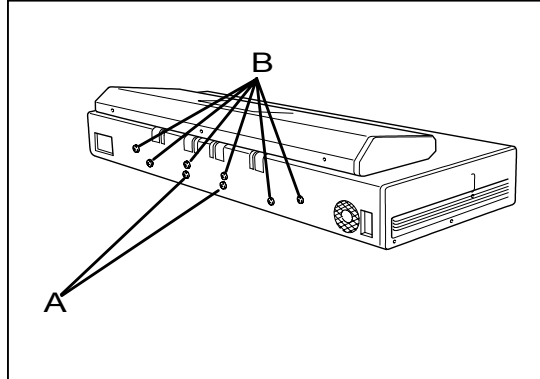
### 2.3.2 Changing location of screws (Installing the Tray)

Scanner has upper screw array and lower one on its rear side.

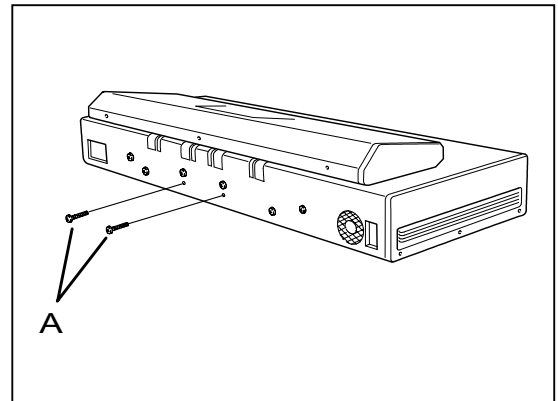
Only the inner 2 pieces of screw of the lower screw array are M4x25 (A), and the rest of 6 pieces are silver M4x16 (B).

2 pieces of black M4x25 screw (A) of the lower screw array has been fixed the Optical Unit during transportation to prevent it from being broken.

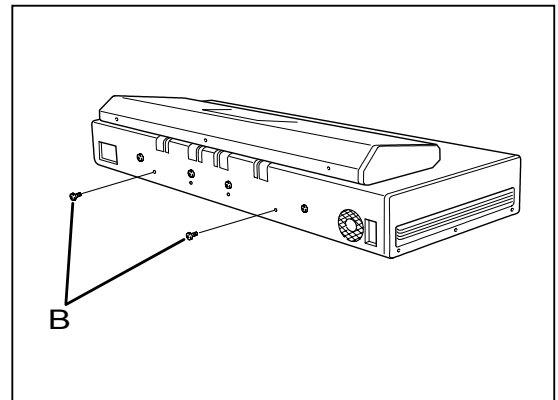
Since the Optical Unit has to be movable when you operate the scanner, make it movable changing the location of screws in the following way.



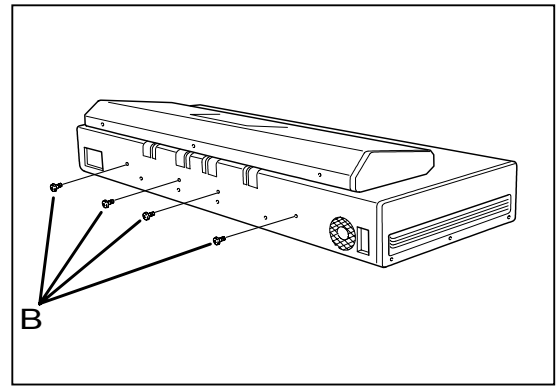
- 1) Remove inner 2 pieces of black M4x25 screw (A) of the lower screw array first.  
By this, the Optical Unit becomes movable.



- 2) Remove outer 2 pieces of silver M4x16 screw (B) of the lower screw array.

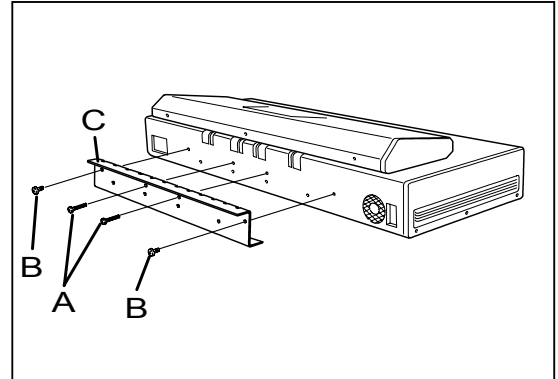


- 3) Remove 4 pieces of silver M4x16 screw (B) of the upper screw array.

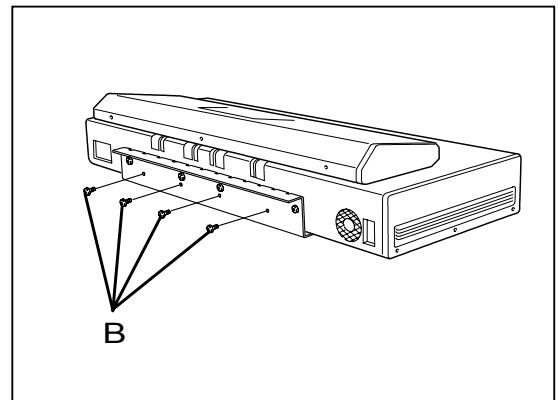


- 4) Install the Tray Holder (C) with 2 pieces of black M4x25 screw (A) and 2 pieces of silver M4x16 screw (B).

**These screws must be put into screw holes of the upper screw array, and black M4x25 screws (A) must be inside of the array.**

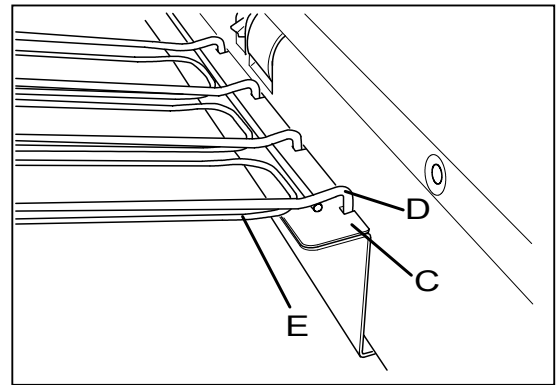


- 5) Put 4 pieces of silver M4x16 screw (B) into screw holes of the lower screw array, and tighten them.



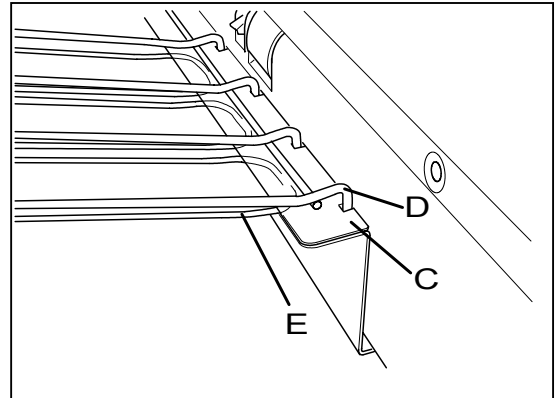


- 6) Install both Tray Right and Tray Left (D) to the Tray Holder (C) putting the bars of each Tray into the holes of the Tray Holder.

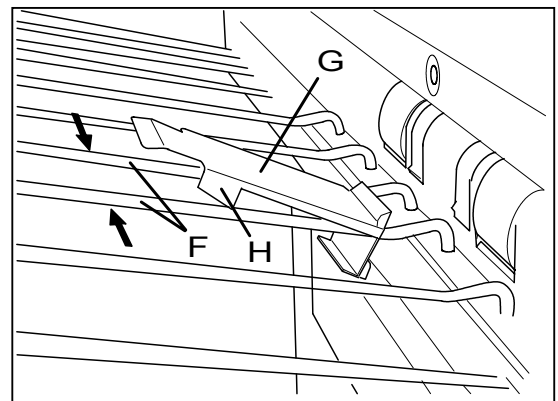
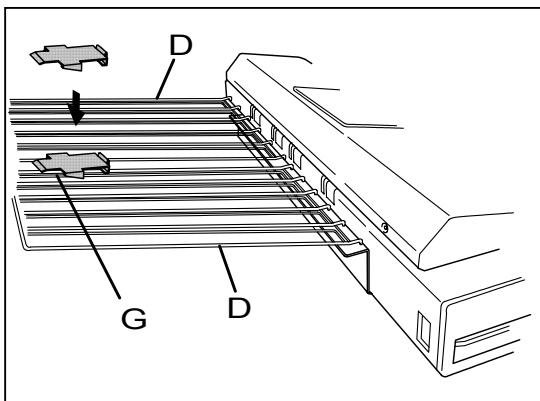


### Note

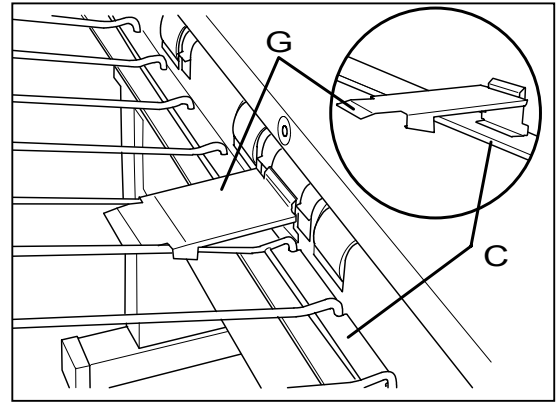
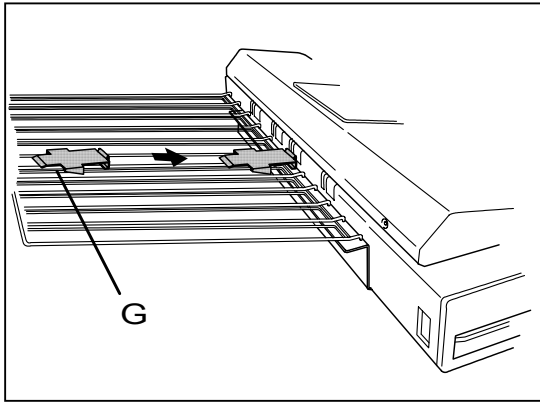
Supplemental Tray (E) should be upside of the Tray Holder (C) after installing Tray Right and Tray Left (D).  
If it is downside as this figure, it is impossible to expand it.



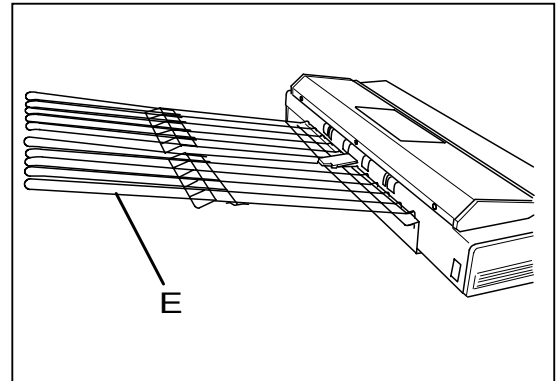
- 7) Bending both Tray Right and Tray Left (D) a little inward, catch the bar (F) of each Tray with the Center Tray (G).  
Both arms (H) of the Center Tray must catch bars (F).



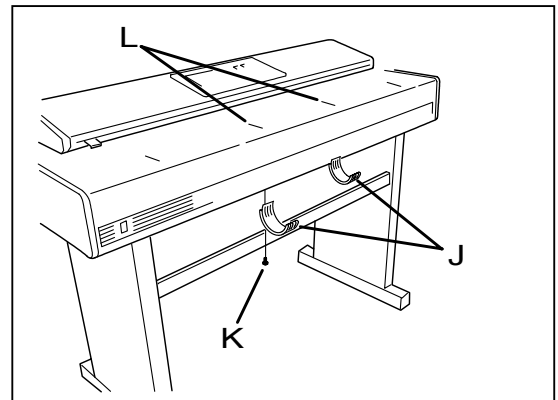
- 8) Slide the Center Tray (G) toward the scanner, and put it on the Tray Holder (C).



- 9) Expand the Supplemental Tray (E) outward if the original is large.

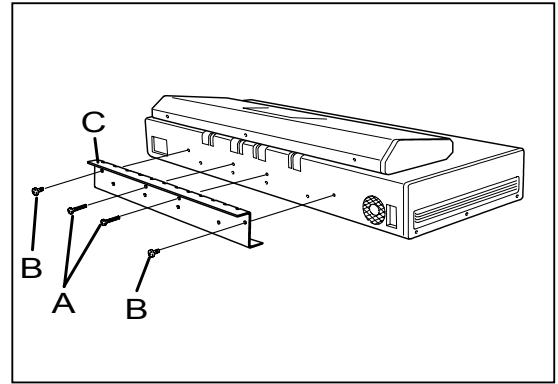


- 10) Install Original Receivers (J) to the bottom of the scanner.  
Fix them with the attached M4x8 screws (K) under the size mark of "A3" (L) on the Original Table.

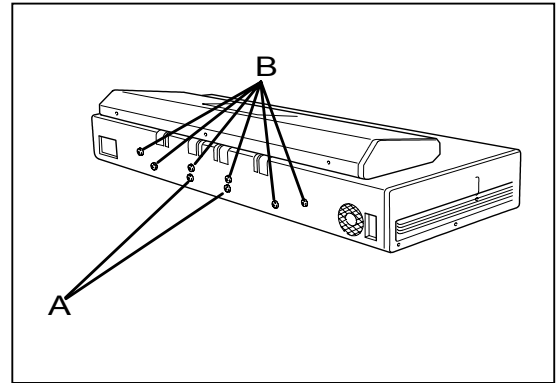


11) When you move the scanner to another place, do as follows.

- (1) Remove the Tray Holder removing 2 pieces of black M4x25 screw (A) and 6 pieces of silver M4x16 screw (B).  
You do not have to worry about the order to remove screws.



- (2) Put 2 pieces of black M4x25 screw (A) into the inner 2 screw holes of the lower screw array and tighten them first in order to fix the Optical Unit.
- (3) Put 6 pieces of silver M4x16 screw (B) into the rest of screw holes and tighten them.



- (4) Move the machine to another place, and then install the Tray Holder doing the works from 1) to 5) mentioned before.

## 2.3.3 Expanding Memory Modules (DIMM) (Optional work)

### A. Specifications for the Memory Module

We have installed 64MB of memory onto KIP2050, KIP2080, KIP2120 and KIP2160  
Expand the memory if required.

**Only service engineer can expand the memory.**

When you expand the memory, use the Memory Module (DIMM) that satisfies the following specifications.

**We recommend you to purchase the Memory Module (service parts) from us as far as possible, which has passed our test.**

1. 168 pins socket type
2. JEDEC standard terminal arrangement
3. Power 3.3V
4. Corresponded to SPD (Serial Presence Detect)
5. Corresponded to PC-100 (Clock 100MHz)
6. Parity — None
7. Buffer — None

#### [References]

1. Memory Capacity at factory forwarding ..... 64MB for KIP2050, KIP2080, KIP2120 & KIP2160
2. Number of Memory Sockets ..... 3 sockets
3. Maximum capacity ..... 320MB (64MB x 1 + 128MB x 2)

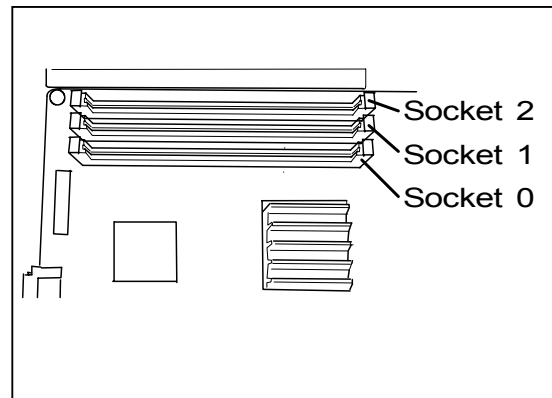
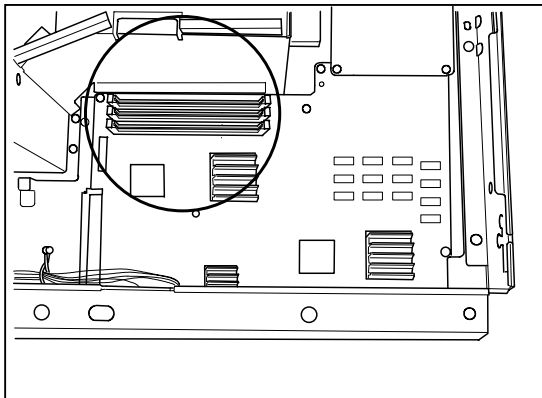
#### ! NOTE

If you connect with KIP8000 Printer (240mm/sec.), please install more memory than 320MB since it is a special case.

Refer to "B. Memory expansion when connected with KIP8000 Printer" on the page 2-12.

Install the Memory Module to each socket as the following recommendation.

	Total capacity	64MB	128MB	196MB	196MB	256MB	320MB
Socket 0		64MB	64MB	64MB	64MB	64MB	64MB
Socket 1		-	64MB	64MB	-	64MB	128MB
Socket 2		-	-	64MB	128MB	128MB	128MB



## **B. Memory expansion when connected with KIP8000 Printer**

When you will connect the scanner to KIP8000 Printer (240mm/sec.), please install more memory than 320MB.

64MB, 128MB, 256MB and 512MB DIMM are available to install.

We recommend you to install 576MB at least. (64MB x 1 and 256MB x 2)

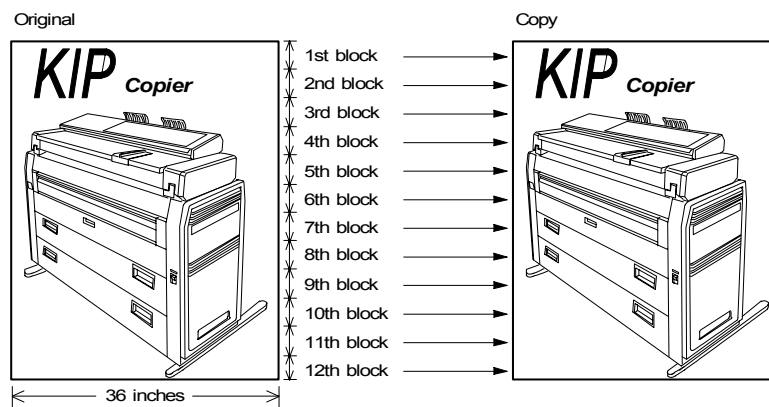
Maximum available capacity is 1024MB. (512MB x 2).

### **REFERENCE**

Scan image is normally compressed and stored in the memory, and then it is expanded and outputted to the printer.

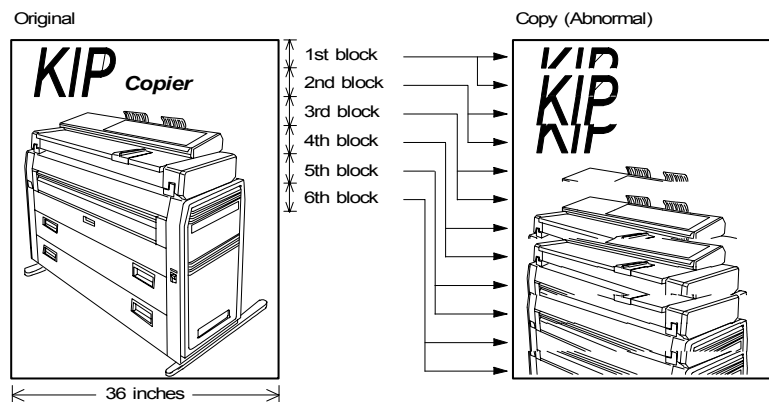
If the scanner takes this normal process for the KIP8000 Printer, abnormal copy like the following example will be printed out. (This problem occurs when you copy 36" wide original. Each image block about 50mm long is printed twice.)

#### **Proper copy**



#### **Abnormal copy**

(In case 36" wide image is compressed then printed out from KIP8000)



To avoid this problem, it is necessary not to compress the image data.

Since uncompressed image data is too large, you need more memory capacity.

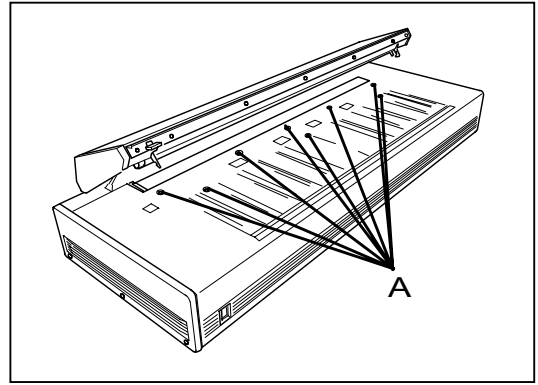
You need 576MB at least to store 36" x 16m image without compression.

("Memory full" will occur frequently if you do not expand memory.)

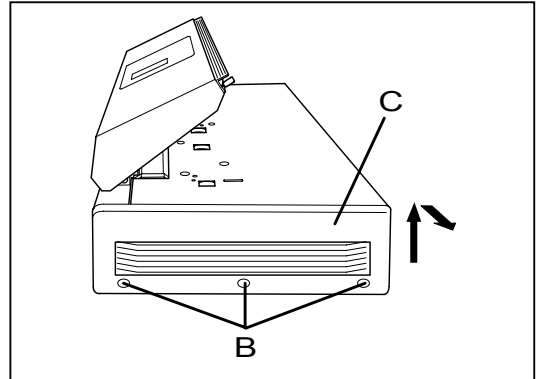
Refer to "No.290 Data compress / uncompress" on the page 7-66 also to understand more.

### C. How to expand the Memory Module

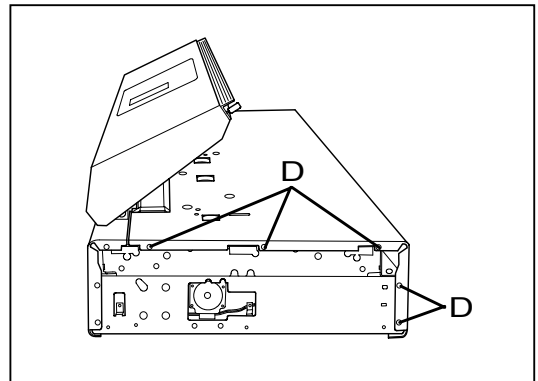
- 1) Remove 8 screws (A).



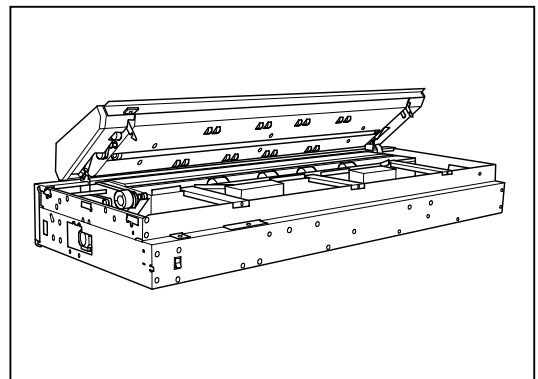
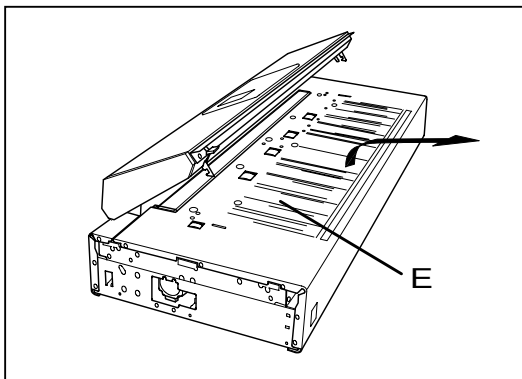
- 2) Remove 3 screws (B) to take off each Side Cover (C) at both sides.



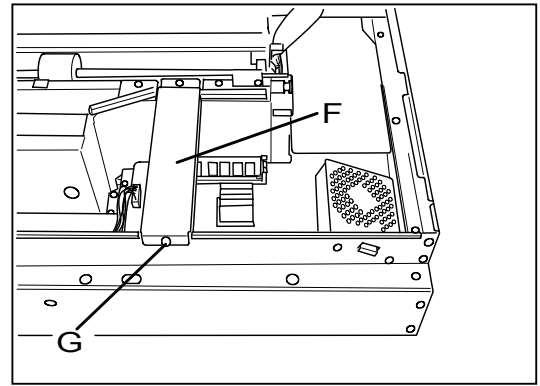
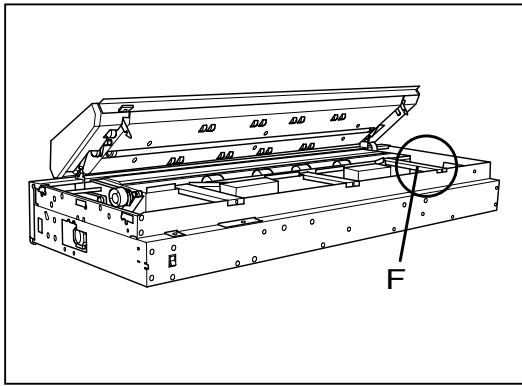
- 3) Remove 10 screws (D) at both sides.  
(5 pieces on one side)



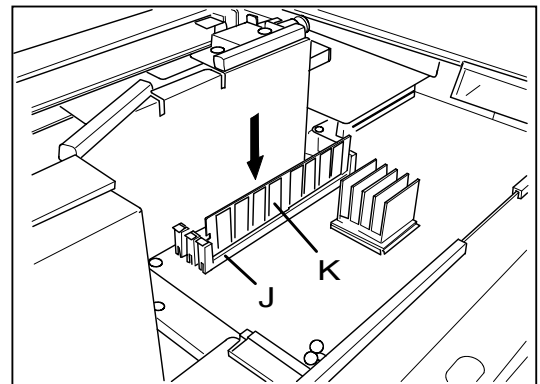
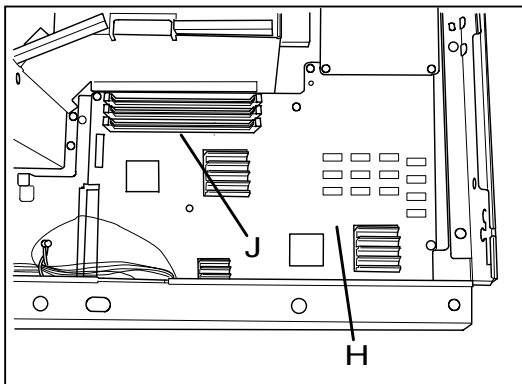
- 4) Remove the Original Table (E).



- 5) There are 3 pieces of Reinforcement Plate in the Base Unit.  
Remove only the right one (F) of them removing a screw (G).



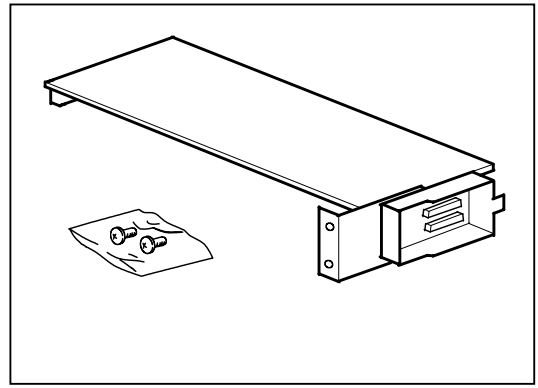
- 6) The Image Processor PCB (H) has 3 Memory Sockets (J).  
Install the Memory Module (K) to each Memory Socket (J).



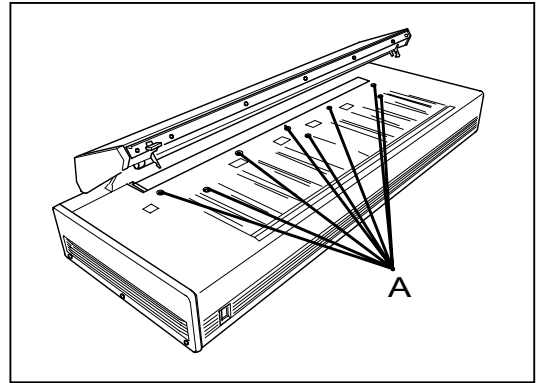
- 7) Put back all removed parts in the reversed order.

### 2.3.4 Installing the SCSI PCB (Optional work)

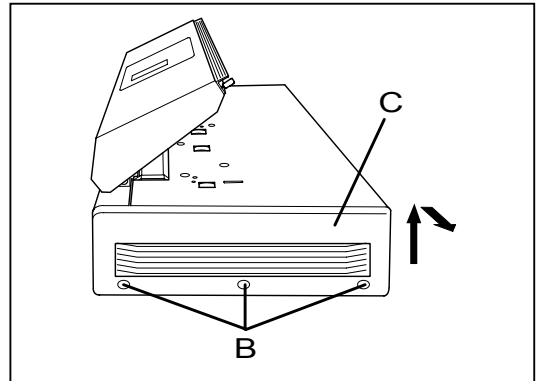
The SCSI PCB is attached with 2 pieces of screw.  
Confirm that screws are not missed out.



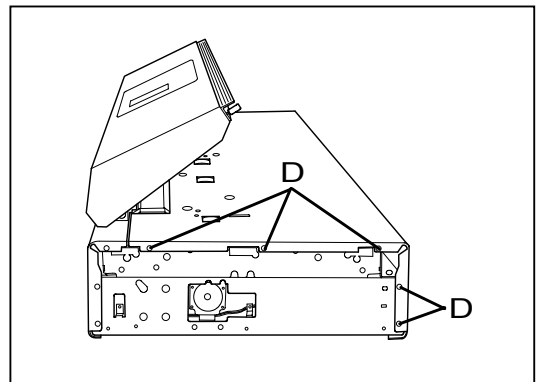
- 1) Remove 8 screws (A).



- 2) Remove 3 screws (B) to take off each Side Cover (C) at both sides.

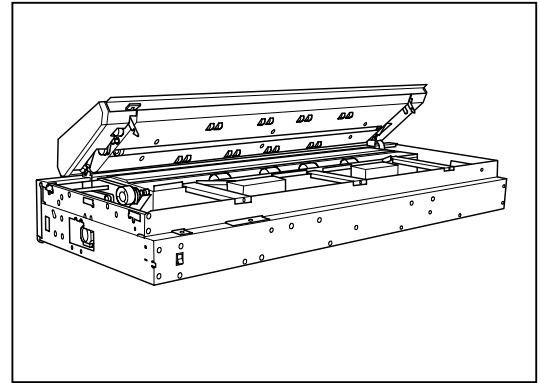
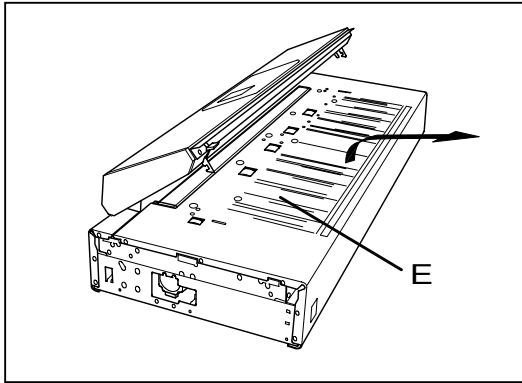


- 3) Remove 10 screws (D) at both sides.  
(5 pieces on one side)

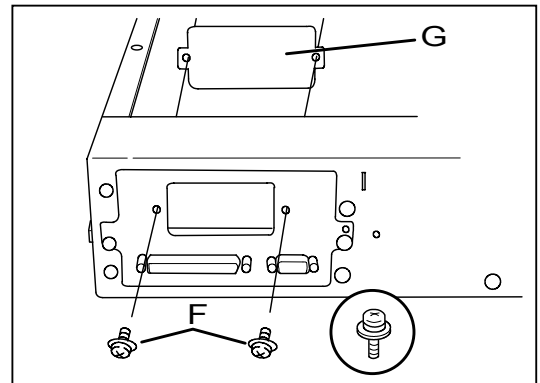
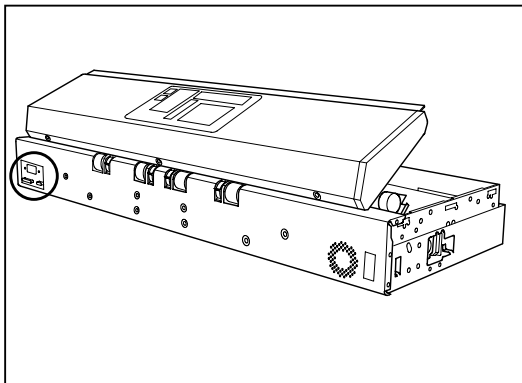




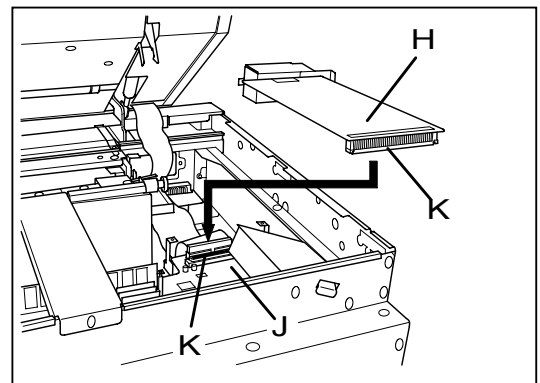
4) Take off the Original Table (E).



5) Remove 2 screws (F) at the rear of the scanner to remove the SCSI Cover (G).  
**These screws (F) are used when you install the SCSI PCB at the following step 7).**  
**Do not lose them positively.**  
**Also, keep the removed SCSI Cover (G).**

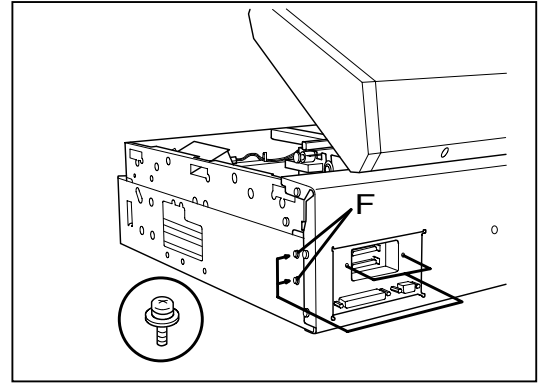
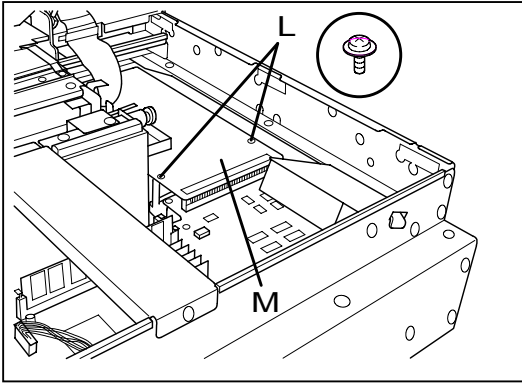


6) Connect SCSI PCB (H) and Image Processor PCB (J) each other connecting the connector (K).



- 7) Fix the SCSI PCB (H) with 2 pieces of attached screw (L) and 2 pieces of screw (F) removed at the former step 5).

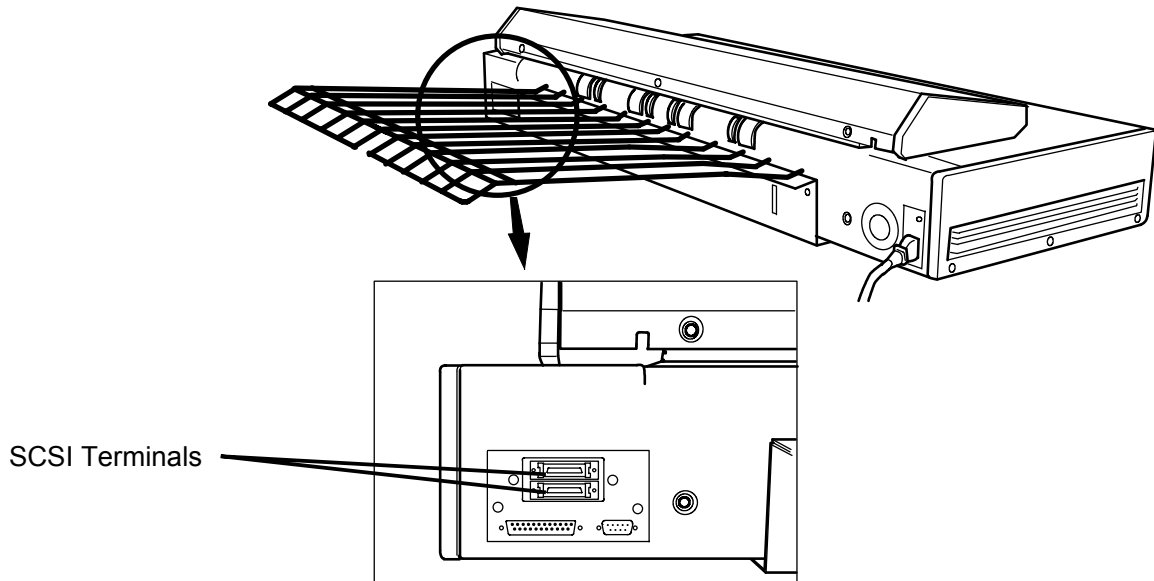
Note : Tighten the lower one of screws (F) first.



- 8) Put back all removed parts in the reversed order.

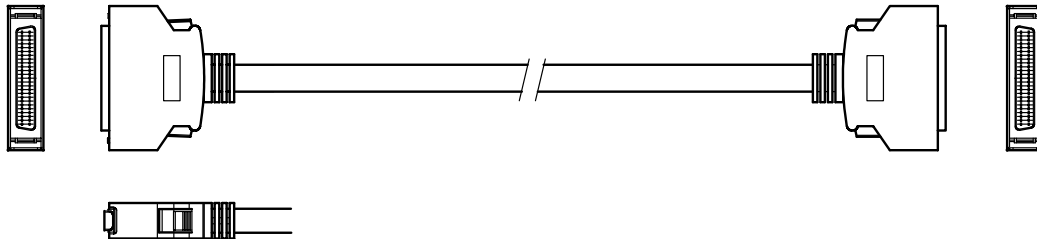
### 2.3.5 Connecting the SCSI Cable (Optional work)

Connect the connector of the SCSI Cable firmly to the SCSI Terminal.  
(It must be clicked into place and locked firmly when connected to the SCSI Terminal.)



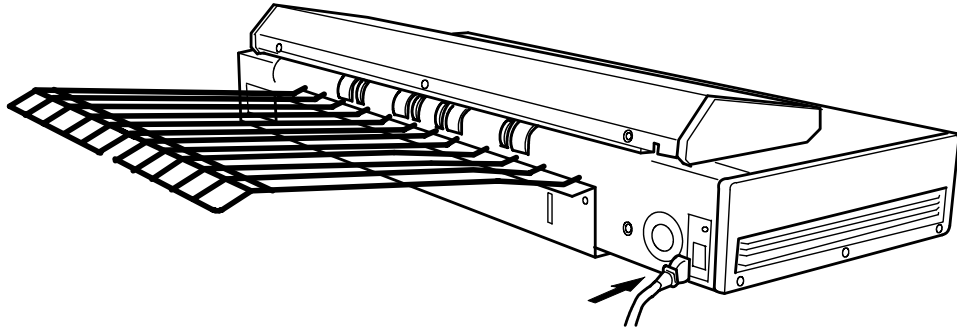
[Specifications for the SCSI Cable]

Used SCSI Cable must be in conformity to the standard on SCSI, and its connector should be corresponded to 50 pins terminal (Dsub Half 50 Pins).  
As for the way to connect to the computer, follow the instruction of computer's manual.

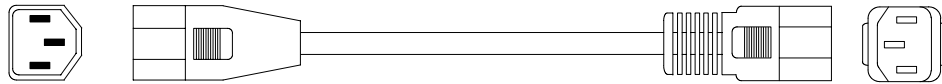


### 2.3.6 Connecting the Power Cord

Connect one end of the Power Cord to the Inlet Socket at the back of the scanner. Connect the plug on another side to the outlet of which voltage is either 100V or 200V. You do not have to care about the voltage condition because the scanner is automatically corresponded to it if only you connect the plug to the outlet and turn on the scanner. However, the voltage of outlet must be from 100V to 240V plus or minus 10%.



(Power Cord)



Applicable Coupler  
Rating : 250VAC and 10A

### 2.3.7 Connecting with the printer

- 1) Be sure that both scanner and printer are turned off before connecting them with each other.
- 2) Connect one connector of the attached Printer Cable to the Interface 8 at the rear of the scanner, and connect another connector to printer's input terminal.

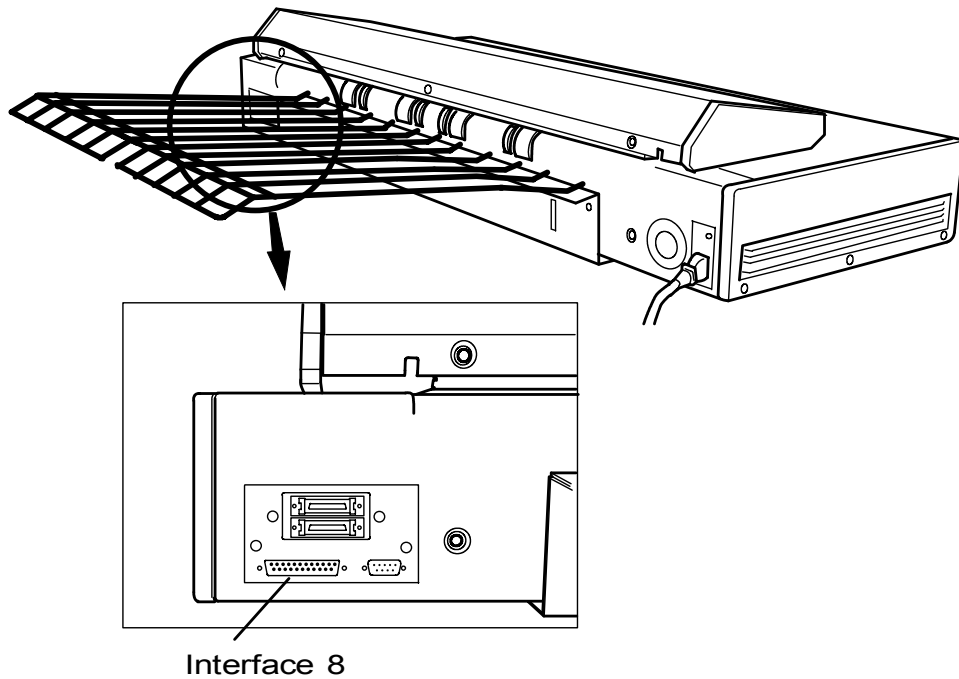


#### Note

It is possible not to use the attached Printer Cable but to use the one you purchased if it is connectable.

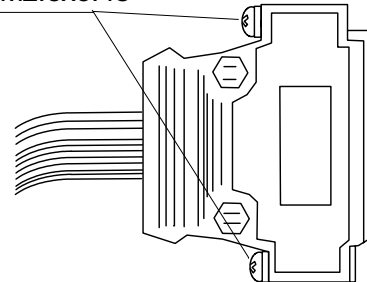
In this case, however, make sure to use 5 meters or shorter one.

If the Printer Cable is longer than 5 meters, we can not guarantee the result.



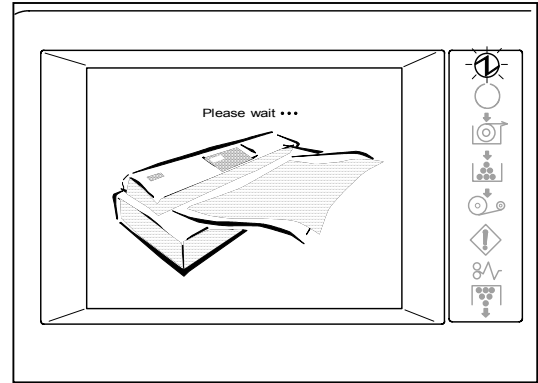
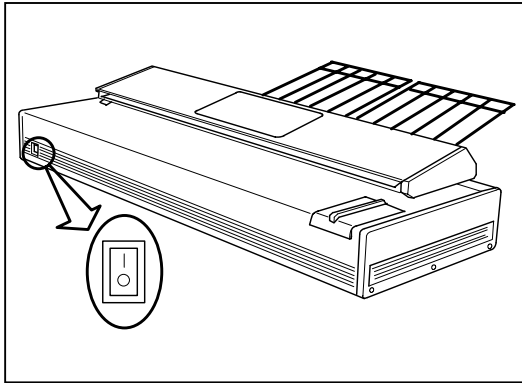
- 3) Fix each connector of the Printer Cable firmly to the terminal by turning Locking Screws.

Locking Screws  
M2.6x0.45



## 2.3.8 Turning on the scanner

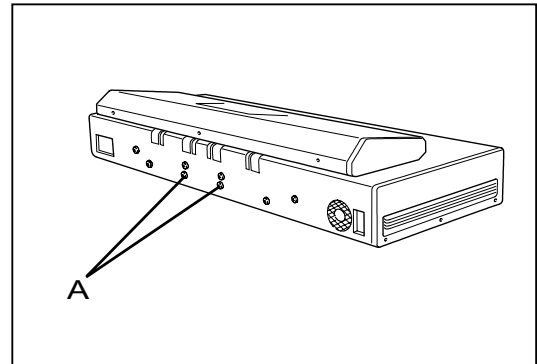
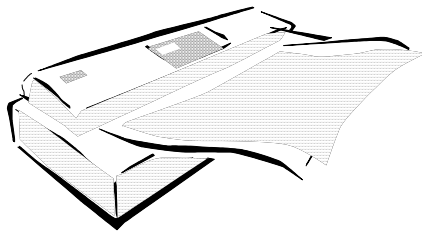
- 1) Press “|” side of the Power Switch to turn on the scanner.  
The Power Indicator lights up, and the LCD indicates “Please wait” in English.



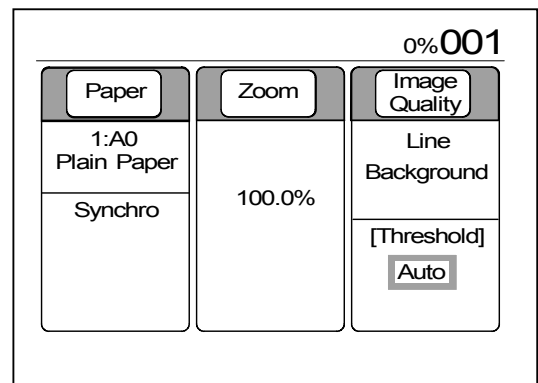
### Note

If the LCD indicates “An error occurred (3)” instead of “Please wait”, the Optical Unit may be fixed with inner 2 pieces of black M4x25 screw (A) of the lower screw array.  
Replace these screws (A) and inner 2 pieces of silver M4x16 screw of the upper screw array with each other.

An error occurred (3)



- 2) The position of Optical Unit is adjusted when  
“Please wait” is indicated.  
When it is placed at a proper place and the scanner  
gets ready, the LCD indicates the Basic Screen in  
English as the right figure.



## 2.3.9 Backup Data settings at the time of installation

### A. Setting items

Change the following Back Up Data according to the requirement.

Refer to "Reference page" if you would like to know the detail of each Backup Data

Back Up Data No.	Contents	Default setting	Reference page
1	<b>LCD language setting</b> Select any of the following languages according to customer's residence.  (Setting value) 0 : Japanese 1 : English 2 : French 3 : German 4 : Italian 5 : Spanish	1 : English	7-19
2	<b>Country setting for English speaking countries</b> If you selected "English" in the above No.1, select either of the following setting value since the indicated English is a little different.  (Setting value) 0 : U.S.A. (American English) 1 : U.K. (British English)	0 : U.S.A.	7-20
3	<b>Metric or inch</b> Select "1" (Inch) only in U.S.A.  (setting value) 0 : Metric 1 : Inch	0 : Metric	7-20
15	<b>Number of Roll Decks of the connected printer</b> Change the setting value according to the number of Roll Decks the connected printer has.  (Setting value) 1 : 1 Roll Deck 2 : 2 Roll Decks 3 : 3 Roll Decks 4 : 4 Roll Decks	4 : 4 Roll Decks	7-25
25	<b>Amount of data stored before starting Direct Print</b> This setting value must be "25" normally. Only in the combination of KIP2160 (160mm/sec.) and KIP9010 (160mm/sec.), however, select "40".	25	7-28

Back Up Data No.	Contents	Default setting	Reference page																																				
170 to 186	<p><b>Data of Threshold Levels from 1 to 17 (Photo Mode)</b> Only in case you connect the scanner with the KIP8000 Printer (240mm/sec.), change the setting values as follows.</p> <table><tr><th>Backup Data No.</th><th>Setting values for KIP8000</th></tr><tr><td>170</td><td>40</td></tr><tr><td>171</td><td>43</td></tr><tr><td>172</td><td>46</td></tr><tr><td>173</td><td>50</td></tr><tr><td>174</td><td>54</td></tr><tr><td>175</td><td>58</td></tr><tr><td>176</td><td>62</td></tr><tr><td>177</td><td>66</td></tr><tr><td>178</td><td>70</td></tr><tr><td>179</td><td>77</td></tr><tr><td>180</td><td>84</td></tr><tr><td>181</td><td>91</td></tr><tr><td>182</td><td>98</td></tr><tr><td>183</td><td>106</td></tr><tr><td>184</td><td>114</td></tr><tr><td>185</td><td>122</td></tr><tr><td>186</td><td>130</td></tr></table> <p>It is not necessary to change these Backup Data if the other kind of printer is connected.</p>	Backup Data No.	Setting values for KIP8000	170	40	171	43	172	46	173	50	174	54	175	58	176	62	177	66	178	70	179	77	180	84	181	91	182	98	183	106	184	114	185	122	186	130	171 : 10 171 : 13 172 : 16 173 : 20 174 : 24 175 : 28 176 : 32 177 : 36 178 : 40 179 : 47 180 : 54 181 : 61 182 : 68 183 : 76 184 : 84 185 : 92 186 : 100	7-53
Backup Data No.	Setting values for KIP8000																																						
170	40																																						
171	43																																						
172	46																																						
173	50																																						
174	54																																						
175	58																																						
176	62																																						
177	66																																						
178	70																																						
179	77																																						
180	84																																						
181	91																																						
182	98																																						
183	106																																						
184	114																																						
185	122																																						
186	130																																						
210 to 214	<p><b>LED Strobe Time (When scanner is KIP2050)</b> You have to change the setting values of these items if you connect some kind of printer. Please refer to the page 7-60 as the detail is explained.</p>	210 : 10 211 : 15 212 : 20 213 : 25 214 : 30	7-60																																				
215 to 219	<p><b>LED Strobe Time (When scanner is KIP2080)</b> You have to change the setting values of these items if you connect some kind of printer. Please refer to the page 7-61 as the detail is explained.</p>	215 : 5 216 : 10 217 : 15 218 : 20 219 : 25	7-61																																				
220 to 224	<p><b>LED Strobe Time (When scanner is KIP2120)</b> You have to change the setting values of these items if you connect some kind of printer. Please refer to the page 7-62 as the detail is explained.</p>	220 : 5 221 : 10 222 : 15 223 : 20 224 : 25	7-62																																				
225 to 229	<p><b>LED Strobe Time (When scanner is KIP2160)</b> You have to change the setting values of these items if you connect some kind of printer. Please refer to the page 7-63 as the detail is explained.</p>	225 : 5 226 : 10 227 : 15 228 : 20 229 : 25	7-63																																				
230 to 234	<p><b>LED Strobe Time (JPN - 2600)</b> You have to change the setting values of these items if you connect some kind of printer. Please refer to the page 7-64 as the detail is explained.</p>	230 : 5 231 : 10 232 : 15 233 : 20 234 : 25	7-64																																				

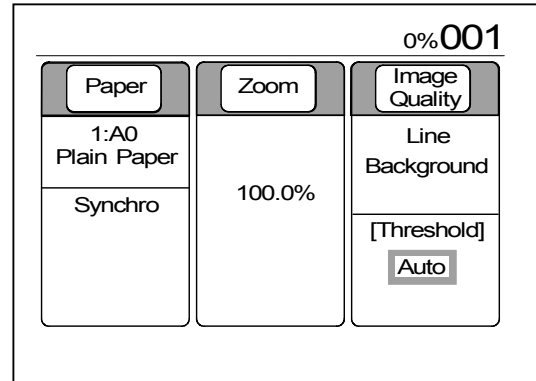
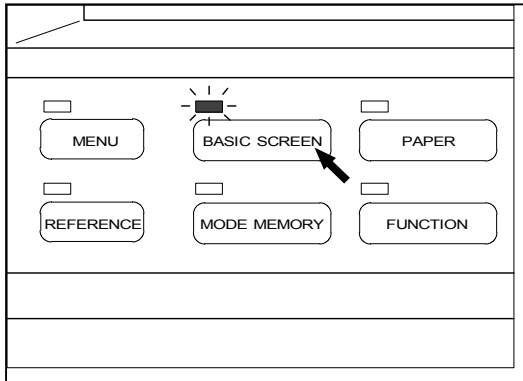


Back Up Data No.	Contents	Default setting	Reference page
290	<b>Data compress / uncompress (In the Copy Mode)</b> Select "1" or "2" only in case you connect the scanner to KIP8000 Printer. Select "0" in case the other printer is connected.  (Setting value) 0 : Always compress 1 : Always uncompress 2 : Compress only in Set Copy (Sort)	0 : Always compress	7-66
292	<b>Availability to set multiple number of cut sheet media onto bypass feeder</b> Select "1" only in case you connect the scanner to KIP8000 Printer. Select "0" in case the other printer is connected.  (Setting value) 0 : Not available 1 : Available	0 : Not available	7-79

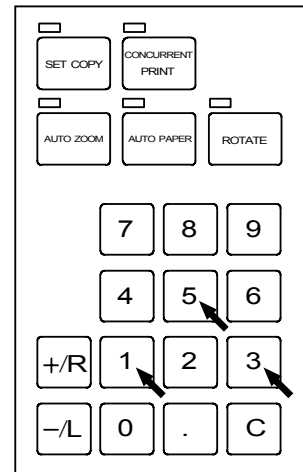
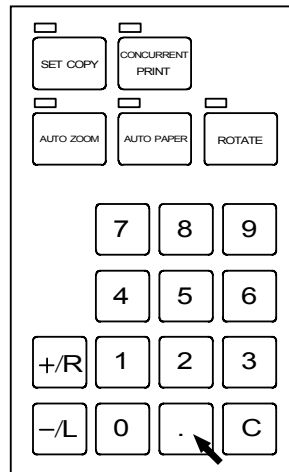
## B. LCD language setting (Back Up Data No.1)

The first time you turn on the scanner after the installation, the LCD language is English.  
Therefore, change the setting of Back Up Data No.1 (LCD language setting) according to customer's residence in the following way.  
(English version of Operation Panel Sheet is used in the following example.)

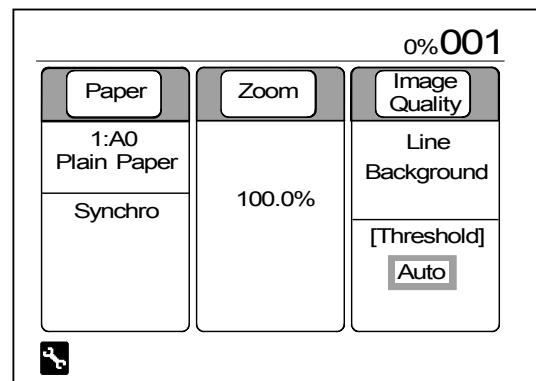
- 1) Push the Basic Screen Key to indicate the Basic Screen on the LCD.



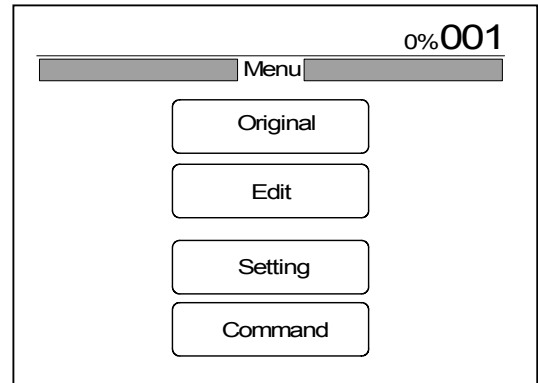
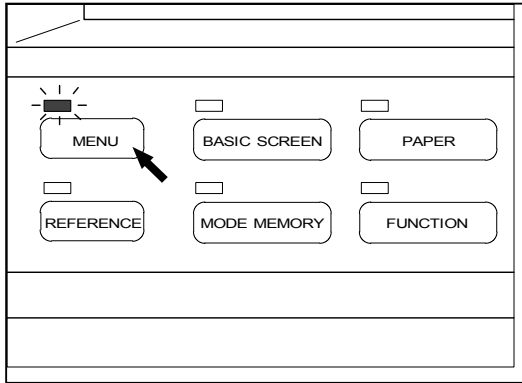
- 2) Press and hold the [ . ] Key, and then push keys in the order as [1], [3] and [5] to enter the Service Mode.



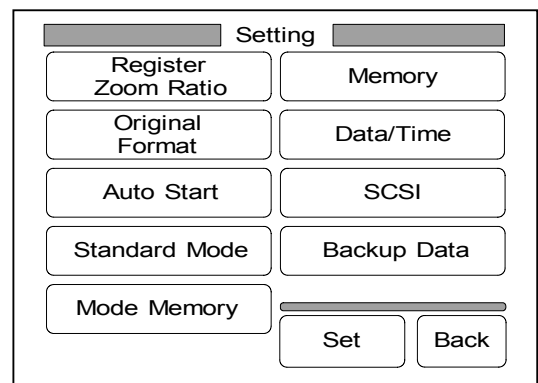
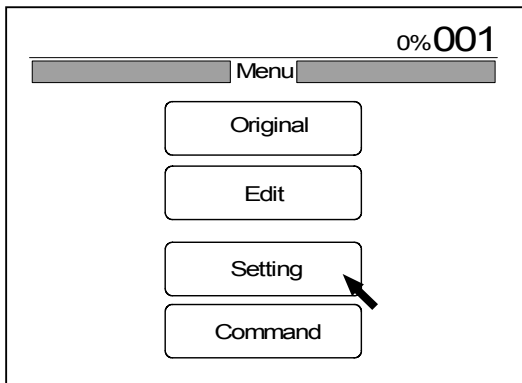
- 3) A mark of wrench is indicated in the Basic Screen when you enter the Service Mode.



4) Push the Menu Key to indicate the Menu Screen on the LCD.

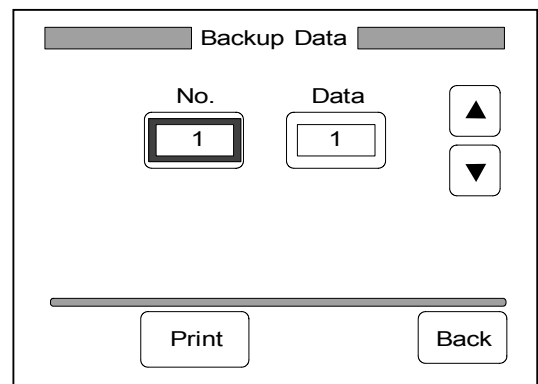
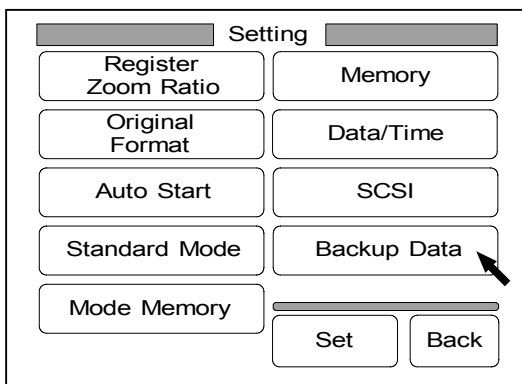


5) Press "Setting" to indicate the Setting Screen on the LCD.

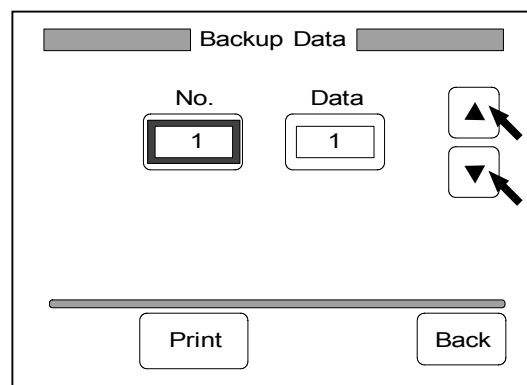


6) Press "Backup Data" to indicate the Back Up Data Setting Screen on the LCD.

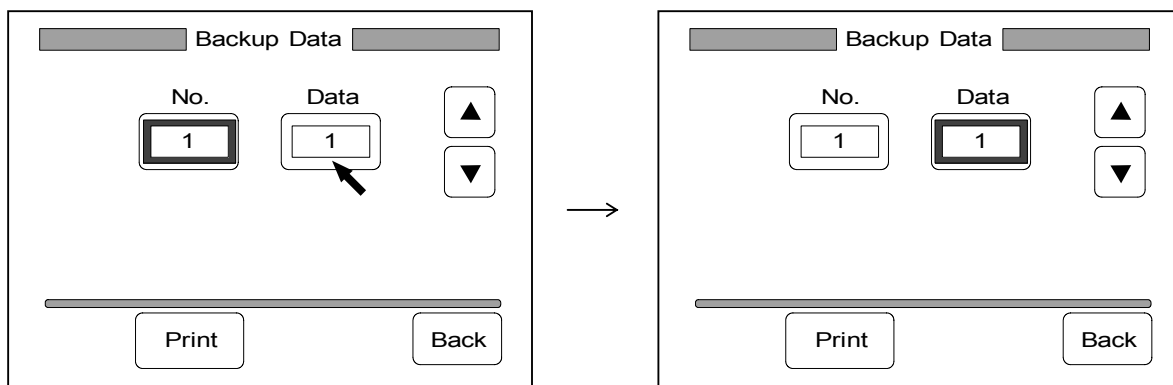
The value under "No." means the Back Up Data Number now selected, and the value under "Data" means the present setting value of the selected Back Up Data Number.



- 7) When the frame of “No.” is thick, it is possible to select your required Back Up Data Number pressing ▲ and ▼ on the LCD or inputting the number directly with Ten Keys.  
(You do not have to change the Back Up Data Number at this time since you will change the No.1. But if you will change the setting of the other Back Up Data, select its Back Up Data Number in this way.)

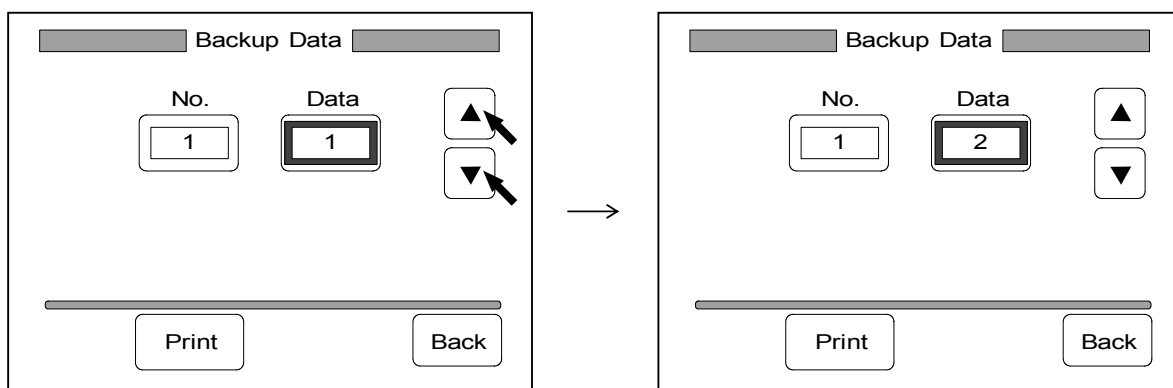


- 8) If you press the value under “Data”, its frame becomes thick and it becomes possible to change the setting value.



- 9) Choose any of the following setting values pressing ▲ and ▼ on the LCD or inputting the value directly with Ten Keys.

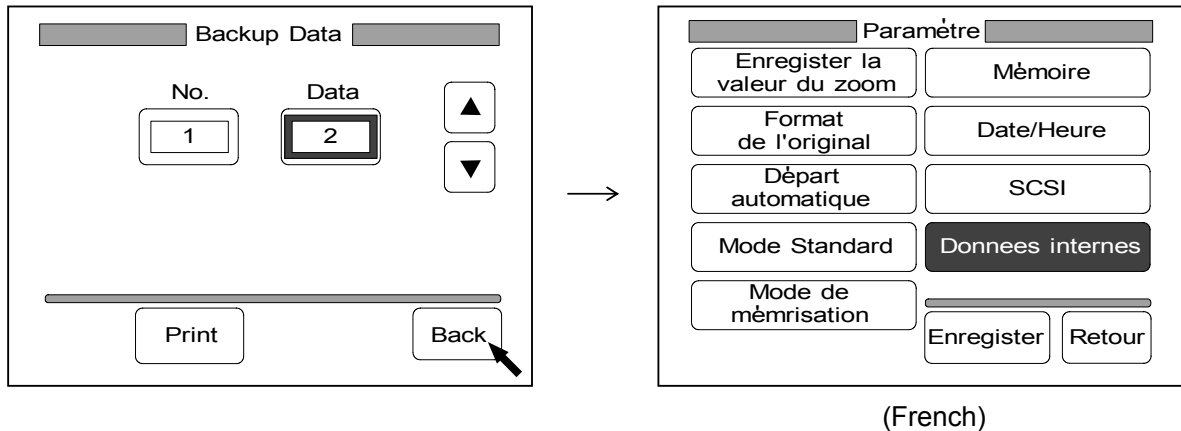
0 : Japanese	3 : German
1 : English	4 : Italian
2 : French	5 : Spanish



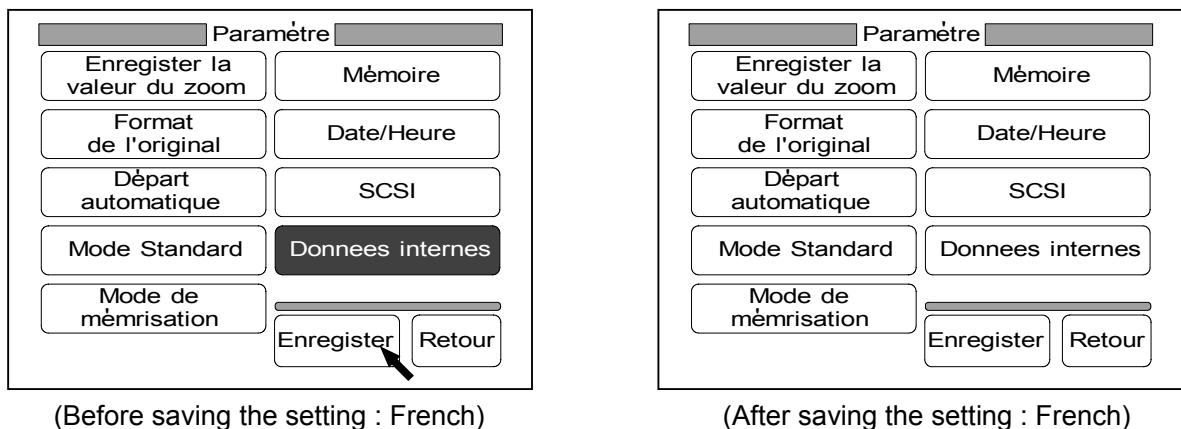
(English)

(French)

- 10) Press “Back” to indicate the Setting Screen again on the LCD.  
 LCD language varies depending on the selected setting value.  
 The item “Backup Data” (It depends on the selected language. “Donnees internes” in the following figure.) in the Setting Screen is colored at this time showing that some Back Up Data setting has been changed.



- 11) Press “Set” (It also depends on the selected language. “Enregistrer” in the following figure.) in the Setting Screen to save the changed Back Up Data Setting.  
 “Backup Data” in the Setting Screen is not colored any longer after saving.  
 By saving, the changed Back Up Data setting becomes valid later on even if you turn off the scanner.



### Note

If you turn off the scanner without saving the changed setting, it will be lost.

### C. Changing the other Back Up Data and printing out the Back Up Data List

If you have changed the LCD language setting (No.1), change the setting of each Back Up Data making reference to the list of “A. Setting items” on pages from 2-22 to 2-24 in the same way if required. After that, print out the Back Up Data List in the following way. Please keep this Back Up Data List since it has unique Back Up Data settings for this machine and you will use the list in the future.

- 1) Press “Print” in the Back Up Data Setting Screen to print out the Back Up Data List.

Backup Data

No.

1

Data

1

▲

▼

Print

Back

Backup data															
No	data	No	data	No	data	No	data	No	data	No	data	No	data	No	data
1	0	51	0	101	-49	151	49	201	-	251	-	301	-	351	-
2	0	52	0	102	-66	152	42	202	-	252	-	302	-	352	-
3	0	53	0	103	-82	153	35	203	-	253	-	303	-	353	-
4	-	54	0	104	-99	154	28	204	-	254	-	304	-	354	-
5	210	55	-	105	-115	155	21	205	3	255	-	305	-	355	-
6	210	56	-	106	-132	156	14	206	-	256	-	306	-	356	-
7	30	57	-	107	-	157	7	207	-	257	-	307	-	357	-
8	-	58	-	108	75	158	0	208	-	258	-	308	-	358	-
9	-	59	-	109	64	159	-22	209	-	259	-	309	-	359	-
10	3	60	0	110	80	160	-44	210	10	260	-	310	-	360	-
11	0	61	0	111	93	161	-66	211	15	261	-	311	-	361	-
12	0	62	0	112	105	162	-88	212	20	262	-	312	-	362	-
13	1	63	0	113	118	163	-110	213	25	263	-	313	-	363	-
14	15	64	0	114	130	164	-132	214	30	264	-	314	-	364	-
15	4	65	-	115	143	165	-140	215	5	265	-	315	-	365	-
16	1	66	-	116	155	166	-148	216	10	266	-	316	-	366	-
17	-	67	-	117	168	167	-	217	15	267	-	317	-	367	-
18	-	68	-	118	180	168	-	218	20	268	-	318	-	368	-
19	-	69	-	119	186	169	64	219	25	269	-	319	-	369	-
20	1	70	28	120	193	170	10	220	5	270	-	320	-	370	-
21	-	71	45	121	199	171	13	221	10	271	-	321	-	371	-
22	-	72	61	122	206	172	16	222	15	272	-	322	-	372	-
23	-	73	78	123	212	173	20	223	20	273	-	323	-	373	-
24	-	74	94	124	219	174	24	224	25	274	-	324	-	374	-
25	25	75	111	125	225	175	28	225	5	275	-	325	-	375	-
26	100	76	127	126	232	176	32	226	10	276	-	326	-	376	-
27	200	77	144	127	-	177	36	227	15	277	-	327	-	377	-
28	100	78	160	128	-	178	40	228	20	278	-	328	-	378	-
29	10	79	166	129	-	179	47	229	25	279	-	329	-	379	-
30	-	80	172	130	20	180	54	230	-	280	-	330	-	380	-
31	-	81	178	131	22	181	61	231	-	281	-	331	-	381	-
32	-	82	184	132	24	182	68	232	-	282	-	332	-	382	-
33	-	83	190	133	26	183	76	233	-	283	-	333	-	383	-
34	-	84	196	134	28	184	84	234	-	284	-	334	-	384	-
35	-	85	202	135	31	185	92	235	-	285	-	335	-	385	-
36	-	86	208	136	34	186	100	236	-	286	-	336	-	386	-
37	-	87	-	137	37	187	270	237	-	287	-	337	-	387	-
38	-	88	-	138	40	188	-	238	-	288	-	338	-	388	-
39	-	89	-	139	47	189	-	239	-	289	-	339	-	389	-
40	0	90	56	140	54	190	0	240	-	290	-	340	-	390	-
41	0	91	49	141	61	191	0	241	-	291	-	341	-	391	-
42	0	92	42	142	68	192	-	242	-	292	-	342	-	392	-
43	0	93	35	143	76	193	-	243	-	293	-	343	-	393	-
44	0	94	28	144	84	194	-	244	-	294	-	344	-	394	-
45	0	95	21	145	92	195	0	245	-	295	-	345	-	395	-
46	0	96	14	146	100	196	0	246	-	296	-	346	-	396	-
47	0	97	7	147	300	197	-	247	-	297	-	347	-	397	-
48	0	98	0	148	-	198	-	248	-	298	-	348	-	398	-
49	0	99	-16	149	-	199	-	249	-	299	-	349	-	399	-
50	0	100	-33	150	56	200	0	250	-	300	0	350	-	400	-

scan count > 450m

> 60 count

memory > 64MB

version > T10.00

SCSI > ID:6

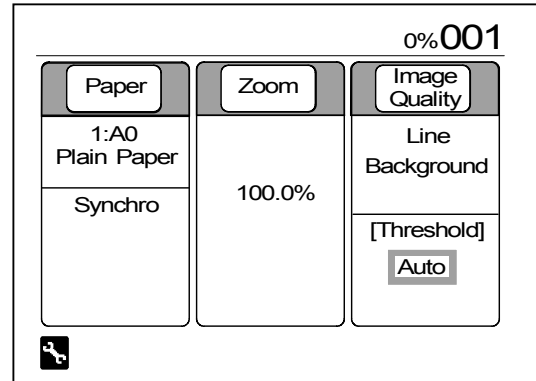
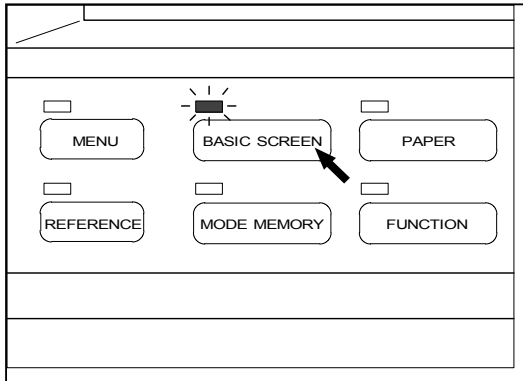
> terminator:ON

## D. Canceling the Service Mode

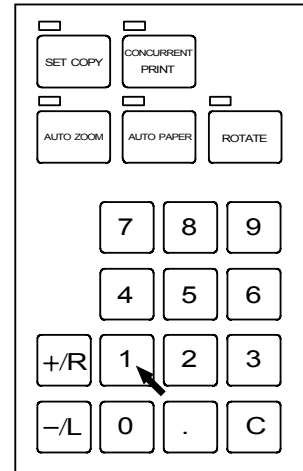
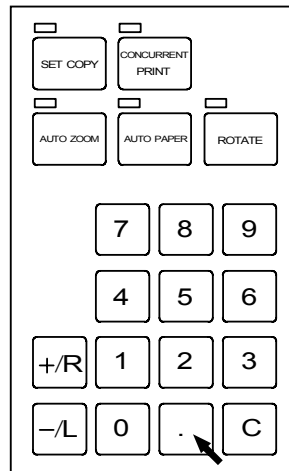
When you have finished to save all of changed Back Up Data and when you have finished to print out the Back Up Data List, cancel the Service Mode in the following way.

(Please note that English version of Operation Panel Sheets are used and LCD language setting is English in the following example.)

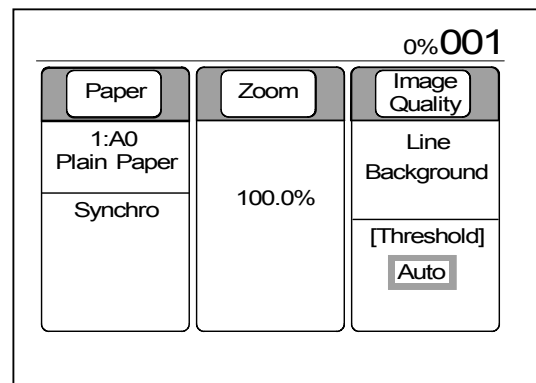
- 1) Push the Basic Screen Key to indicate the Basic Screen on the LCD.



- 2) Press and hold the [ . ] Key, and then push the Ten Key [1] to cancel the Service Mode.

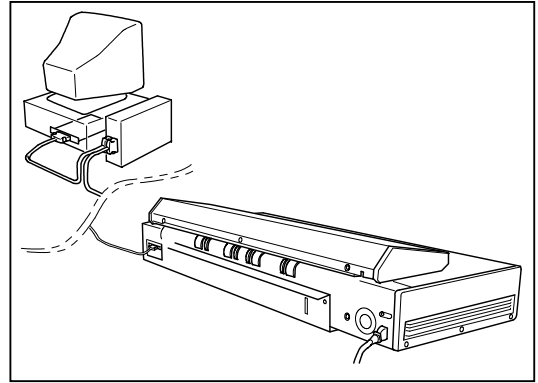


- 3) The mark of wrench on the LCD disappears when you cancel the Service Mode.

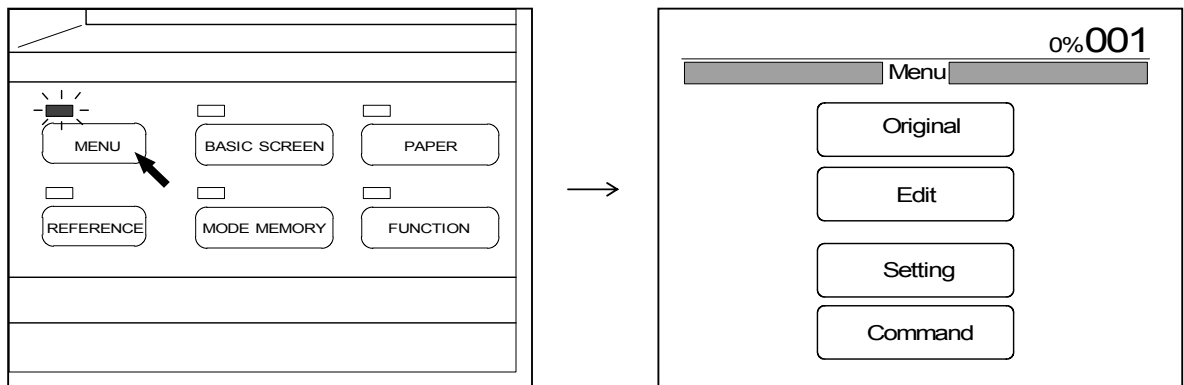


### 2.3.10 SCSI ID and Terminator settings (Optional work)

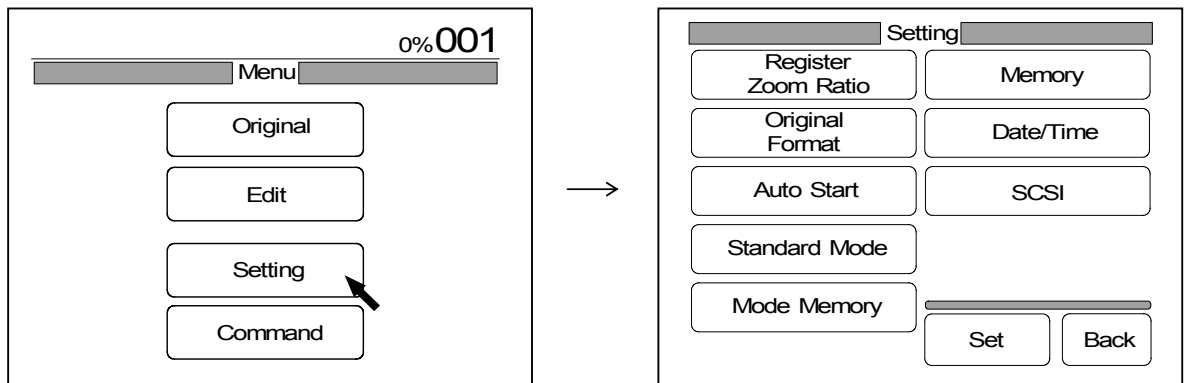
- 1) Make sure to have finished installing the SCSI PCB and to connect the SCSI Cable before starting the following work.



- 2) Push the Menu Key to indicate the Menu Screen on the LCD.

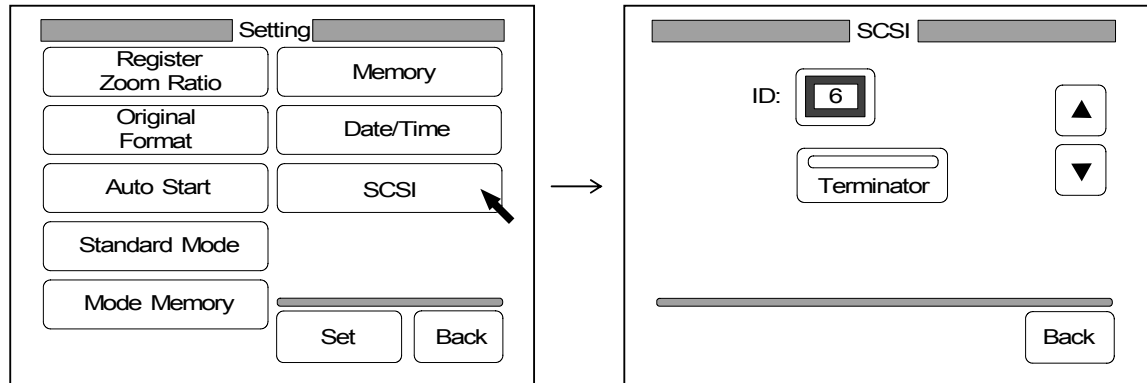


- 3) Press "Setting" in the Menu Screen to indicate the Setting Screen on the LCD.

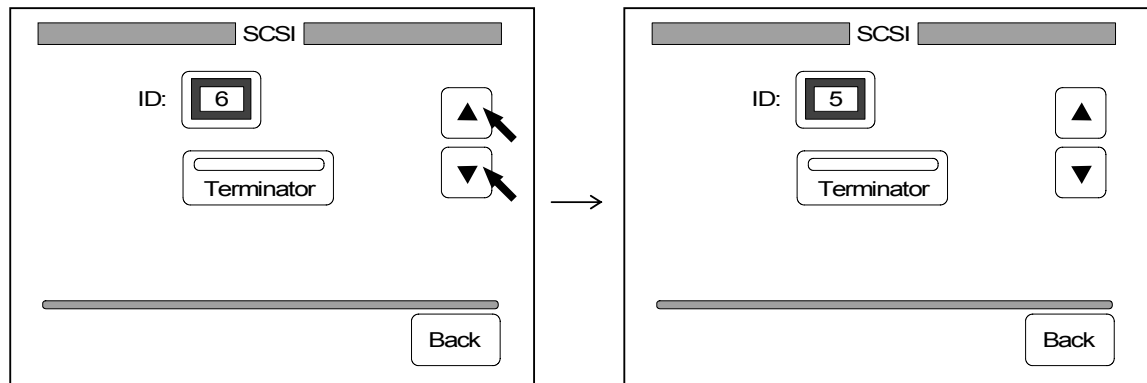




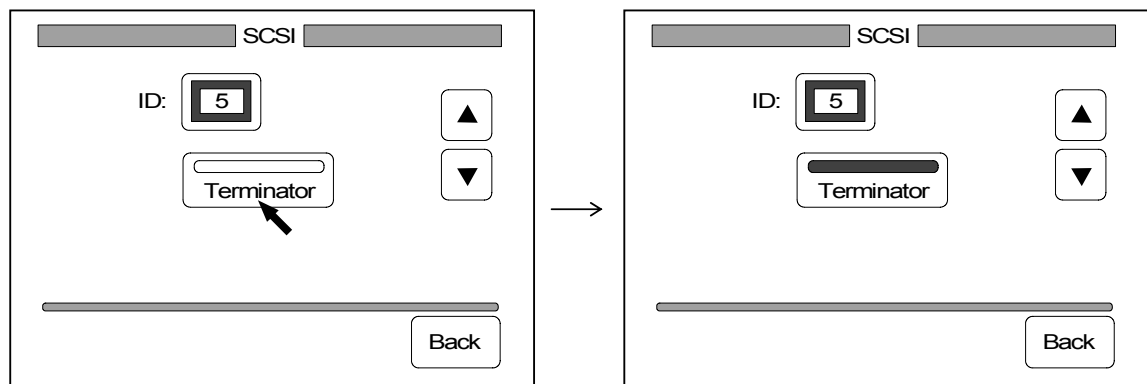
- 4) Press "SCSI" in the Setting Screen to indicate the SCSI Setting Screen on the LCD.



- 5) Change the ID Number pressing ▲ and ▼.



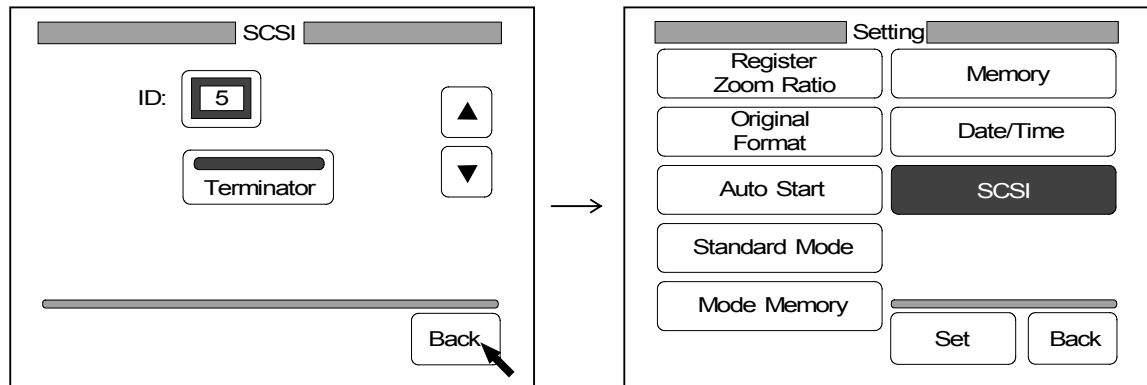
- 6) If this scanner is the terminal one of SCSI devices, make the Terminator ON pressing "Terminator".  
"Terminator" is colored when settled.



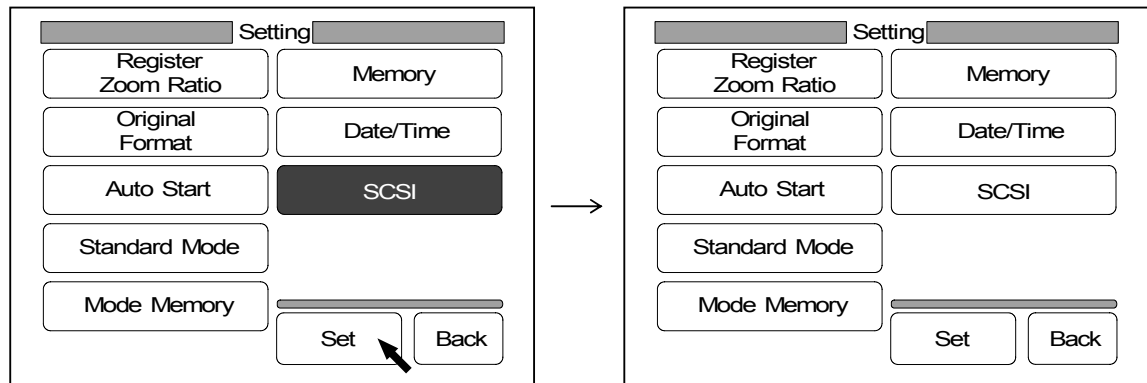
### Note

If you are not sure of the setting of Terminator, refer to "Instruction for Terminator setting" on and after the page 2-33.

7) Press “Back” to indicate the Setting Screen again.



- 8) Item “SCSI” in the Setting Screen is colored showing that you have changed its setting.  
If you press “Set”, the changed SCSI setting is saved and becomes valid later on even if you turn off the scanner.  
Press “Set” to save the SCSI setting.  
Item “SCSI” is not colored any longer after pressing “Set” showing that your SCSI setting has been saved.



### Note

If you do not press “Set”, the changed SCSI setting will be lost if you turn off the scanner.

[Instruction for Terminator setting]

The SCSI Signal will be unstable if no Terminator exists on SCSI.

In this case SCSI Controller of KIP2000 scanner may make the CPU carry out illegal interruption processes continuously. (For example, a reset signal is inputted from the SCSI Signal.)

As the result of it, there may be the case that the Operation Panel does not react to your operation or its reaction becomes too slowly.

The followings are necessary Terminator settings if the scanner is equipped with the SCSI PCB.

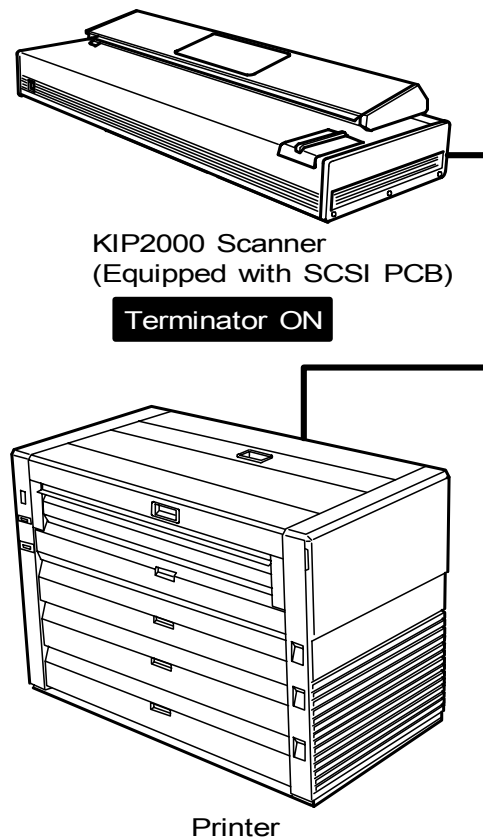
(4 kinds of configuration can be assumed if the scanner is equipped with the SCSI PCB.)

Follow the instruction in order to avoid the trouble.

**1. Scanner is connected to the printer only  
(Scanner is equipped with the SCSI PCB)**

**Make sure to make scanner's Terminator "ON"** when the scanner is equipped with the SCSI PCB even if it is not connected to the computer.

If the Terminator is OFF, the Operation Panel may have an abnormality.

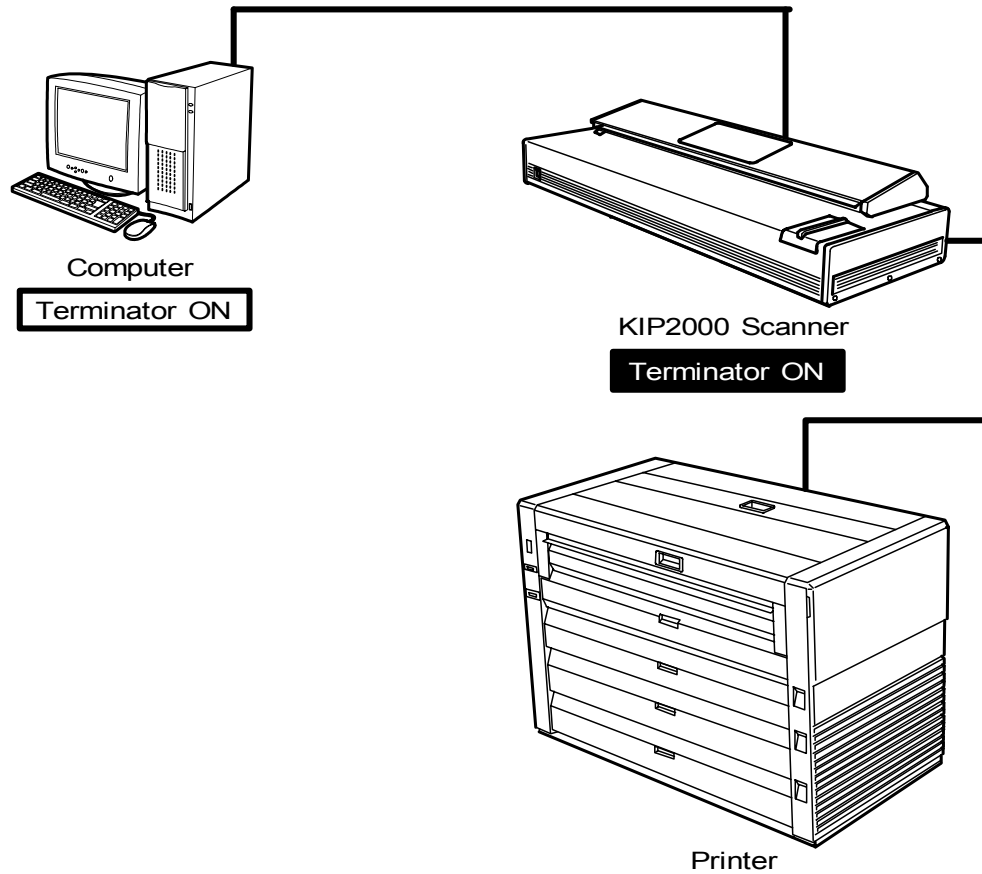


**2. Scanner is connected to printer and computer  
(Scanner is only the SCSI device connected to the computer)**

**Make sure to make scanner's Terminator "ON"** since it is possible to think that scanner is the terminal one of SCSI devices.

It is possible to take copying (scan to print) without problem even if the computer is turned off.

If the Terminator is OFF, the Operation Panel may have an abnormality.

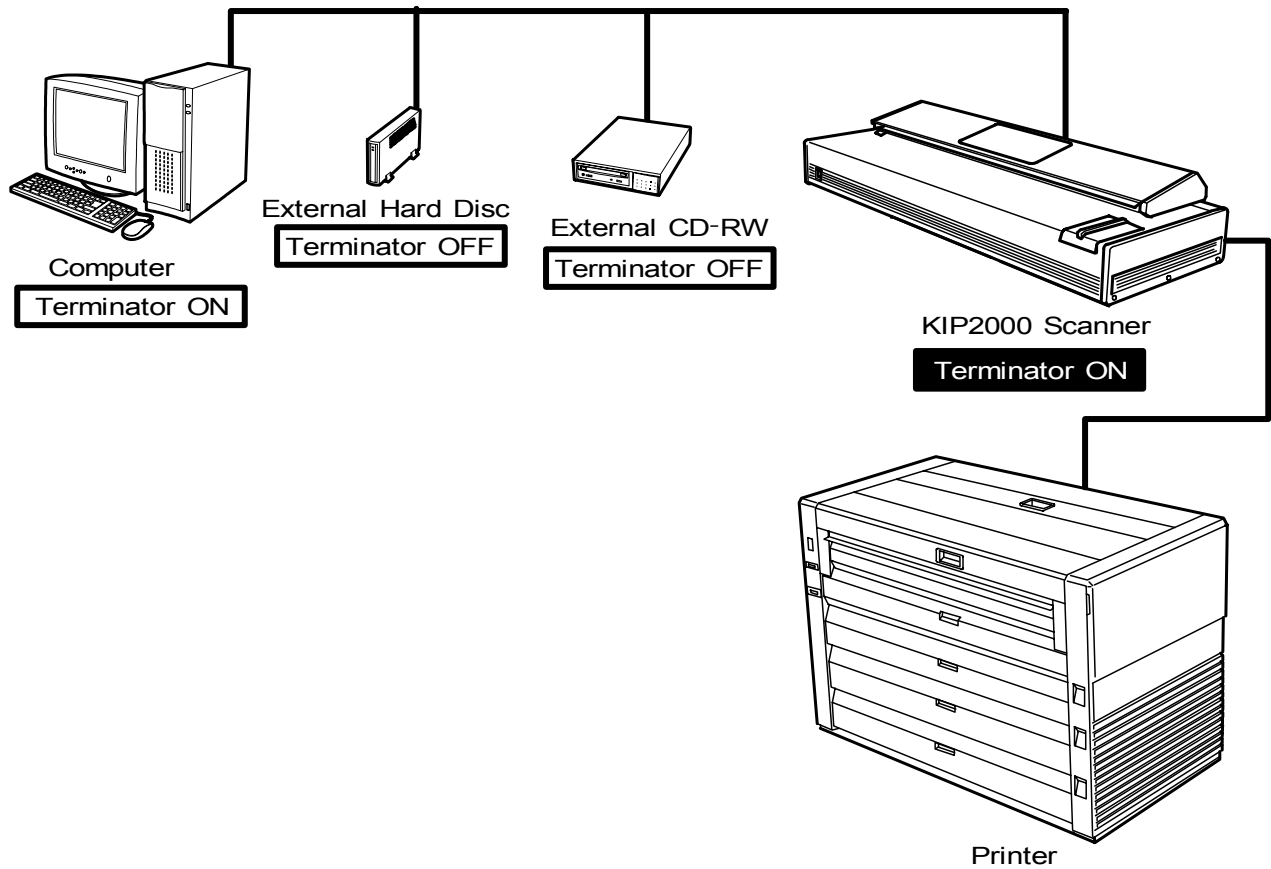


**3. Scanner is connected to printer and computer**  
**(Scanner is the terminal one of several SCSI devices connected to the computer)**

**Make sure to make scanner's Terminator "ON"** since the scanner is the terminal one of SCSI devices.

It is possible to take copying (scan to print) without problem even if the computer is turned off.

If the Terminator is OFF, the Operation Panel may have an abnormality.



**4. Scanner is connected to printer and computer**  
(Scanner is not the terminal one of several SCSI devices connected to the computer)

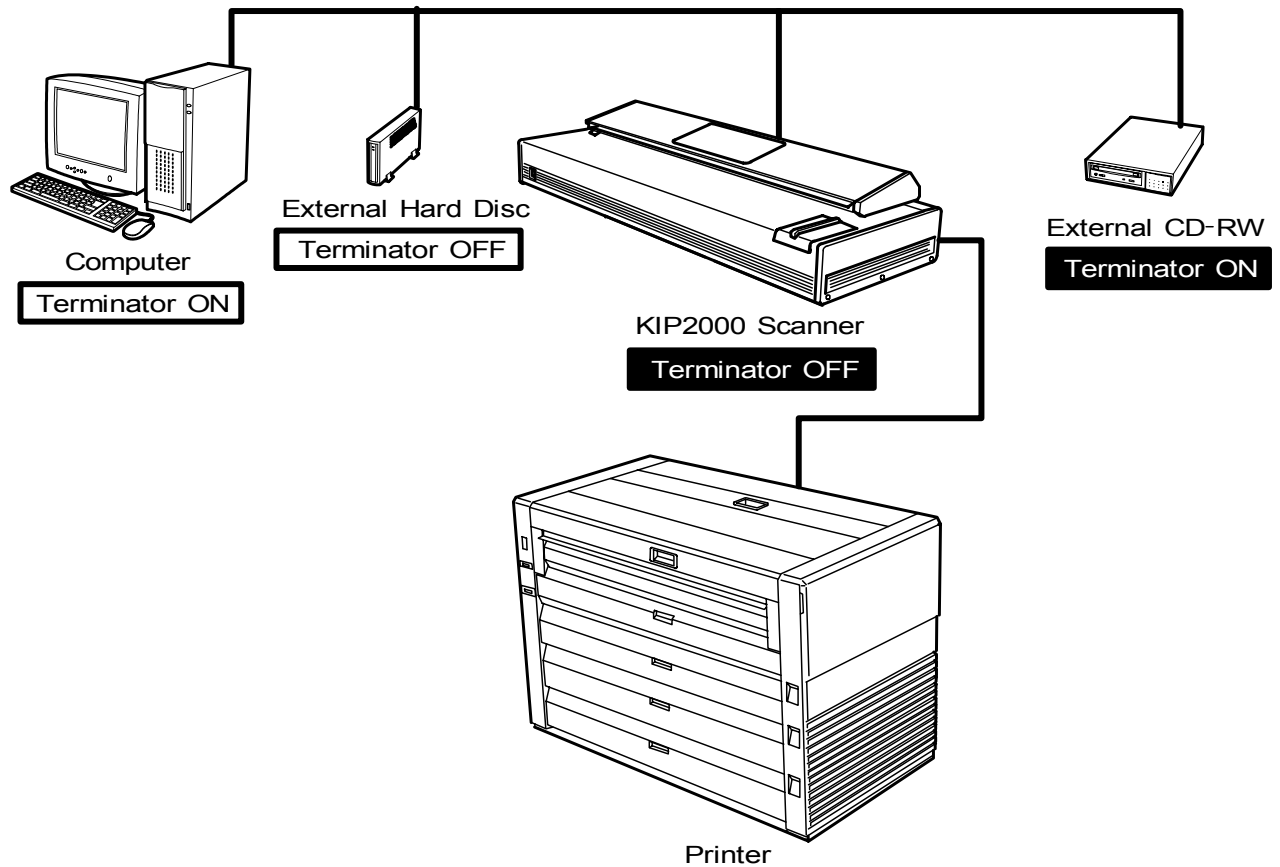
Make scanner's Terminator "OFF" since the scanner is not the terminal one of SCSI devices.

**And make sure to make the Terminator of the terminal SCSI device ON.**

(In case of the following example, make the Terminator of "External CD-RW" ON.)

**If you will take copying (scan to print), make sure to turn on all devices connected with the scanner. (Computer and all of the other SCSI devices)**

If you do not turn them on, the Operation Panel may have an abnormality.



## Chapter 3

## Electrical System

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**CAUTION**

There is a battery on the CPU PCB.

Danger of explosion if battery is incorrectly replaced.

Replace only with the same or equivalent type recommended by the manufacturer.

Dispose of used batteries according to the manufacturer's instructions.

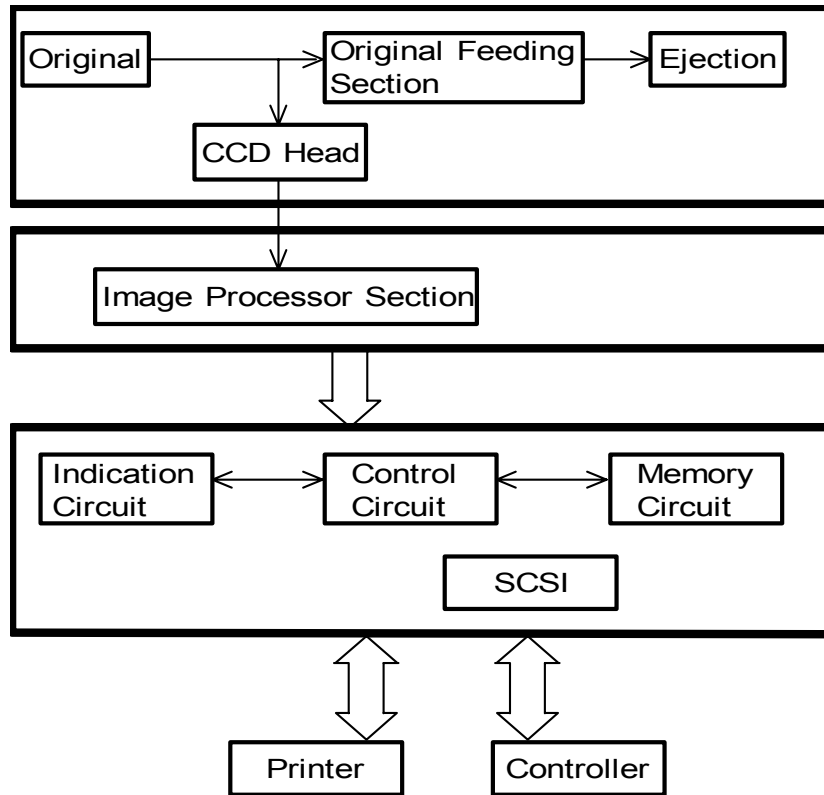
Waste disposal method of battery:

As for the waste disposal of battery, dispose in accordance with local state and federal relations.

## 3.1 Basic Function

### 3.1.1 Functional construction

Image Scanner K75 Series mainly consists of Image Processor Section, Control Section and Original Feeding Section.





### 3.1.2 Summary for electrical controls

The microcomputer (CPU) on the CPU PCB controls the scanner electrically.

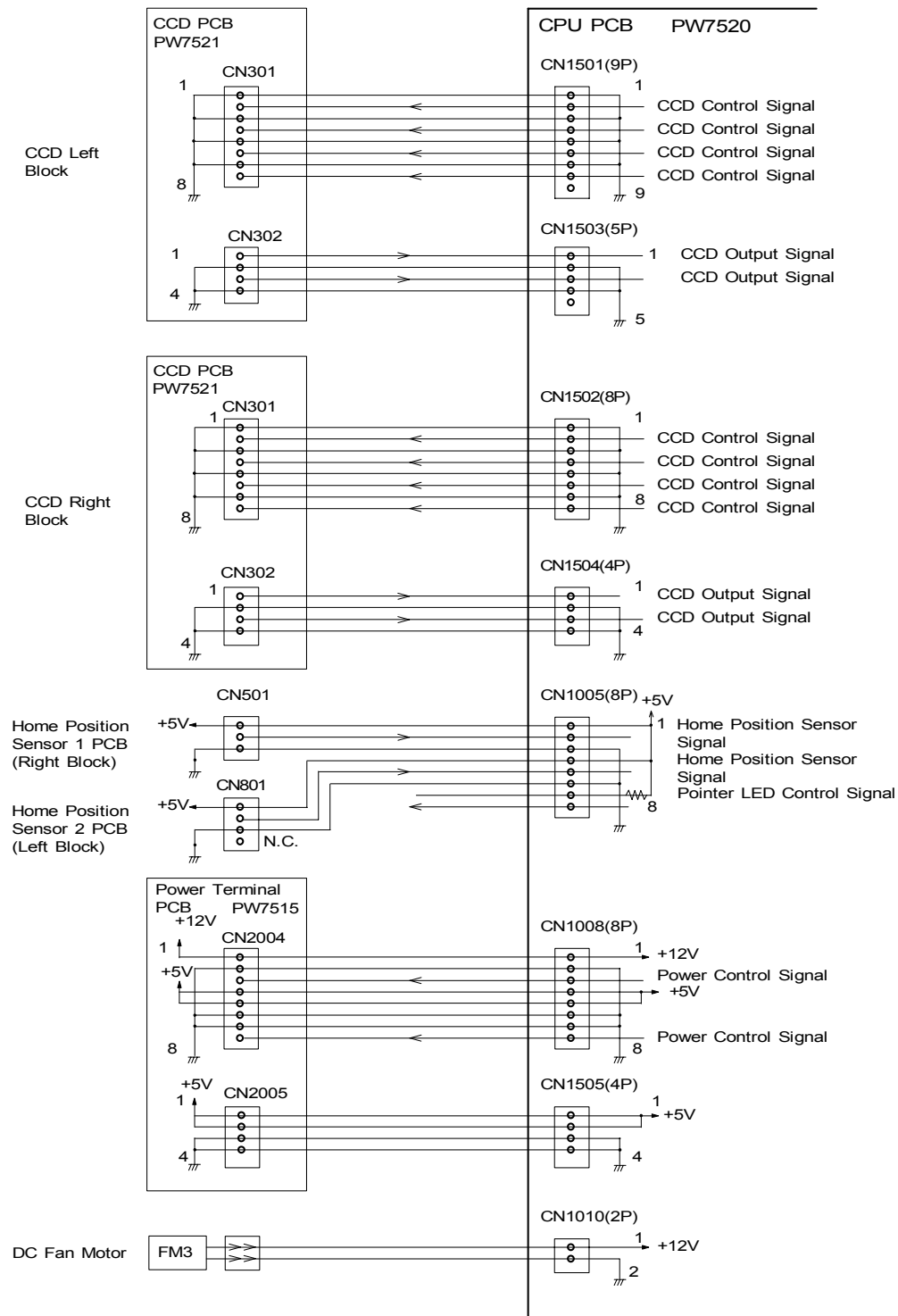
The CPU receives several signals sent from sensors or outer devices, and then it outputs timely several signals to each part such as motors and lamps to let them work at a proper timing

The CPU also outputs control signals to other printed circuit boards.

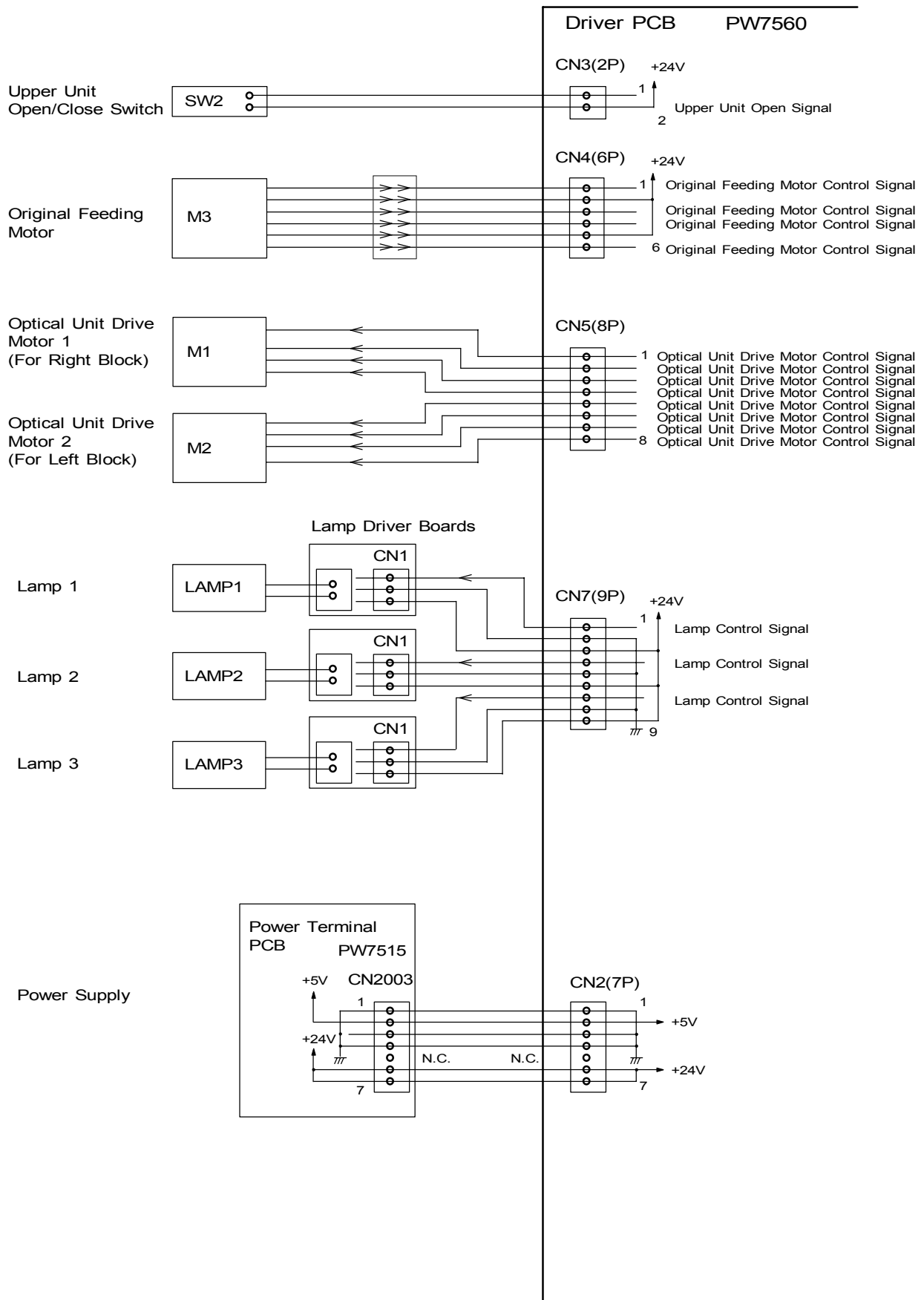
The timing to output the control signal is based on the clock pulse generated by both CPU and Crystal Vibrator.

(As for each electric parts, refer to the “8.1 General Circuit Diagram” in the chapter 8.)

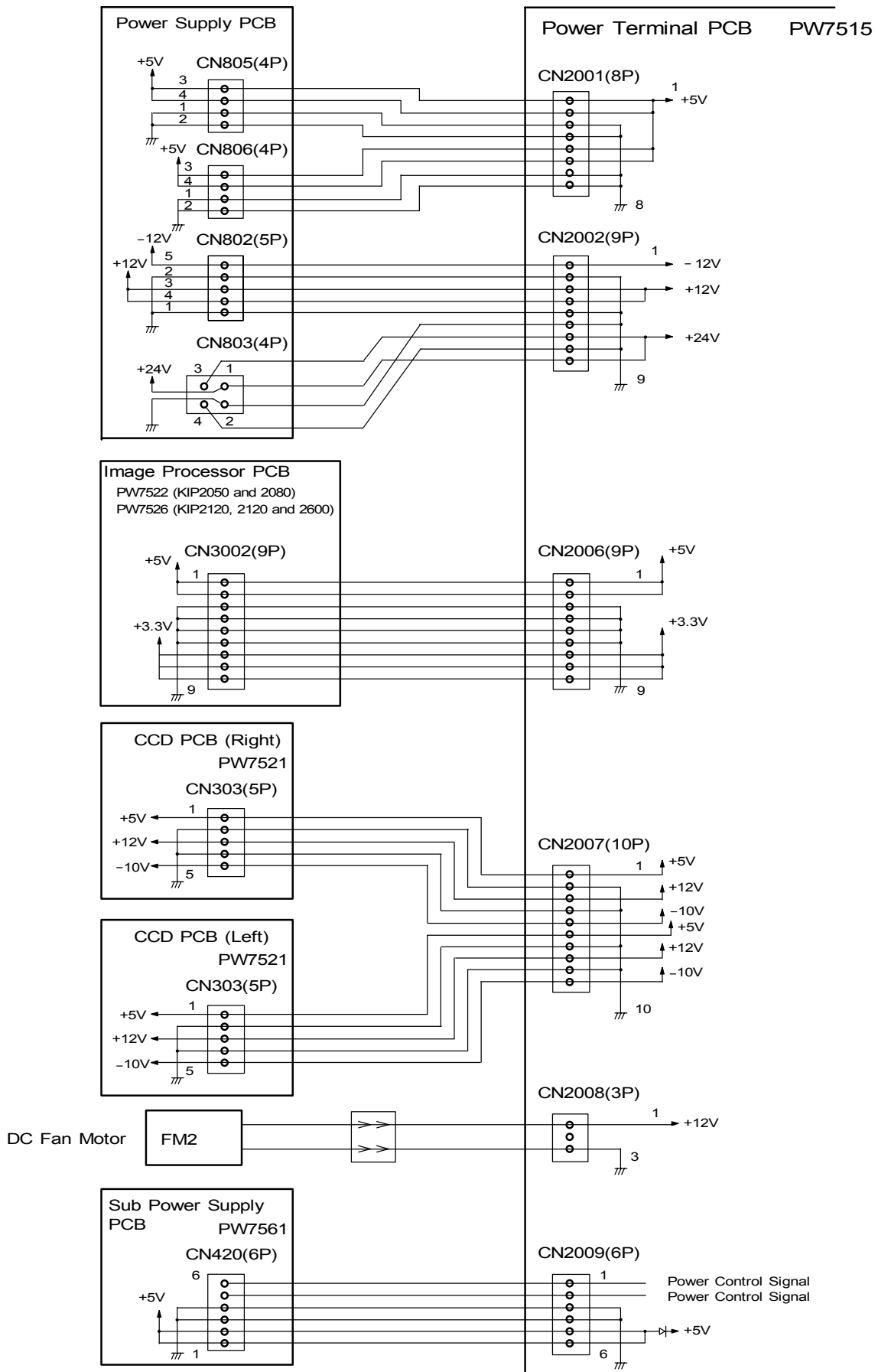
#### A. Input and output of CPU PCB



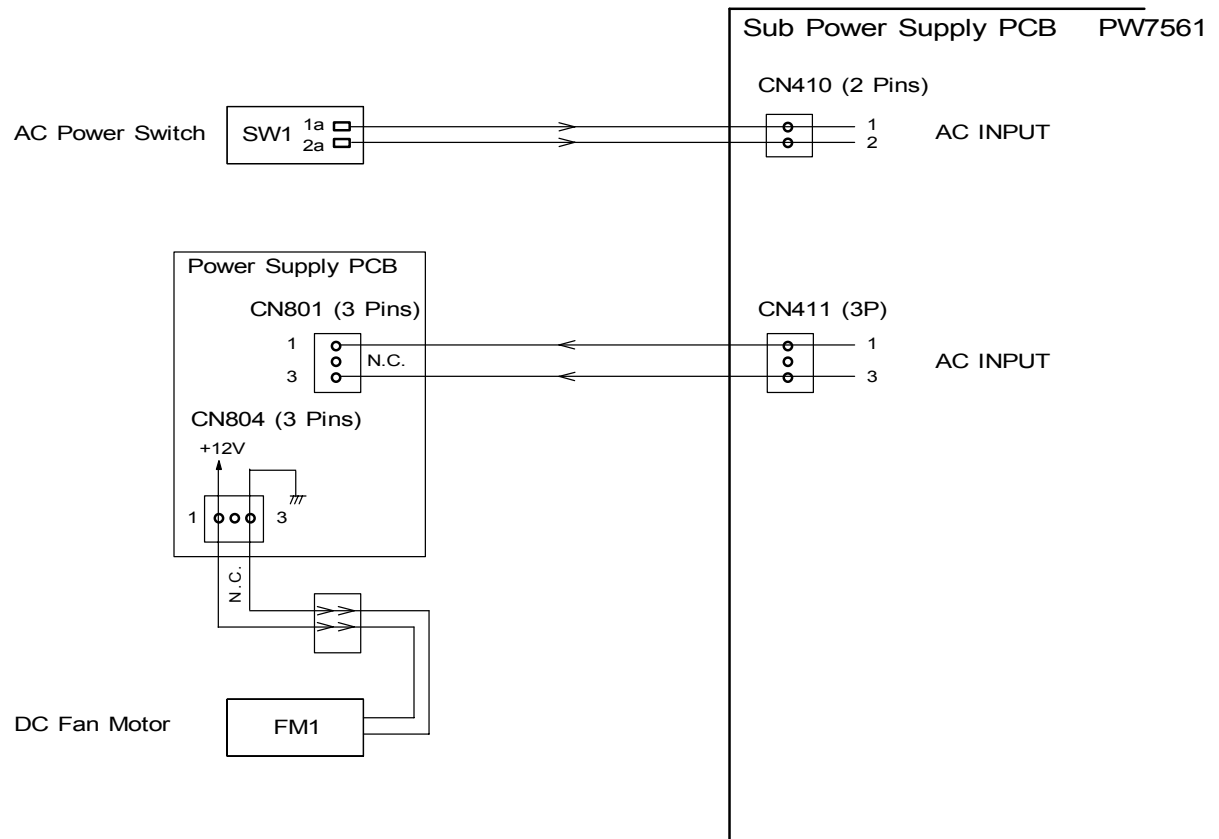
## B. Input and output of Driver PCB



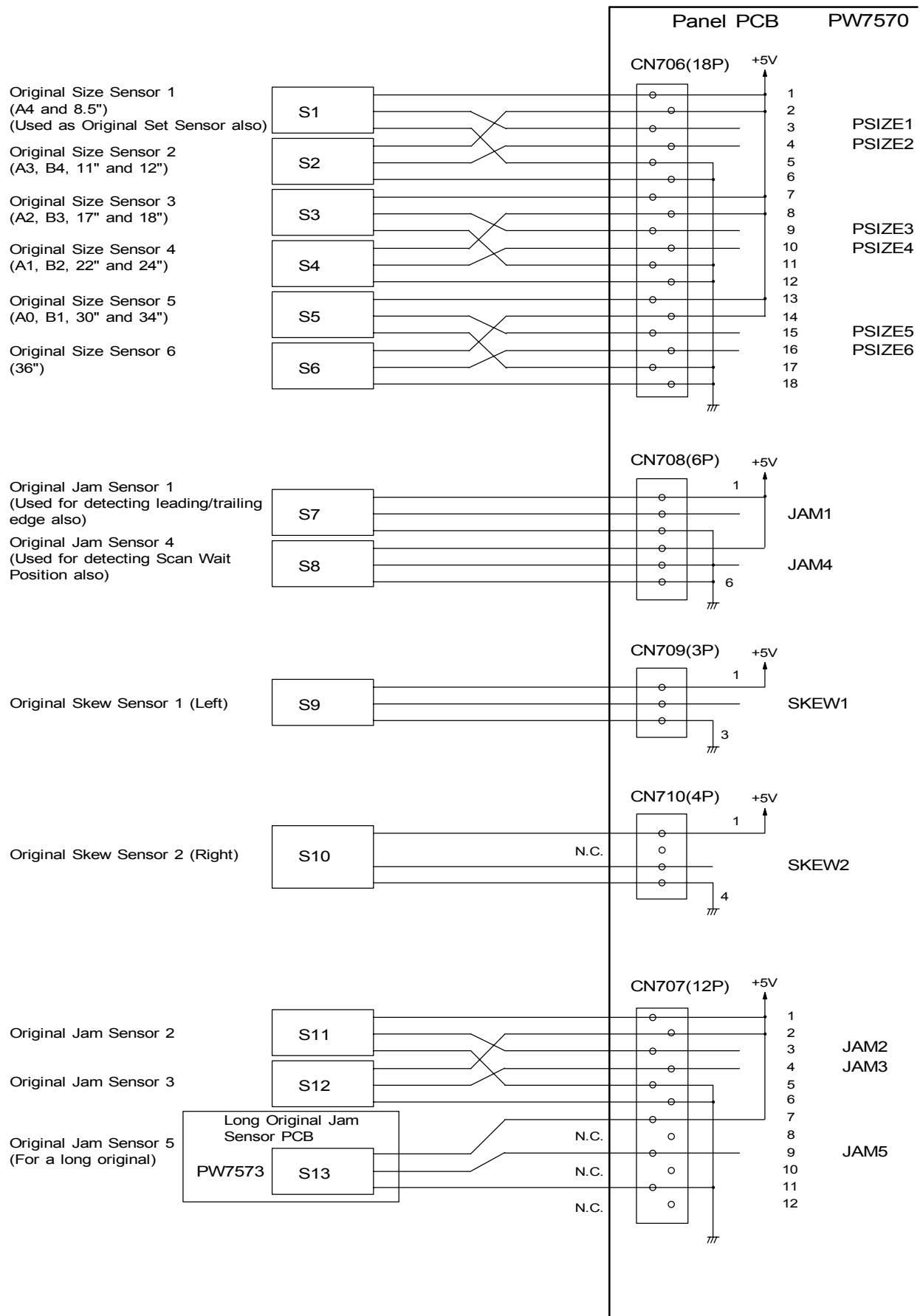
### C. Input and output of Power Terminal PCB

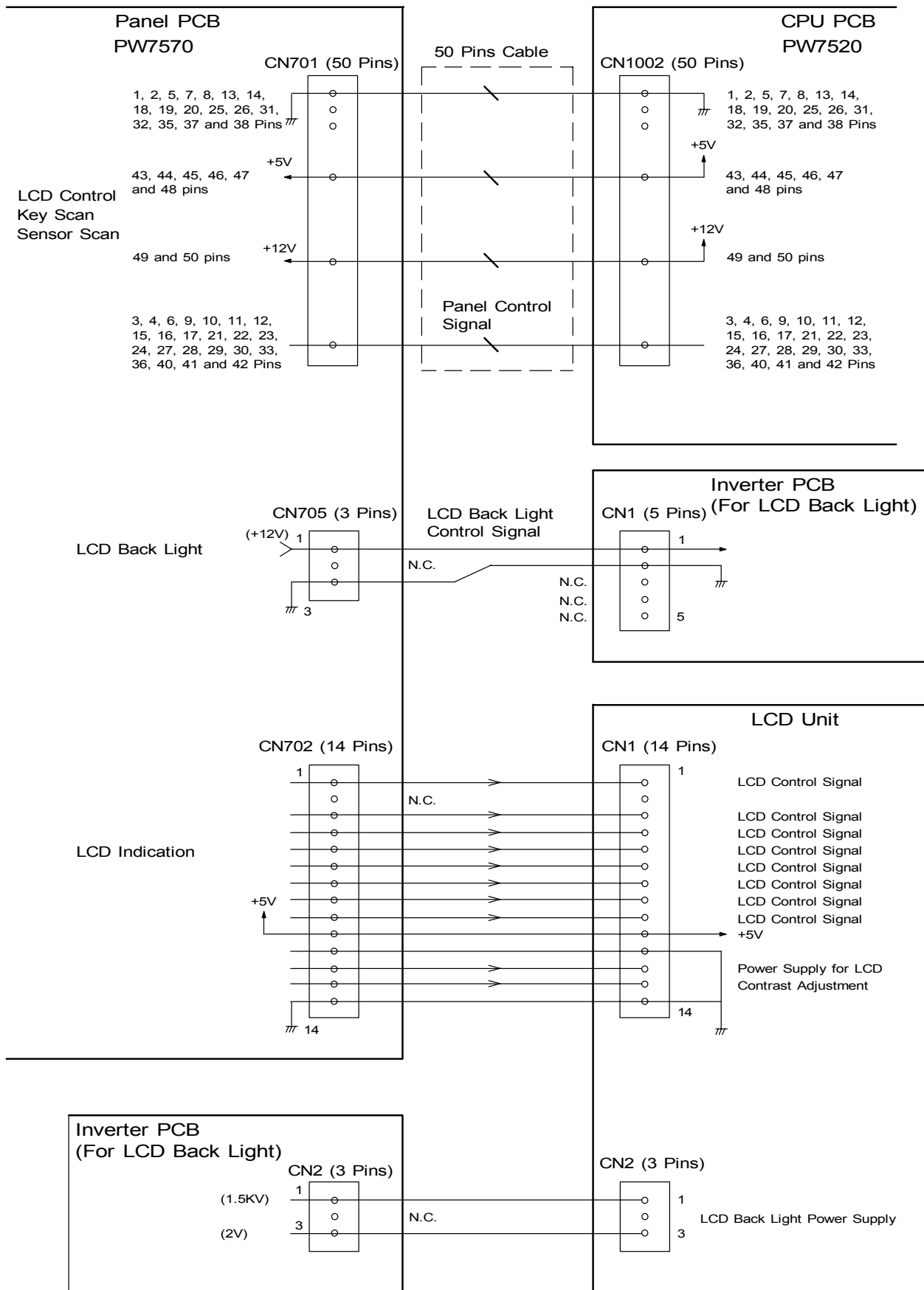


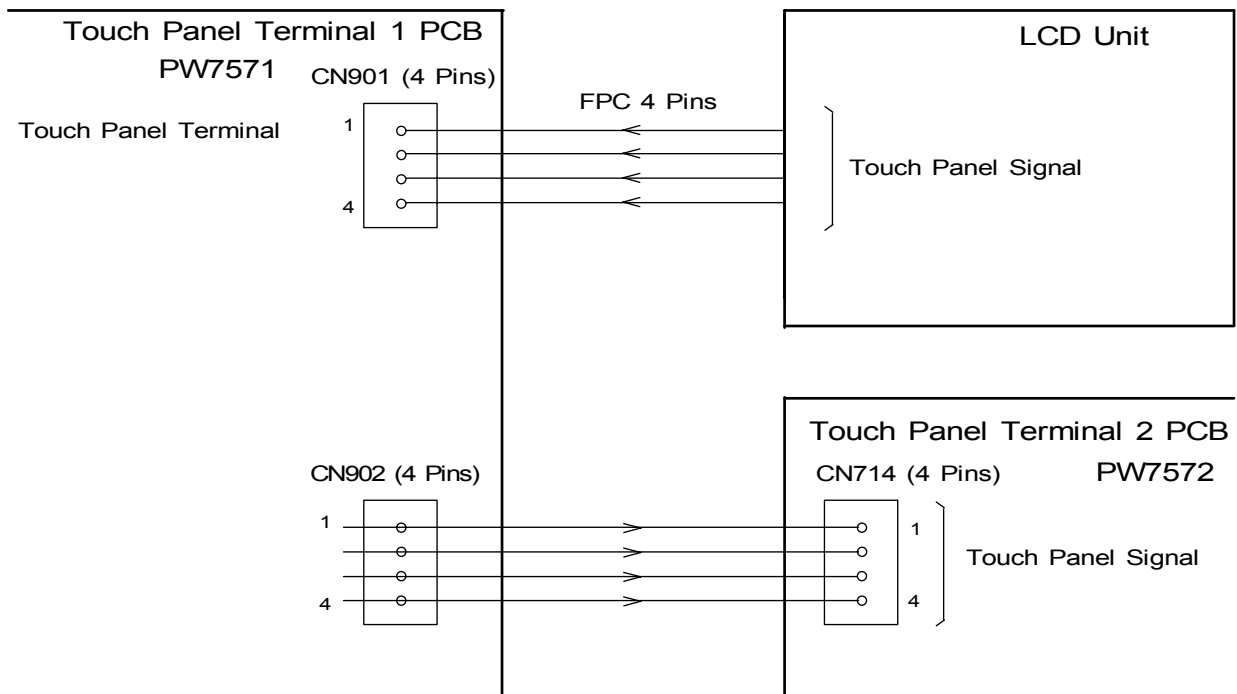
#### D. Input and output of Sub Power Supply PCB



## E. Input and output of Panel PCB







## 3.2 Image Processor Section

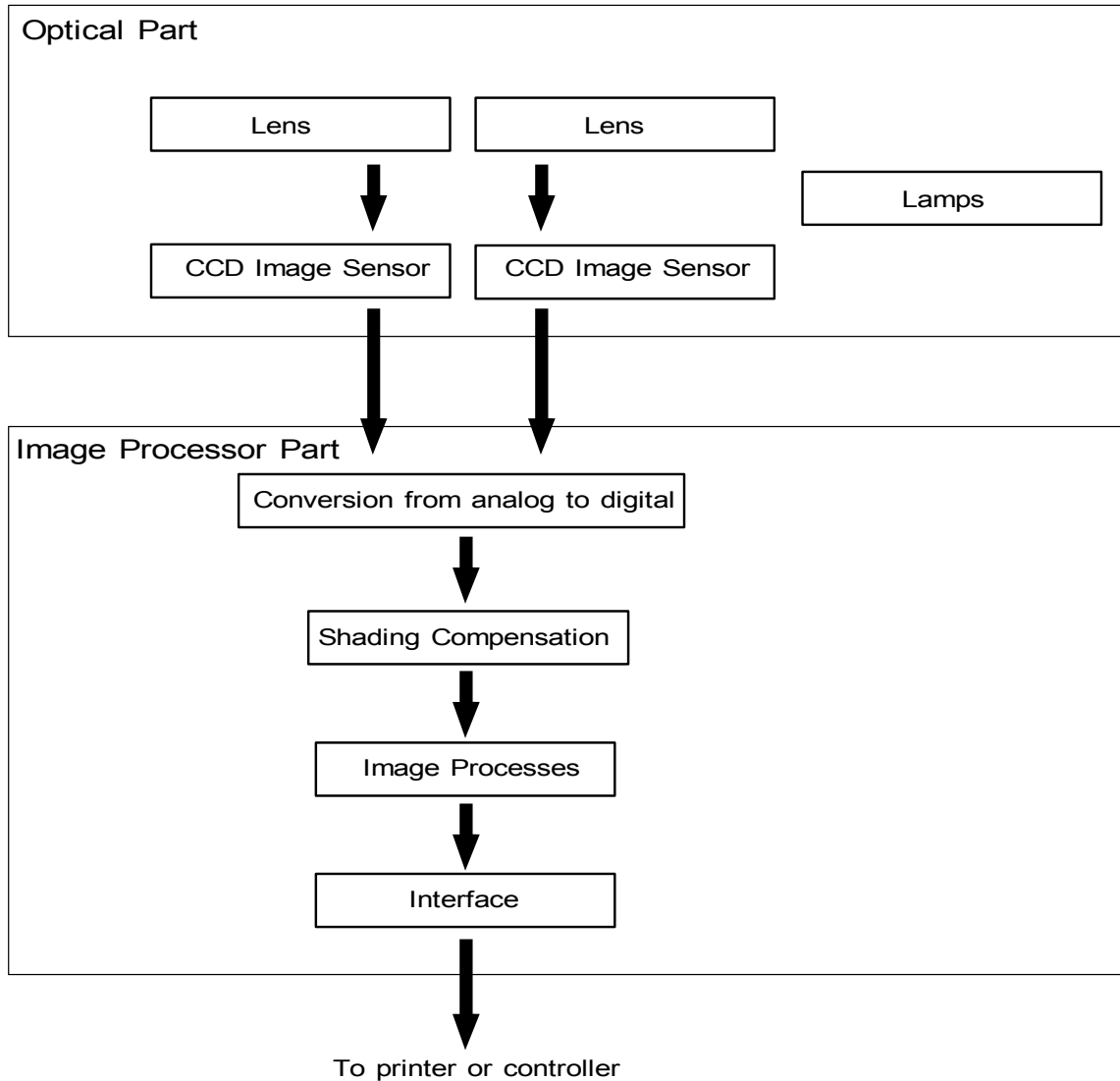
### 3.2.1 Summary

The Image Processor Section consists of Optical Part and Image Processor Part (Image Processor PCB).

The Optical Part is driven by the control signal sent from the Control Section in order to read original's image.

Then, the Image Processor Part processes the scanned image data by such processes as Conversion from Analog to Digital, horizontal zooming and so on.

The Image Processor Part outputs the image data to either printer or controller after these processes.



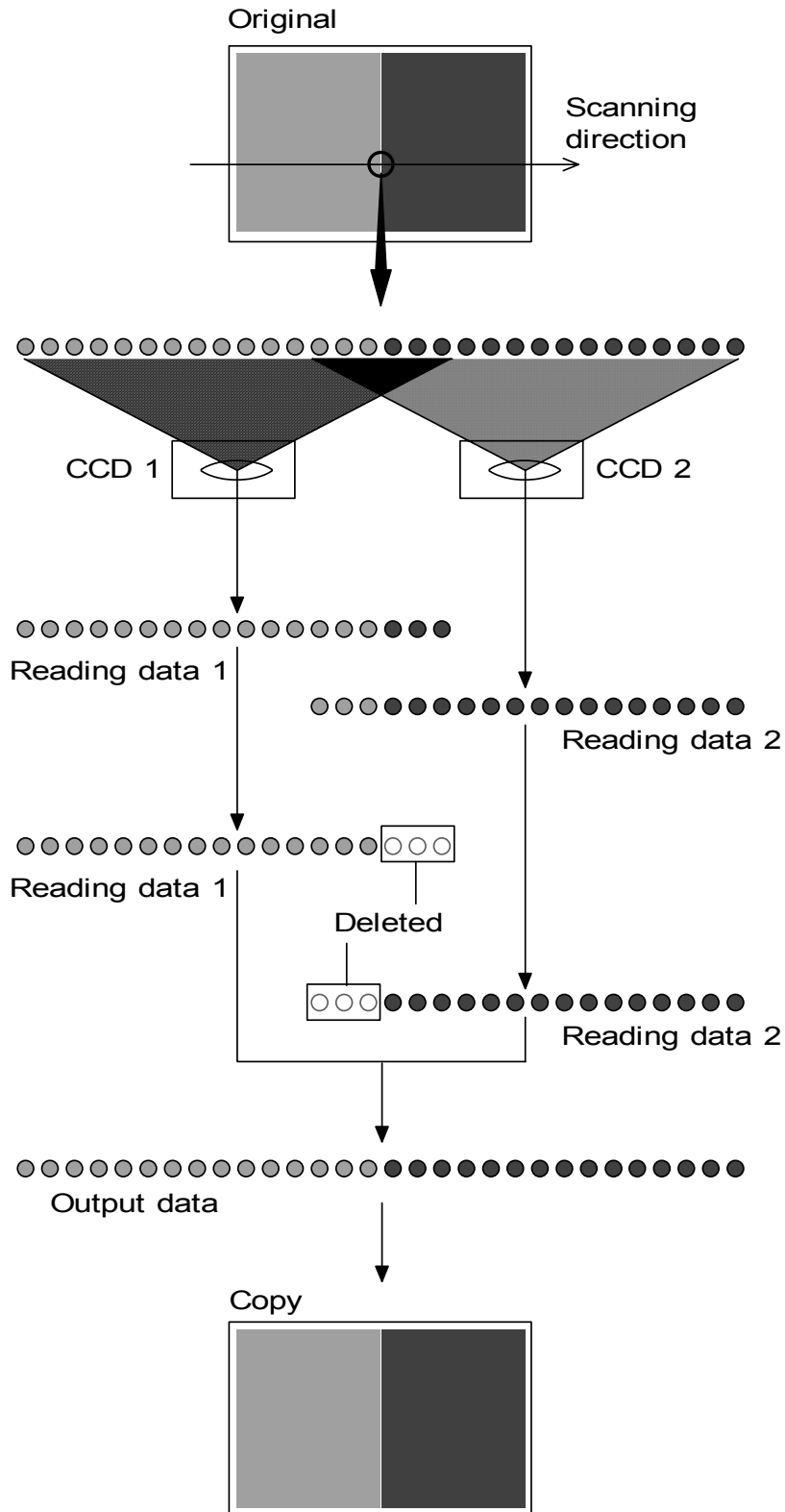


### 3.2.2 Reading Blocks

The Optical Unit consists of 2 pieces of CCD Image Sensor.

These CCD Image Sensors read different part of original each other while reading the same image a little at the boundary part.

Both reading data 1 and 2 are sent from CCD Image Sensors to the Image Processor Part separately. Then, the Image Processor Part creates the output data combining these reading data 1 and 2 with each other while deleting duplicating pixels.



### 3.2.3 Optical Part

The Optical Part consists of CCD Image Sensors, Lamps, Lenses, Driving Circuits and so on. When the specified signal is inputted, the Optical Part outputs a Light / Electric Conversion Signal by the analog pulse line.

Output signals are obtained from 4 outputs dividing 36 inches of width into 2 Data Blocks.  
(7200 pixels x 2 Data Blocks)

Items	Specifications	Remarks
Reading Sensor	CCD Reduction Optical Unit (2 units)	
Basic resolution	400dpi (Horizontal) 400dpi (Vertical)	At 100% zoom.
Maximum reading width	914.4mm (14,400 pixels)	
Lamp	Cold Cathode Ray Tubes (Wavelength is 544nm.)	18,000 lx (KIP2050, KIP2080) 40,000 lx (KIP2120 and KIP2160)

### 3.2.4 Image Processor Part (PW7522 for KIP2050 and KIP2080) (PW7526 for KIP2120, KIP2160)

#### A. Horizontal enlargement and reduction process

1. The horizontal zoom ratio is adjustable within the range from 25.0% to 400.0% in 0.1% increment by the zoom setting command.
2. For reduction, some pixels are thinned out keeping almost same intervals between deleted pixels, and some pixels are provided in the same way for enlargement.  
Positions that pixels are deleted or provided are same for every scanning line.

## **B. Real Time Threshold (Background Mode)**

Real Time Threshold is not constant as our normal Threshold Level but is variable.

It means the scanner selects the best Threshold Level at every point of original consecutively during scanning.

Since the Threshold Level is variable, it is possible to divide original's images into 2 groups as "necessary image" and "unnecessary background" although both of them have same degree of density.

Supposing you scan the following original which consists of "white background", "Gray 1", "Gray 2" and "Black".

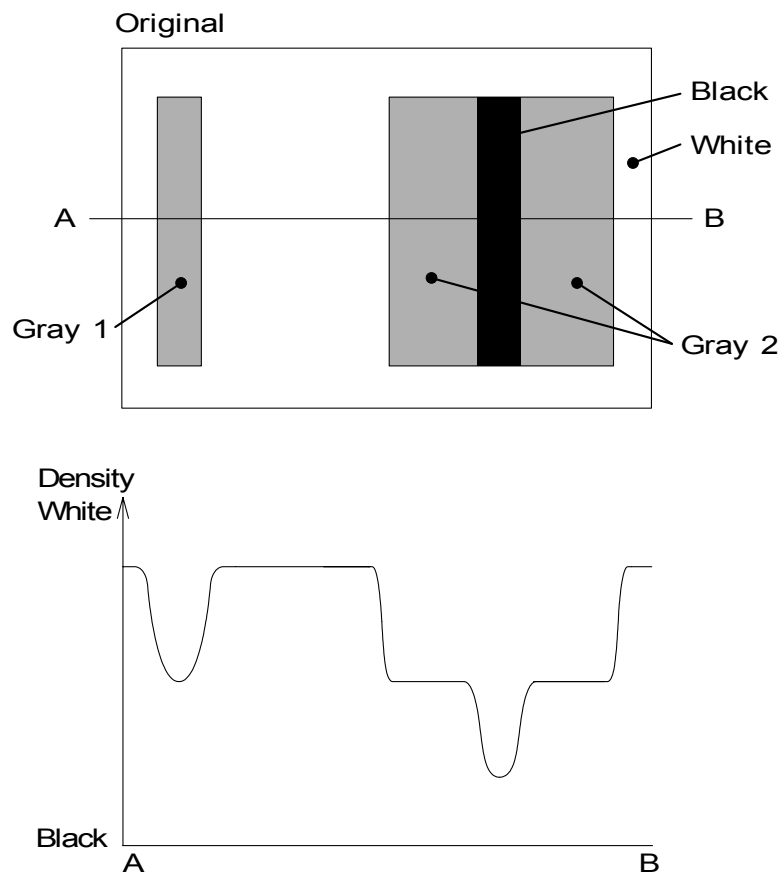
Gray 1 (Necessary gray image)

Gray 2 (Unnecessary gray background)

Black (Necessary black image)

The graphic chart under the original shows the density between 2 points A and B.

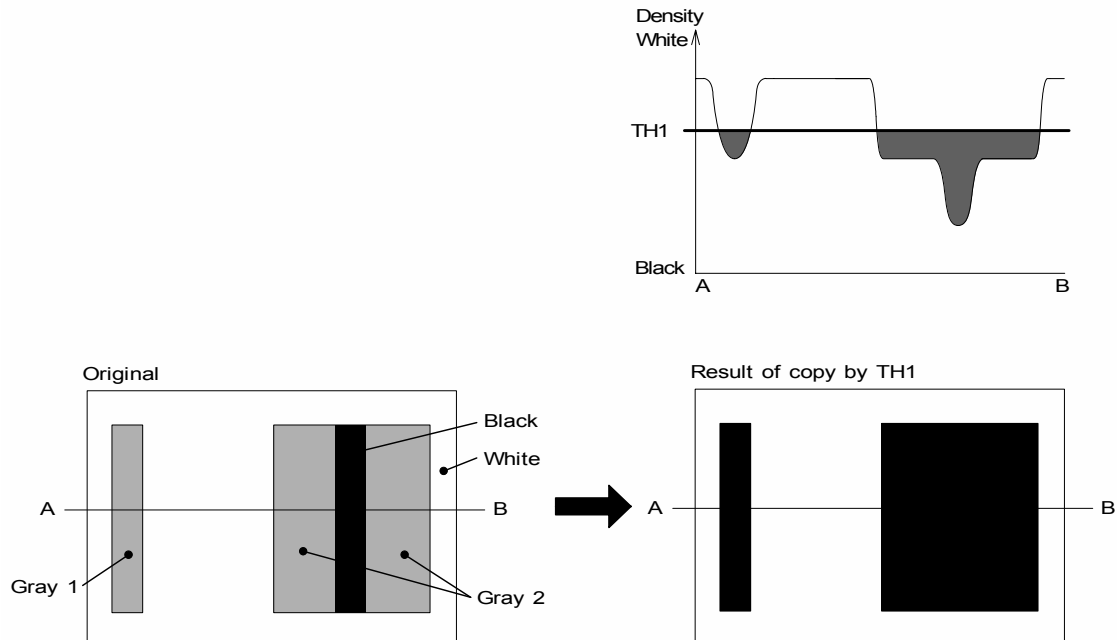
It is clear that both necessary "Gray 1" and unnecessary "Gray 2" have same degree of density.



1. If you select the **normal Threshold Level (TH1)** in order to copy necessary “Gray 1”, the result of copy will be as follows.

All of “Black”, “Gray 1” and “Gray 2” are judged “necessary image” and are copied.

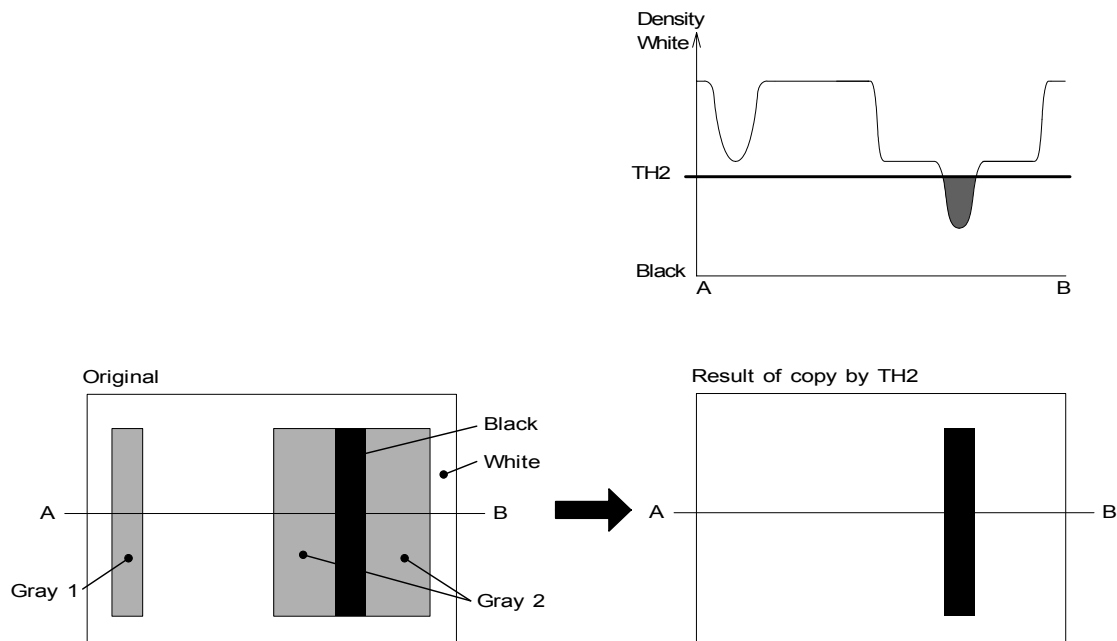
It is impossible to find “Black” because unnecessary “Gray 2” surrounding “Black” are copied.



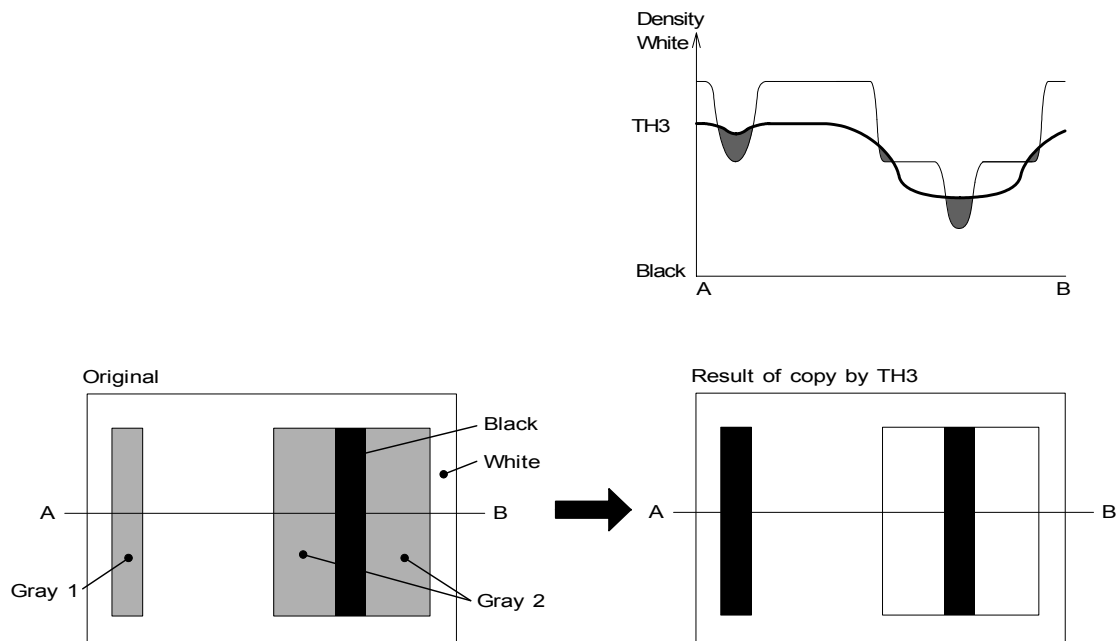
2. If you select **another normal Threshold Level (TH2)** in order to delete unnecessary “Gray 2”, the result of copy will be as follows.

It becomes possible to find “Black” because “Gray 2” are judged “unnecessary image” and are not copied.

However, necessary “Gray 1” is not copied because it is also judged “unnecessary image”.



3. If you use the **Real Time Threshold** by selecting the Background Mode in the Image Quality Setting Screen, the result of copy will be as follows.  
 The Threshold Level (TH3) is variable and the best level is selected point to point according to the density distribution of original.  
 Although both "Gray 1" and "Gray 2" have same degree of density, only "Gray 2" are judged "unnecessary image (background)" and are deleted from the copy.



## 3.3 Original Feeding Section

### 3.3.1 Summary

Since the CCD Image Sensor is stable, the original has to be transported when it is scanned.  
Each sensor recognizes the condition of original in order to control the original feeding.

A Stepping Motor is used to transport the original.

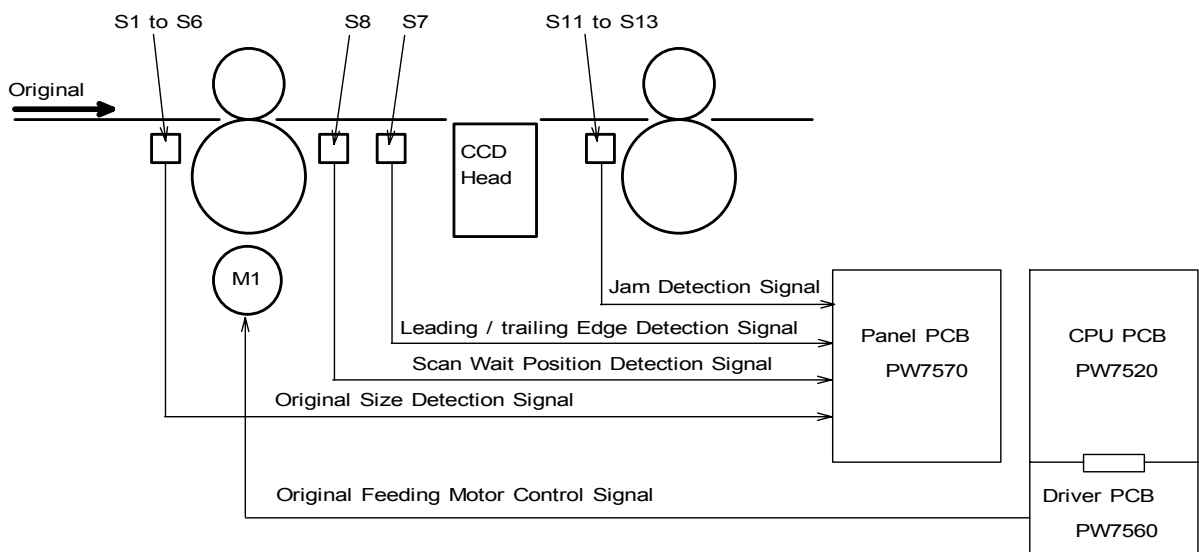
It rotates in different speed depending on the selected zoom ratio in order to reduce or enlarge the image vertically.

### 3.3.2 Basic action of original feeding

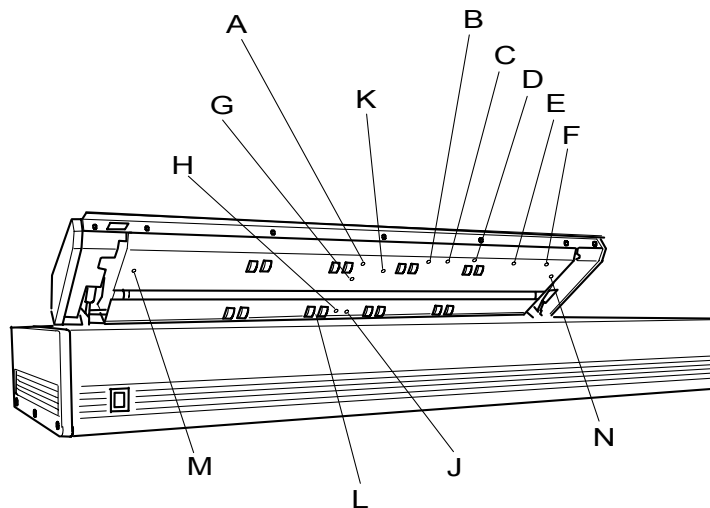
1. When the original is inserted under the Upper Unit, the Original Size Sensor 1 detects the insertion of original.  
Original Size Sensors from 2 to 6 (S2 to S6) detect original's size at the same time.
2. The scanner transports the original.  
When the Original Jam Sensor 4 (S8) detects the original, the scanner stops transporting in order to stay the original there (Scan Wait Position).
3. When you push the Start Key, the scanner starts transporting the original.  
When the specified time has passed since original's leading edge had passed over the Original Jam Sensor 1 (S7), the CCD Image Sensor starts reading the image.
4. When the specified time has passed since original's trailing edge had passed over the Original Jam Sensor 1 (S7), the CCD Image Sensor stops reading.

If the original does not pass over each Original Jam Sensor 1 (S7), Original Jam Sensor 4 (S8), Original Jam Sensor 2 (S11), Original Jam Sensor 3 (S12) and Long Original Jam Sensor (S13) within the time specified for each sensor, the scanner indicates Jam Error.

If either Original Skew Sensor 1 (S9 : Left) or Original Skew Sensor 2 (S10 : Right) detects the original, the scanner indicates Skew Error.



### 3.3.3 Name and position of each sensor



	Symbol	Name of sensor	Signal
A	S1	Original Size Sensor 1 (Detecting A4 and 8.5", and detecting insertion of original)	PSIZE1
B	S2	Original Size Sensor 2 (Detecting A3, B4, 11" and 12")	PSIZE2
C	S3	Original Size Sensor 3 (Detecting A2, B3, 17" and 18")	PSIZE3
D	S4	Original Size Sensor 4 (Detecting A1, B2, 22" and 24")	PSIZE4
E	S5	Original Size Sensor 5 (Detecting A0, B1, 30" and 34")	PSIZE5
F	S6	Original Size Sensor 6 (Detecting 36")	PSIZE6
G	S7	Original Jam Sensor 1 (Detecting Leading/trailing edge of original also)	JAM1
H	S11	Original Jam Sensor 2	JAM2
J	S12	Original Jam Sensor 3	JAM3
K	S8	Original Jam Sensor 4 (Staying the original at the Scan Wait Position also)	JAM4
L	S13	Long Original Jam Sensor (It can not be seen from the outside.)	JAM5
M	S9	Original Skew Sensor 1 (Left)	SKEW1
N	S10	Original Skew Sensor 2 (Right)	SKEW2

## **3.4 Motor Control Circuit**

### **3.4.1 Summary**

A stepping motor is used to transport the original, which is suitable for positioning control. The CPU controls the following functions of the stepping motor.

- 1 Rotation of motor by the result of the zoom adjustment  
(From 25.0% to 400.0% in 0.1% increment)
- 2 ON / OFF control for the motor

### **3.4.2 Basic action**

Switching of excitation is done by micro-step.

In order to utilize motor's rotation fully from low to high speed, the number of the input pulse is gradually increased when the motor is accelerated, and is gradually decreased when the motor is decelerated. By this, the motor can be rotated smoothly.



## 3.5 Power Supply

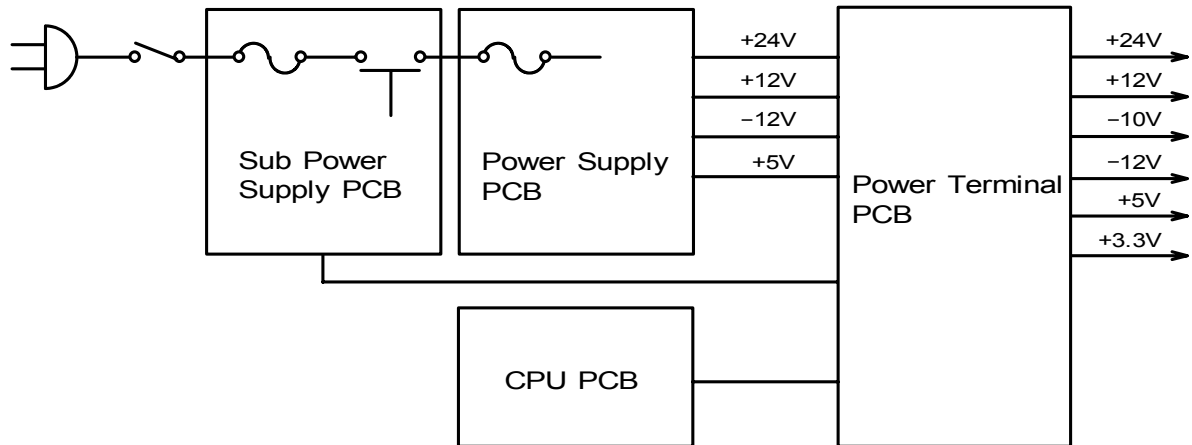
If you turn on the scanner, the AC power is supplied to the Power Supply Circuit through the Sub Power Supply PCB (Relay Circuit).

The Power Supply Circuit consists of Switching Power Supplies.

It outputs each +24V, +12V, -12V and +5V to the Power Terminal PCB.

The Power Terminal PCB converts -12V to -10V and +5V to +3.3V independently.

Converted -10V and +3.3V are supplied to Image Processor PCB, CPU PCB, CCD PCB and other boards.



### Scanner Power Save

If no operation has been done for the decided time, the Scanner Power Save works automatically not to consume so much power.

(Scanner only enter the power save condition.)

**190W in maximum** (Normal power consumption)

↓ (Decided time has passed without operation)

**12W or lower** (In the Scanner Power Save)

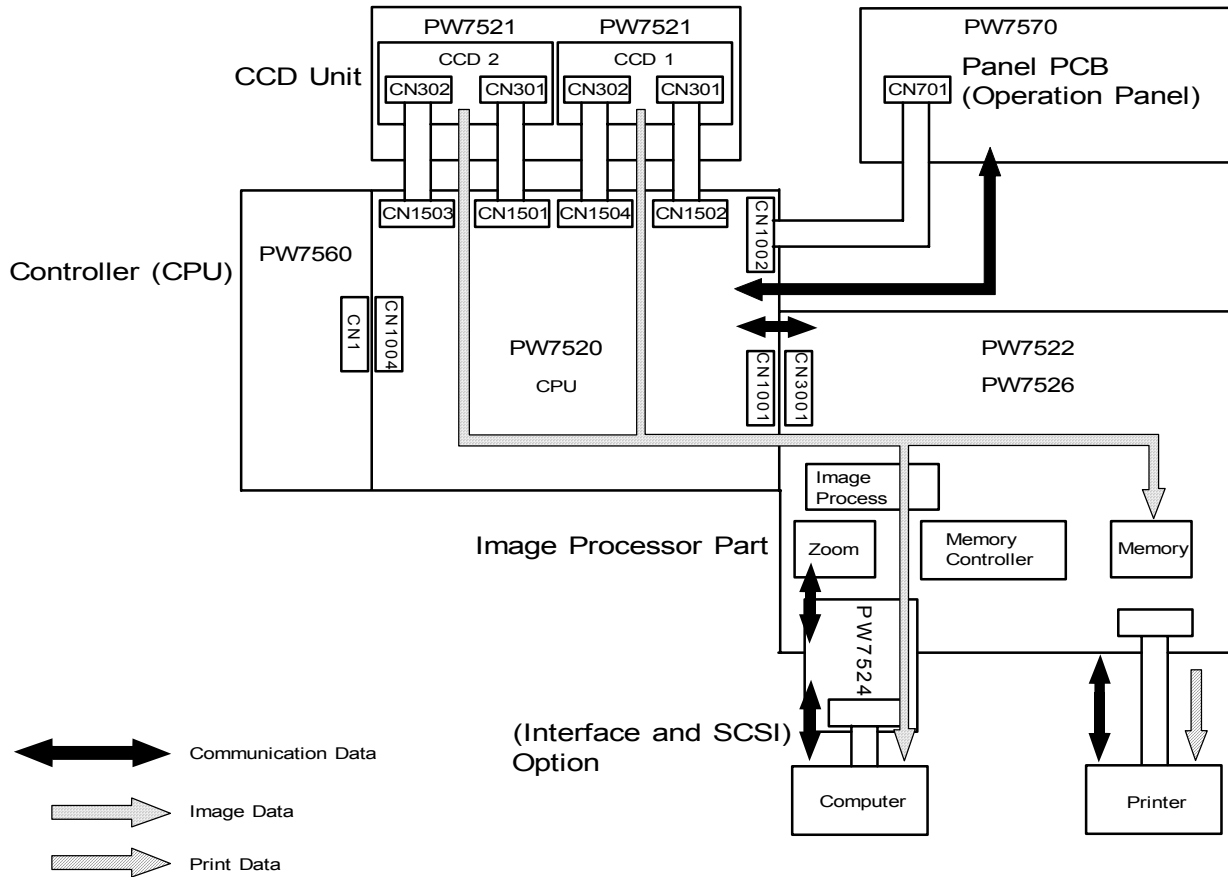
It is possible to set the timer for Scanner Power Save in the Back Up Data No.14.

The range of timer is from 1 to 60 minutes.

It is also possible not to let the Scanner Power Save work (OFF), and it can be decided in the Back Up Data No.13.

Refer to “No.13 Scanner Power Save ON / OFF” and “No.14 Timer for Scanner Power Save” on the page 7-25 as for the detail.

## 3.6 Data Flow

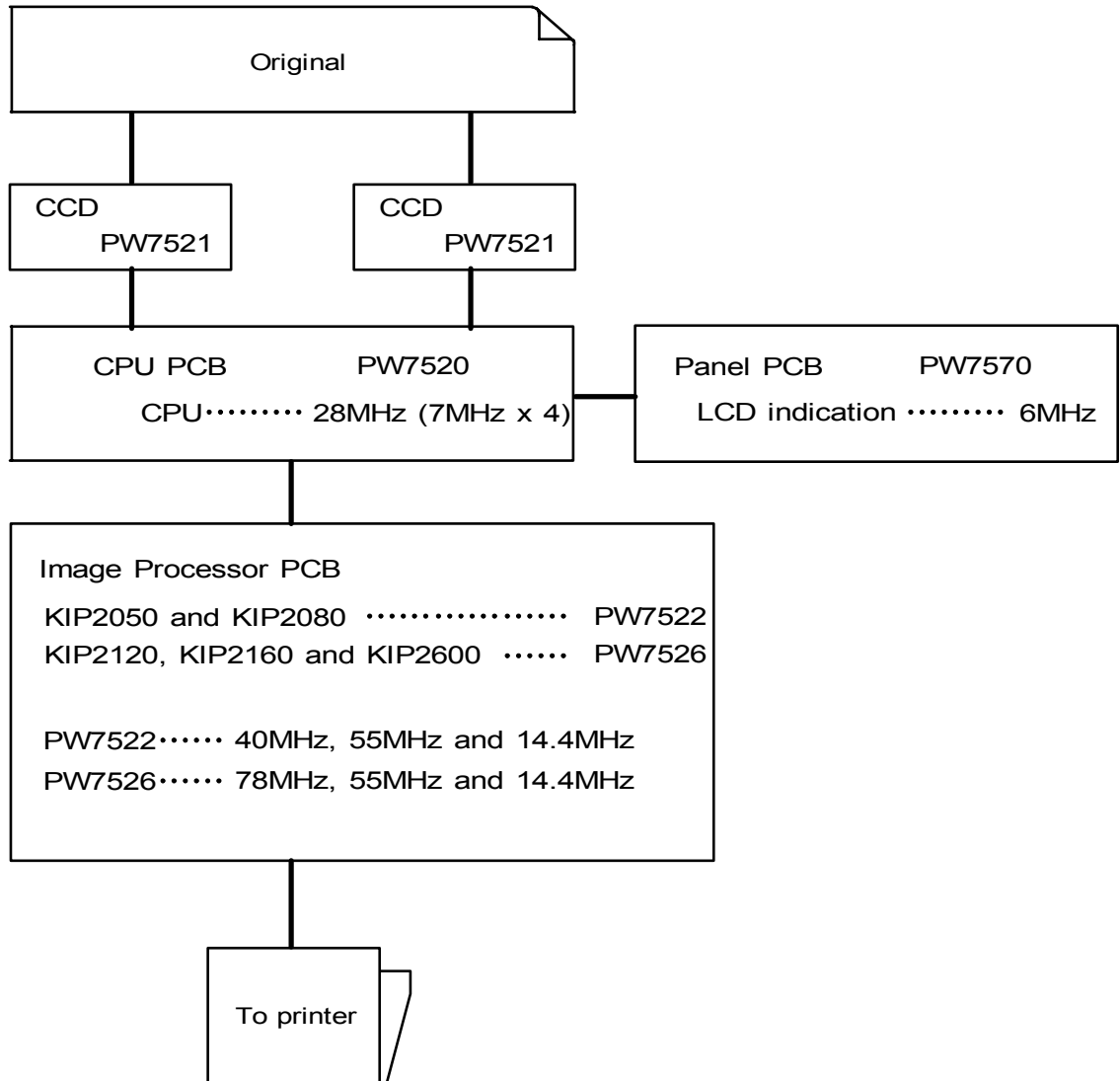


### Flow of image data

The CCD Unit consists of Block 1 and Block 2.

Image data (analog data) read by these blocks are inputted to the Controller (CPU), converted to the digital data, processed by the Image Process Part, and then outputted to computer Printer through the Memory Controller.

### 3.7 Frequency Chart

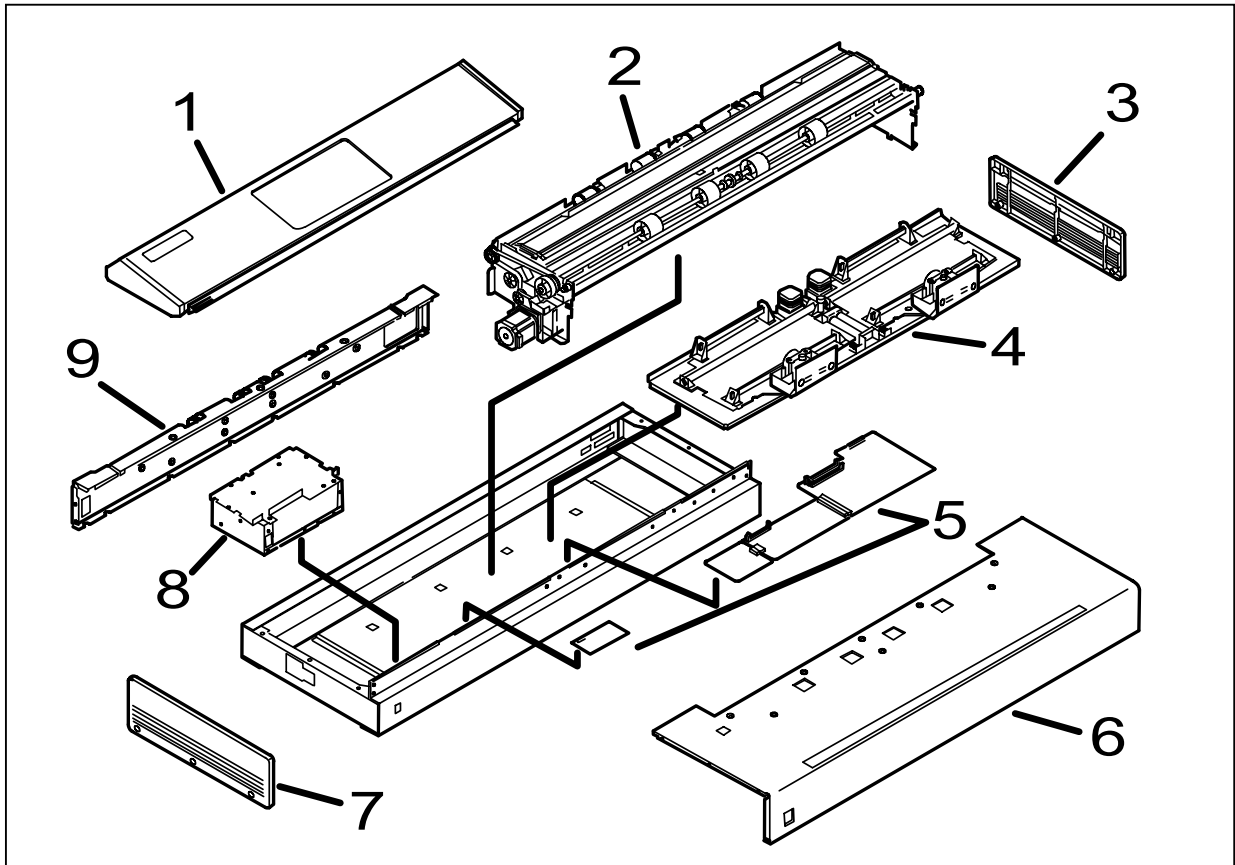


# Chapter 4

## Mechanical System

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## 4.1 Arrangement of Main Parts



1. Upper Unit
2. Feeder Assembly
3. Side Cover
4. Optical Unit
5. Printed Circuit Boards
6. Original Table
7. Side Cover
8. Power Supply Unit
9. Rear Cover

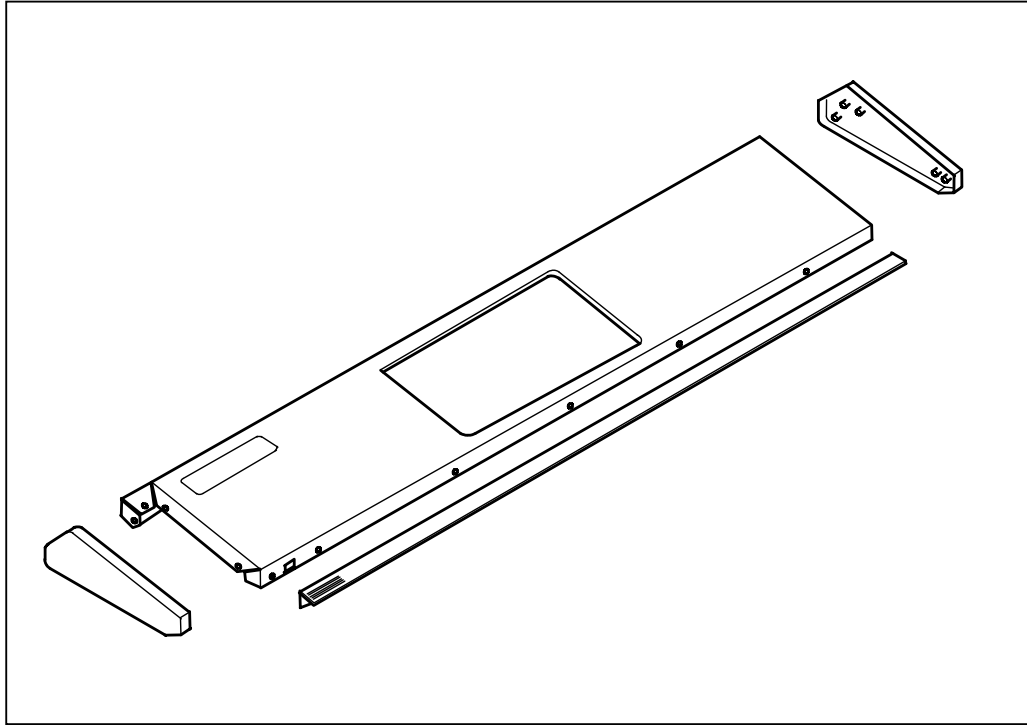
## 4.2 Outer Covers

### 4.2.1 Removing the Top Cover



#### **WARNING**

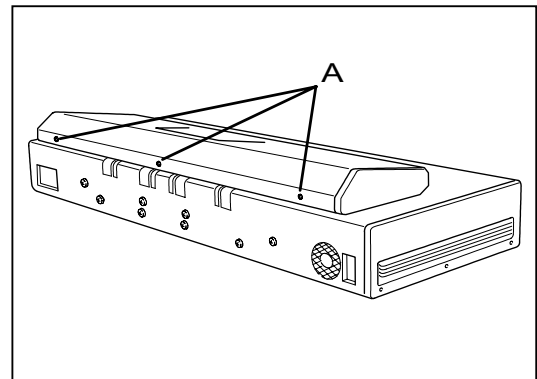
Make sure to disconnect the machine from the power source before disassembly. Otherwise, you may get an electric shock.



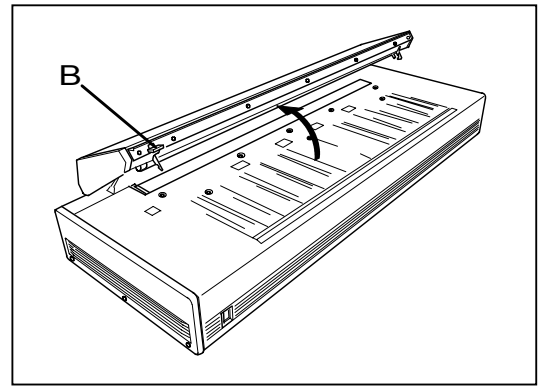
It is required to take off the Top Cover in order to remove the following parts in the Upper Unit.

1. Operation Panel Unit
2. Panel PCB
3. Touch Panel Terminal 2 PCB
4. LCD Inverter PCB
5. LCD Module
6. Touch Panel Terminal 1 PCB
7. White Roller
8. Sensors
9. Rollers

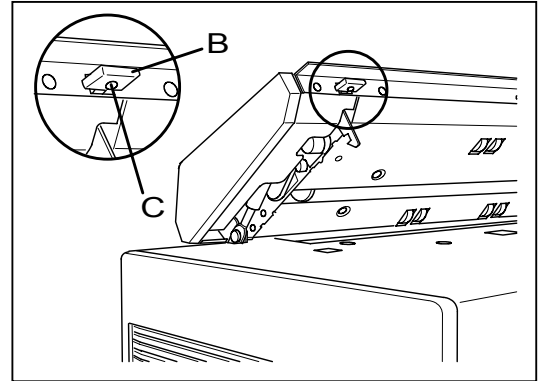
- 1) Remove 3 screws (A) at the rear side of the Upper Unit.



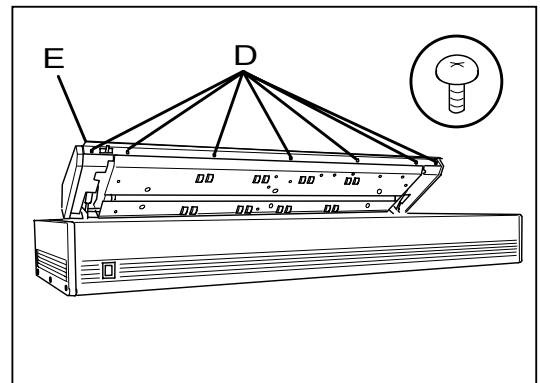
2) Pull up the Lever (B) to open the Upper Unit.



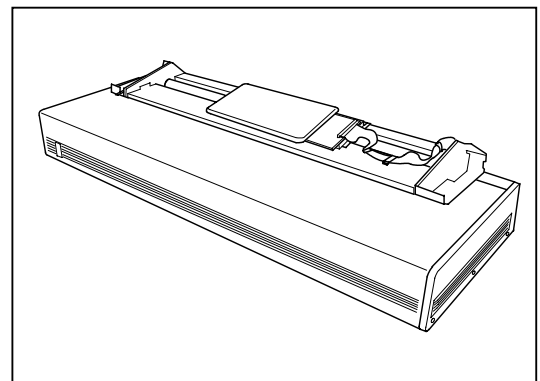
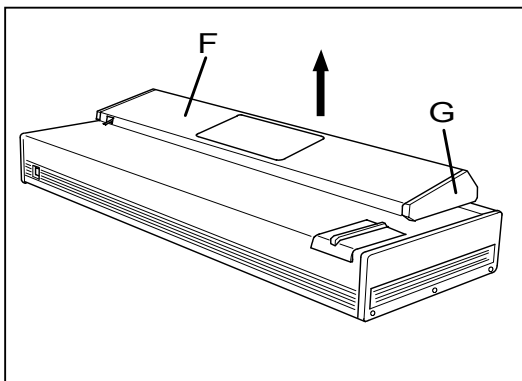
3) Remove the screw (C) to remove the Lever (B).



4) Remove 7 screws (D) to remove the Handle (E).



5) Bring up the Top Cover (F).  
You can take it off together with Top Side Covers (G).

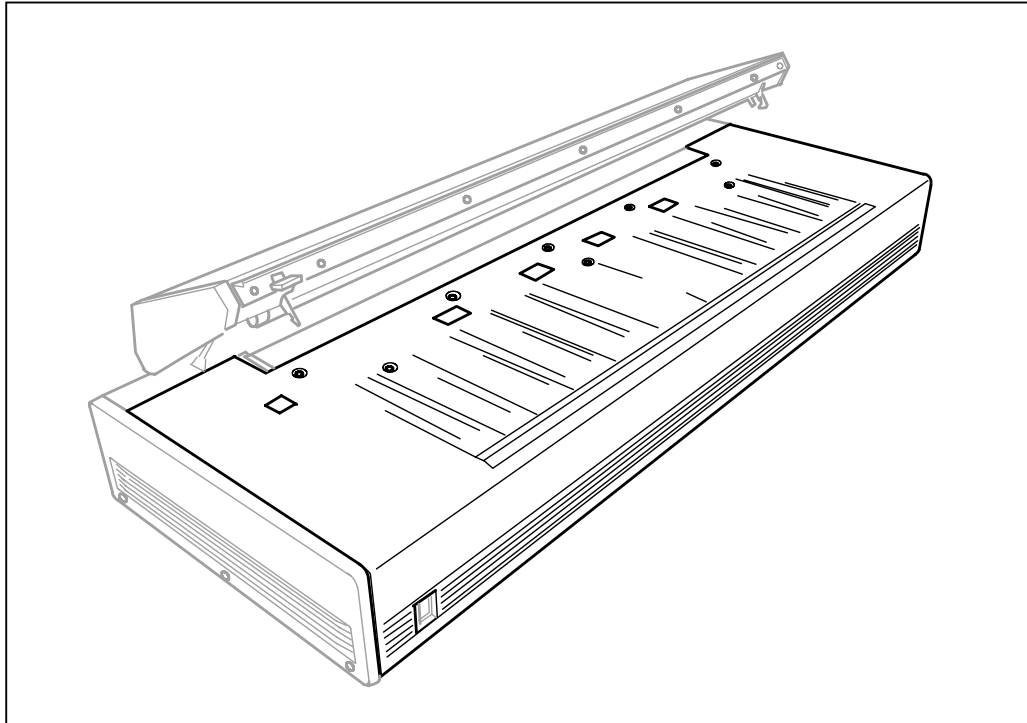


## 4.2.2 Removing the Original Table



### WARNING

Make sure to disconnect the machine from the power source before disassembly. Otherwise, you may get an electric shock.

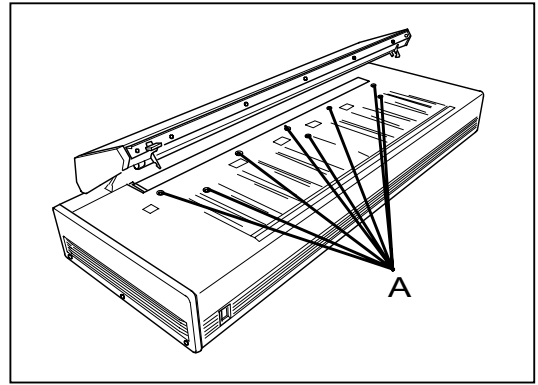


It is required to take off the Original Table in order to remove the following parts in the Base Unit.

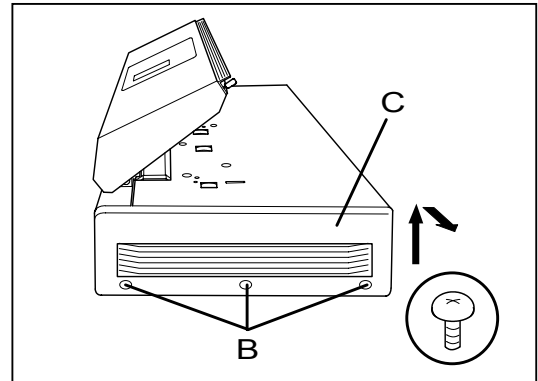
1. DC Fan Motor (FM3 : For cooling the Image Processor PCB)
2. Micro Switch (Upper Unit Open/Close Sensor)
3. Each Printed Circuit Board in the Base Unit
4. Power Supply PCB
5. Sub Power Supply PCB
6. DC Fan Motor (For cooling the Power Supply PCB)
7. Inlet
8. Power Switch
9. DC Fan Motor (For exhaust)
10. Lamps
11. Lamp Driver PCBs
12. Stepping Motor
13. Motor Pulley Assembly
14. Drive Roller Timing Belt
15. Drive Roller Assembly
16. Exit Roller Assembly
17. Feeder Assembly
18. Optical Unit



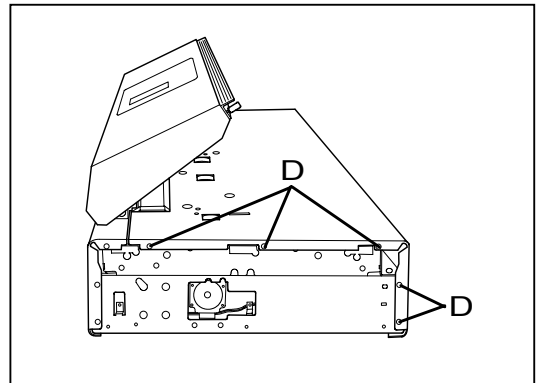
1) Open the Upper Unit, and then remove 8 screws (A).



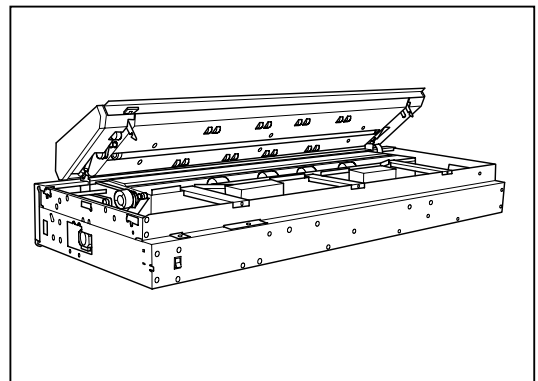
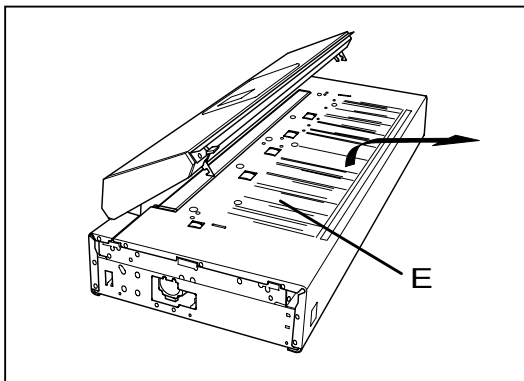
2) Remove 3 screws (B) to take off each Side Cover (C) at both sides.



3) Remove 10 screws (D) at both sides.  
(5 pieces on one side)



4) Take off the Original Table (E).

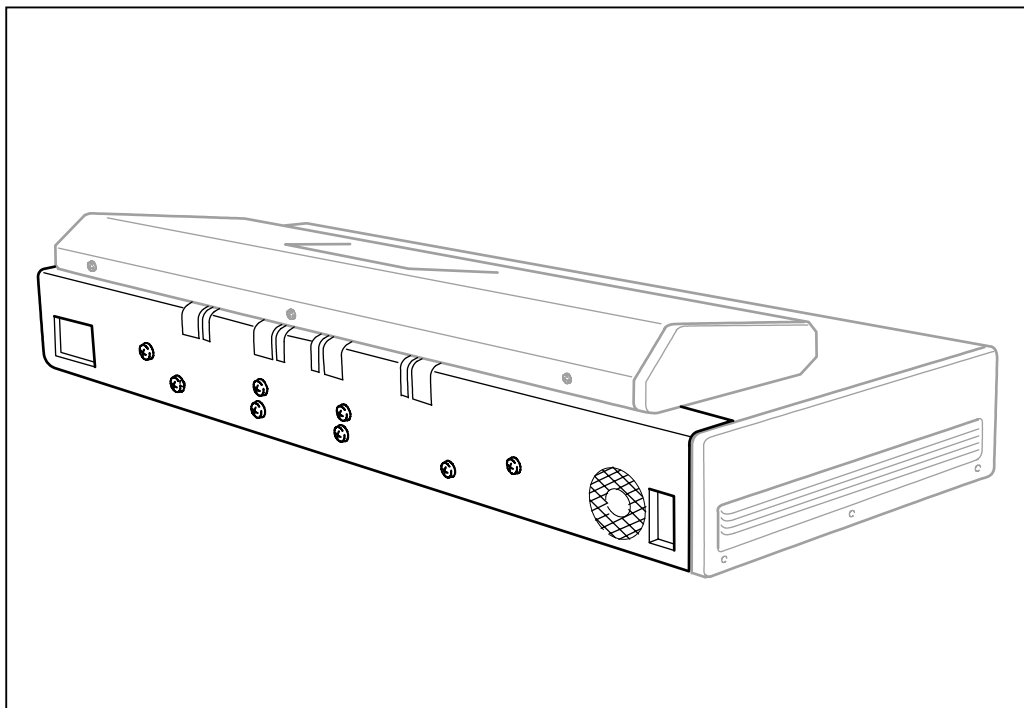


### 4.2.3 Removing the Rear Cover



#### **WARNING**

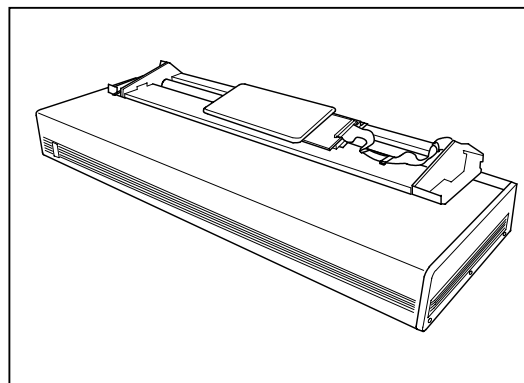
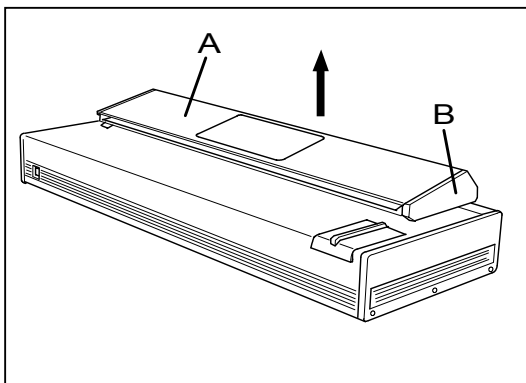
Make sure to disconnect the machine from the power source before disassembly. Otherwise, you may get an electric shock.



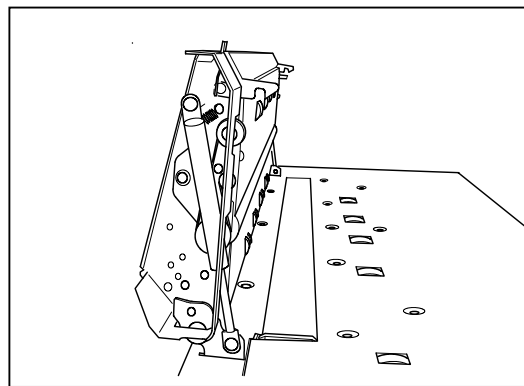
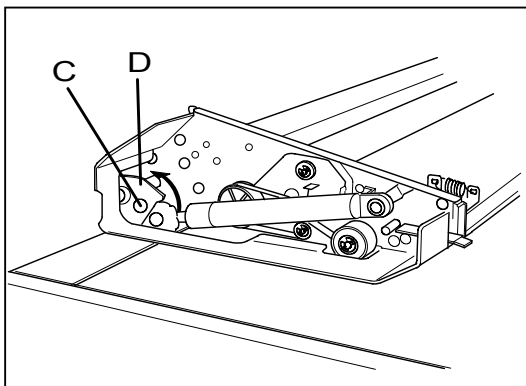
It is required to take off the Rear Cover in order to remove the following parts in the Base Unit.

1. Inlet
2. DC Fan Motor (For exhaustion)
3. Drive Roller Timing Belt
4. Exit Roller Assembly
5. Feeder Assembly
6. Optical Unit

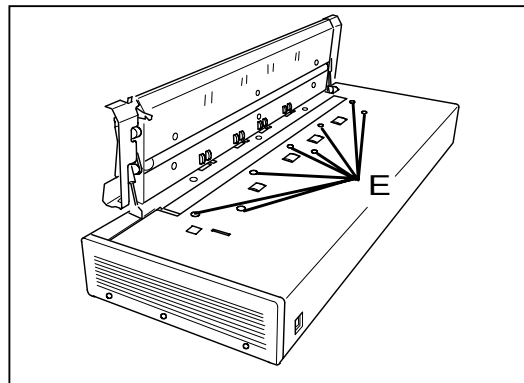
- 1) Making reference to “4.2.1 Removing the Top Cover” on the page 4-2, take off both Top Cover (A) and Top Side Covers (B).



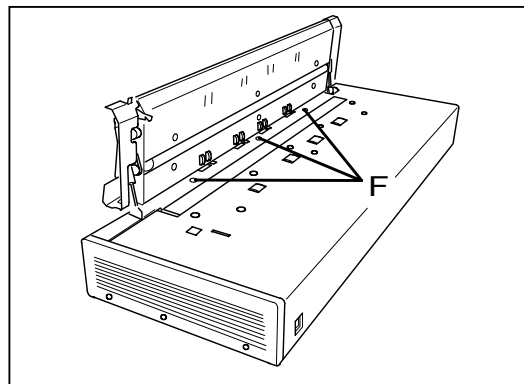
- 2) Remove screws (C) at both sides, move both Damper Stoppers (D) toward the arrow mark, and then stand the Upper Unit vertically.



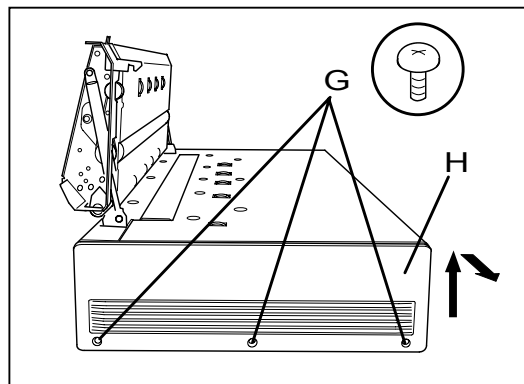
- 3) Remove 8 screws (E).



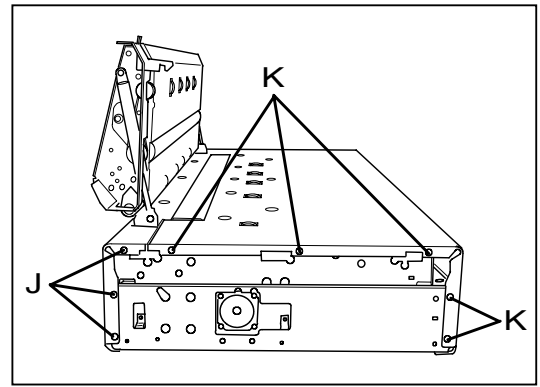
- 4) Remove 3 screws (F).



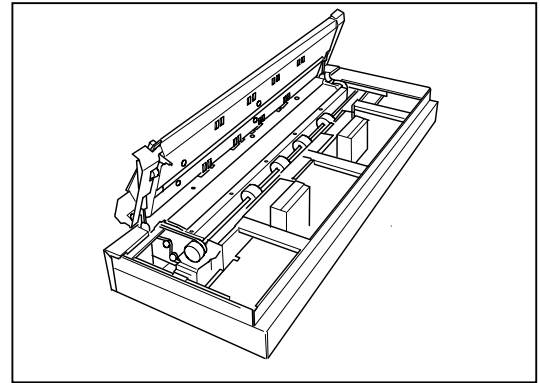
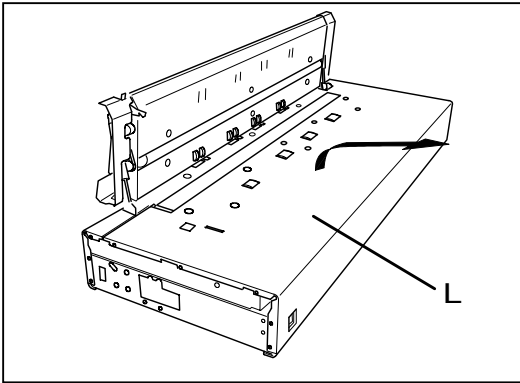
- 5) Remove 3 screws (G) to take off each Side Cover (H) at both sides.



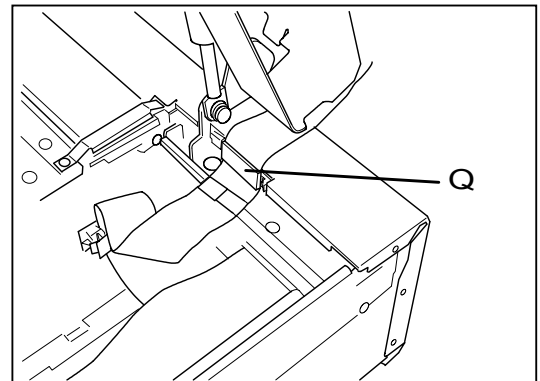
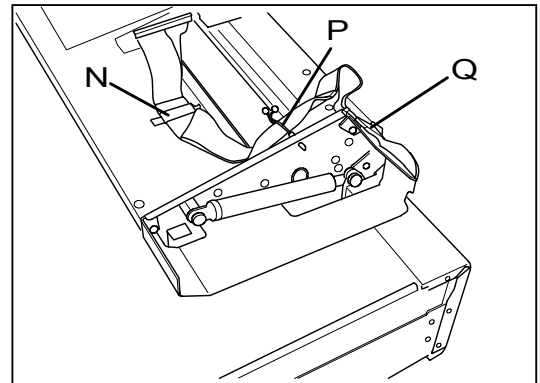
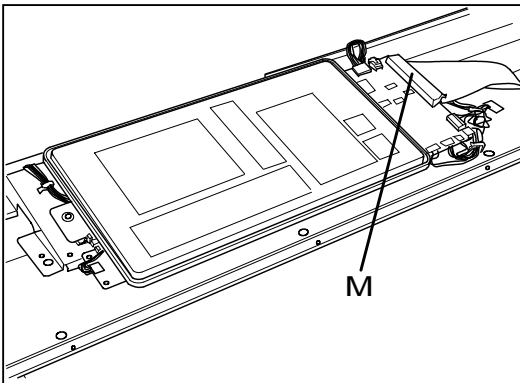
- 6) Remove 6 screws (J) at both sides.  
(3 pieces on one side)  
Also, remove 10 screws (K) at both sides.  
(5 pieces on one side)



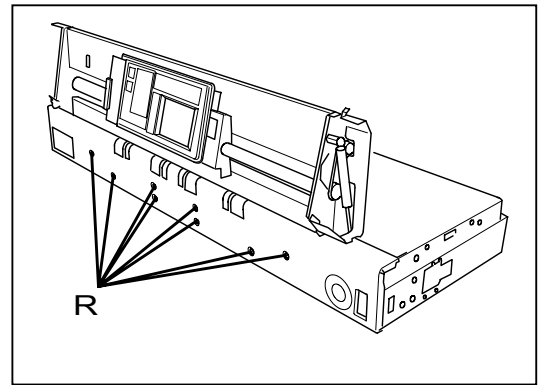
- 7) Take off the Original Table (L).



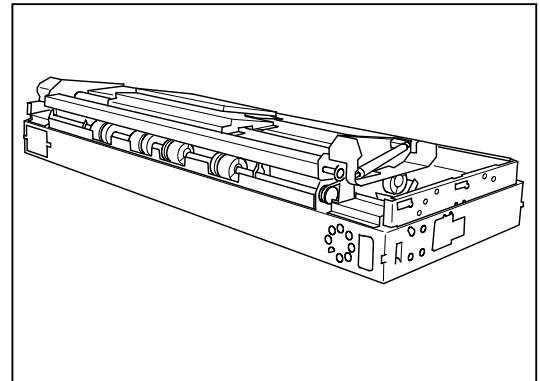
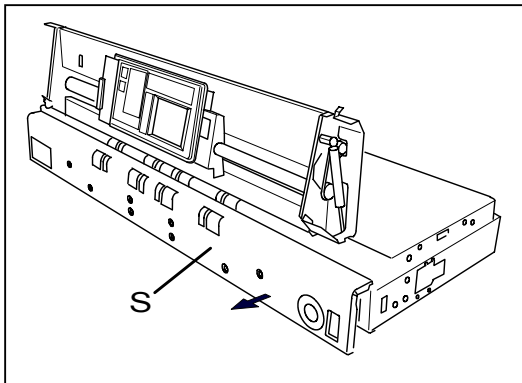
- 8) Disconnect the connector (M) from the Operation Panel, and then release the Flat Cable from Block Core Wire Clamp (N), Cable Clip (P) and 2 pieces of Flat Cable Clamp (Q).



9) Remove 8 screws (R).



10) Take off the Rear Cover (S).



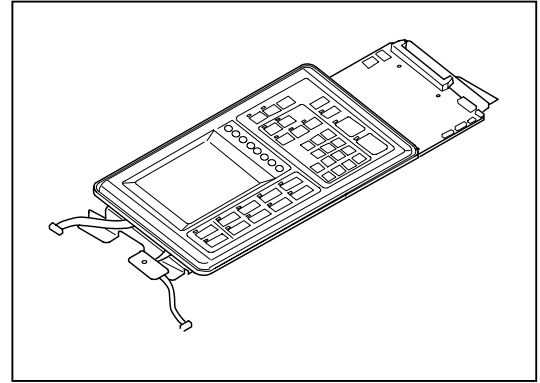
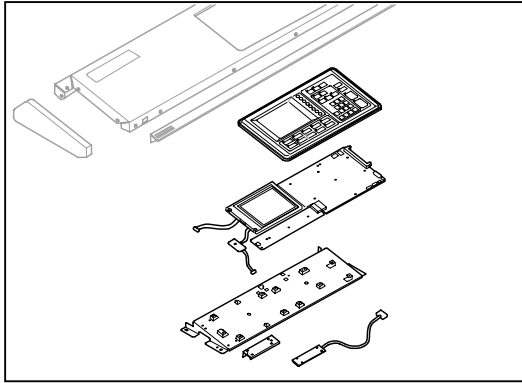
## 4.3 Upper Unit

### 4.3.1 Removing the Operation Panel Unit



#### **WARNING**

Make sure to disconnect the machine from the power source before disassembly. Otherwise, you may get an electric shock.



The Operation Panel Unit is constituted with the following parts.

It is required to remove the Operation Panel Unit when you will replace these parts.

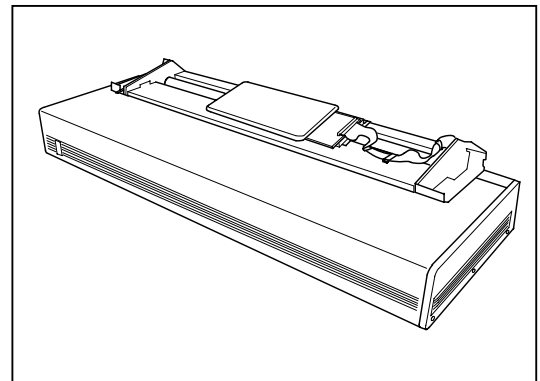
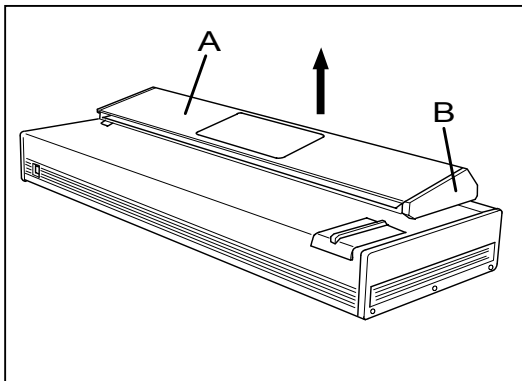
1. Panel PCB
2. Touch Panel Terminal 2 PCB
3. LCD Inverter PCB
4. LCD Module
5. Touch Panel Terminal 1 PCB

Also, it is required to remove the Operation Panel Unit when you will replace the following parts in the Upper Unit.

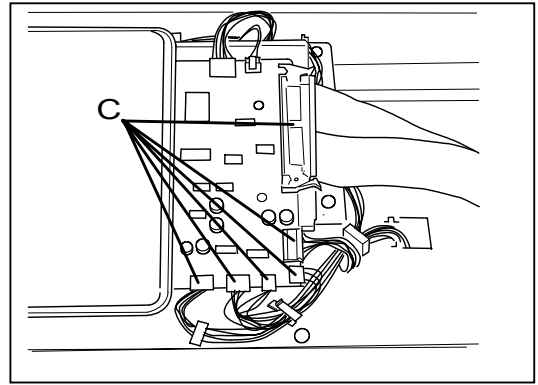
1. White Roller
2. Sensors
3. Rollers

Therefore, please study how to remove the Operation Panel Unit at first because it is the basic job.

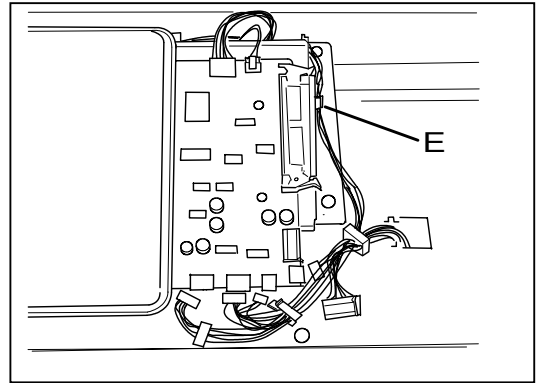
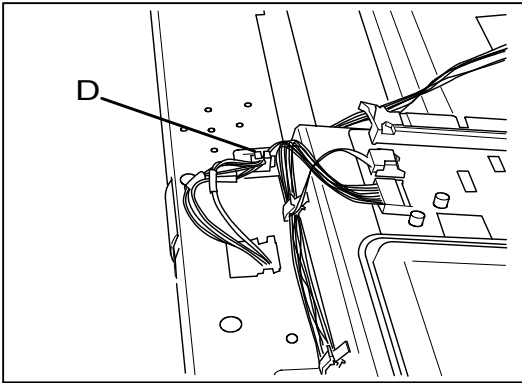
- 1) Making reference to “4.2.1 Removing the Top Cover” on the page 4-2, take off both Top Cover (A) and Top Side Covers (B).



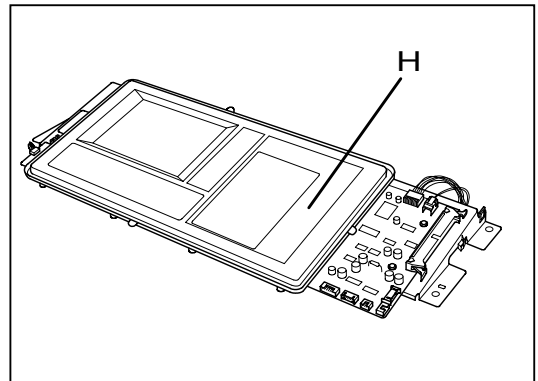
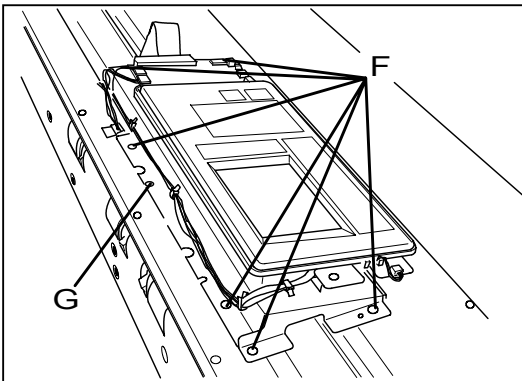
2) Disconnect 6 connectors (C).



3) Release the wires from Edge Saddle (D) and Mini Clamp (E).



4) Remove 6 screws (F), loosen the central screw (G), and then remove the Operation Panel Unit (H).

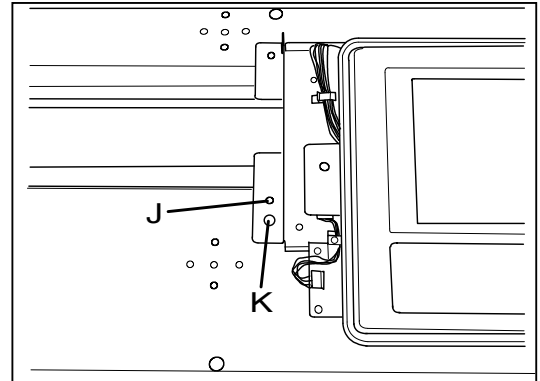
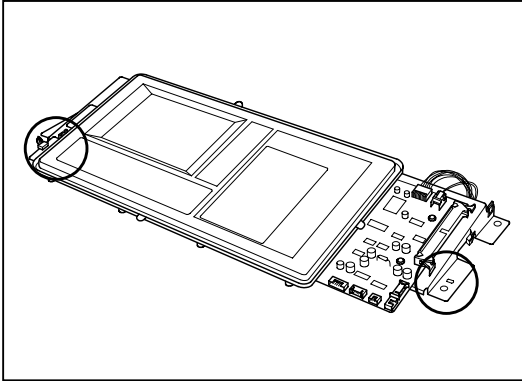


5) Put back the Operation Panel Unit taking care of the following note.

There are Positioning Holes (J) at both sides of the Panel Bracket.

When you install the Operation Panel Unit to the Upper Unit, fit these holes to Positioning Bosses on the Upper Unit.

Then, decide the position of Panel Bracket by tightening the screws (K) at first.



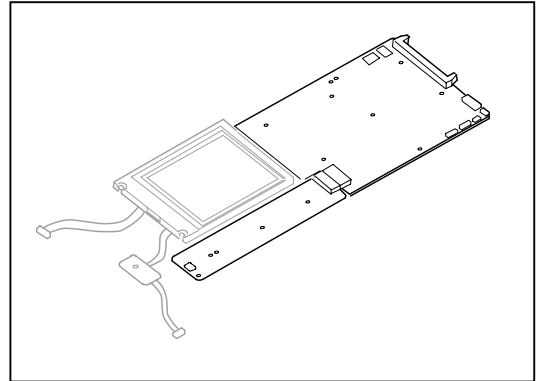
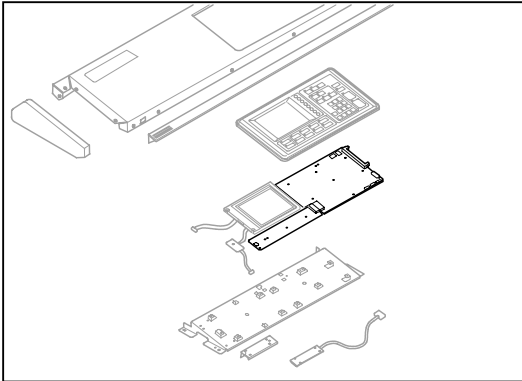


### 4.3.2 Replacing Panel PCB and Touch Panel Terminal 2 PCB

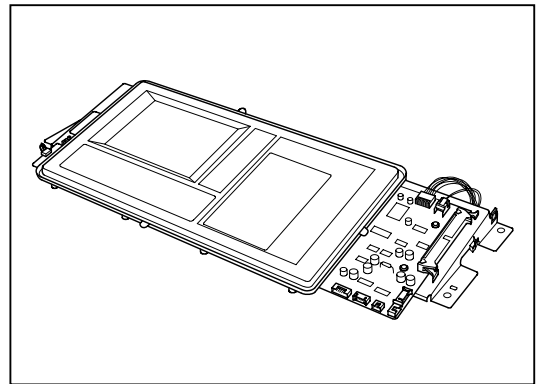
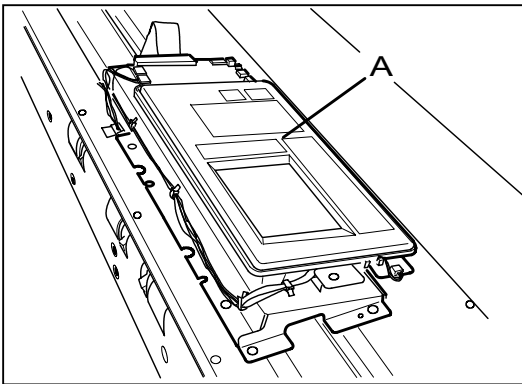


#### WARNING

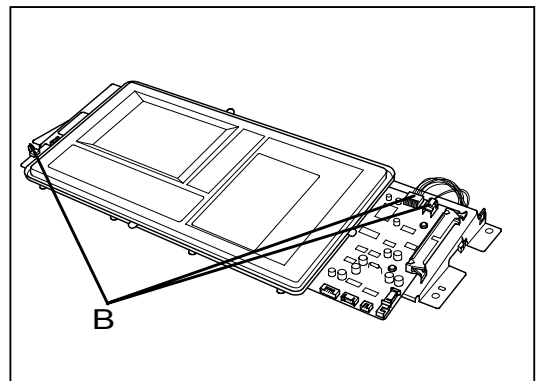
Make sure to disconnect the machine from the power source before disassembly. Otherwise, you may get an electric shock.



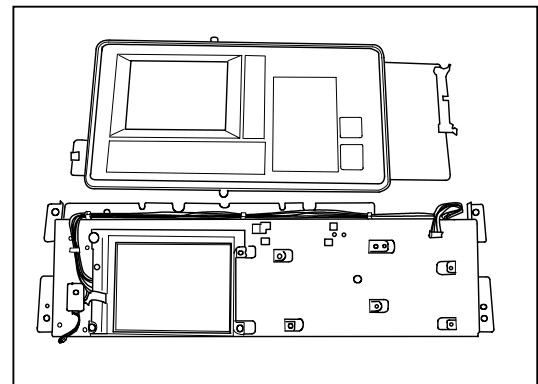
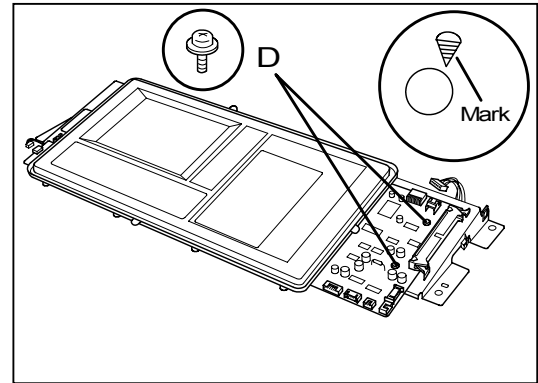
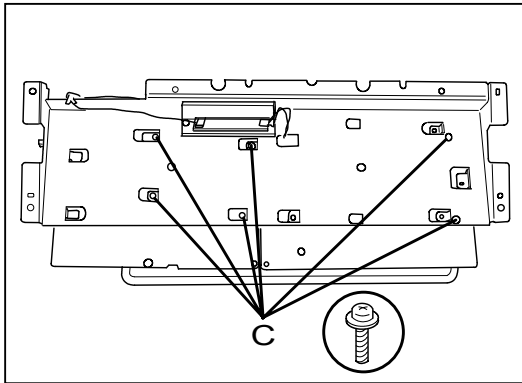
- 1) Making reference to “4.3.1 Removing the Operation Panel Unit” on the page 4-10, remove the Operation Panel Unit (A) from the Upper Unit.



- 2) Disconnect 3 connectors (B).



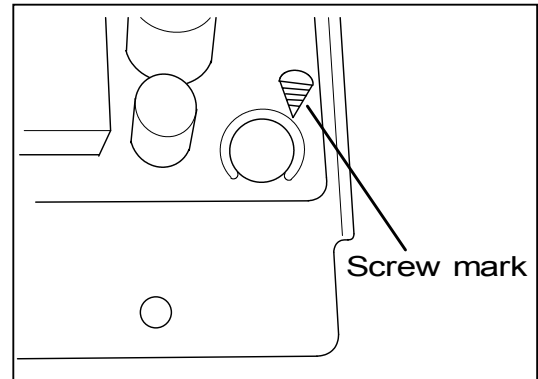
- 3) Turn over the Operation Panel Unit, and then remove 6 pieces of long screw (C : For plastic screw hole).
  - 4) Turn over the Operation Panel Unit, and then remove 2 pieces of short screw (D : For metal screw hole).
- Then, divide the Operation Panel Unit into PCB Part and LCD Part.



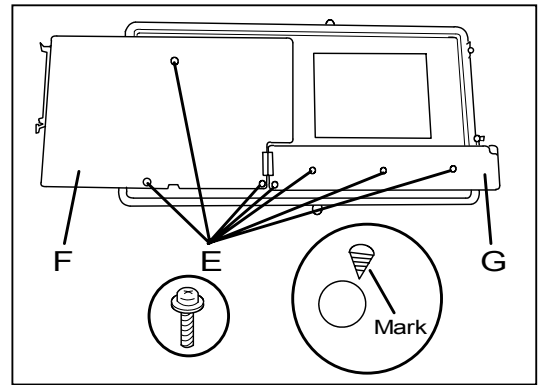
### Reference

There are screw marks near screw holes of each PCB.  
It means the screw directly fixes the PCB to the setting bracket.  
(If the screw hole is not marked with the screw mark, it means the screw fixes the PCB with something else.)

There are 2 kinds of screw that fix the PCB.  
One is for plastic screw hole (long one) and the other is for metal one (short one).

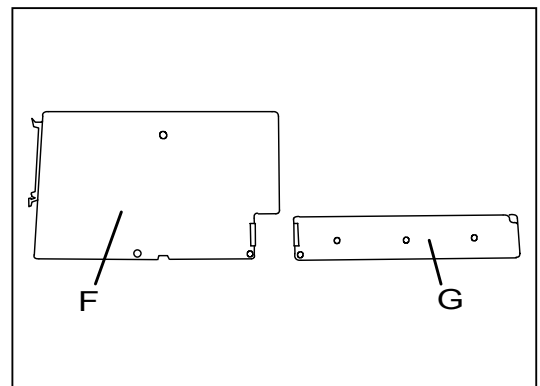
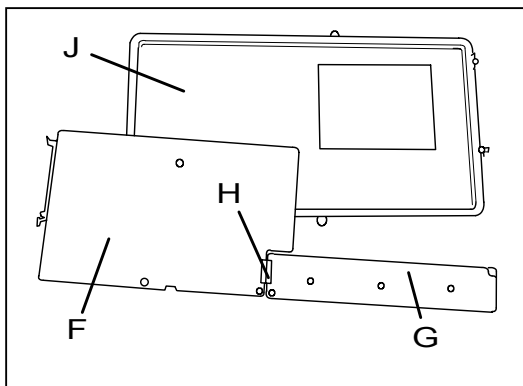


- 5) Remove 7 screws (E) which fix Panel PCB (F) and Touch Panel Terminal 2 PCB (G).



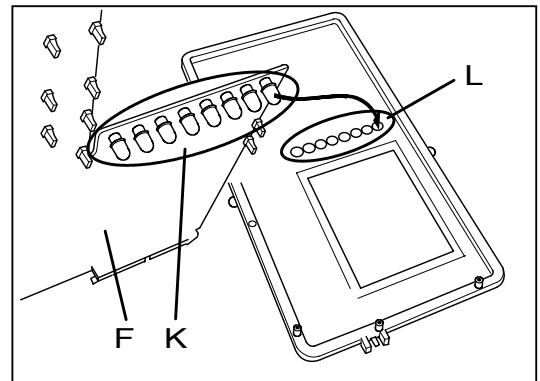
- 6) Both Panel PCB (F) and Touch Panel Terminal 2 PCB (G) are connected with each other by the connector (H).  
When you remove PCBs from Panel Base (J), make sure to catch PCBs with both hands so as not to break the connector (H).  
Then, separate PCBs pulling to the other directions each other.

**Note : Make sure to separate PCBs after removing them from the Panel Base (J).  
Otherwise, you may break LED lamps of the PCB since they are fitted into the Panel Base.**



- 7) Install new Panel PCB and Touch Panel Terminal 2 PCB to the machine in the reversed order taking care of the following note.

Make sure to fit LED lamps (K) of the Panel PCB (F) to the holes (L) of the Panel Base.

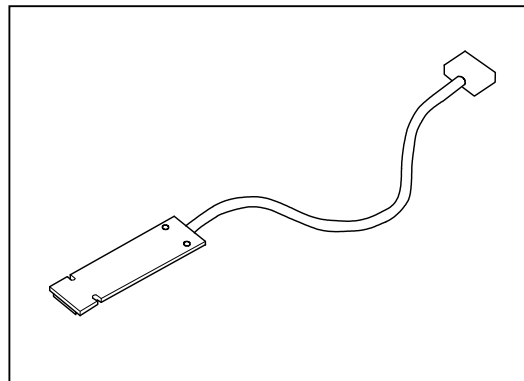
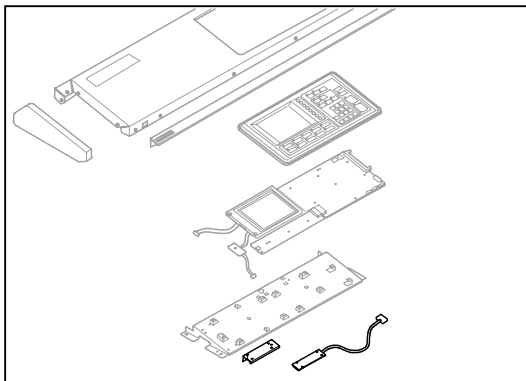


### 4.3.3 Replacing the LCD Inverter PCB

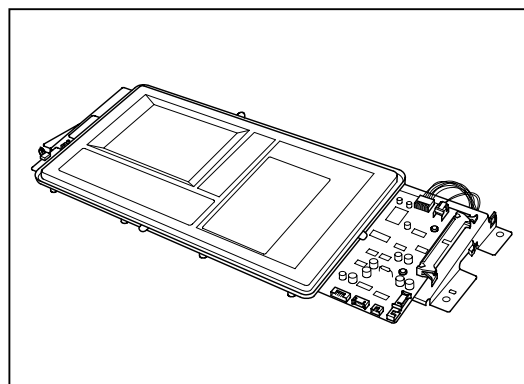
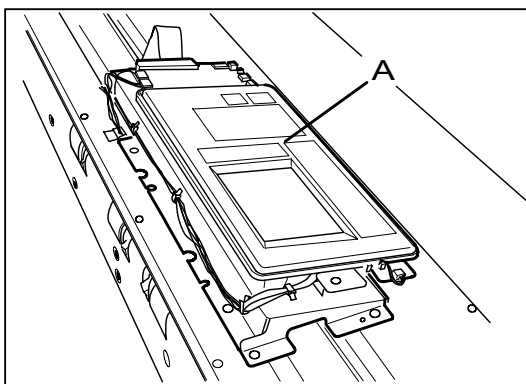


#### WARNING

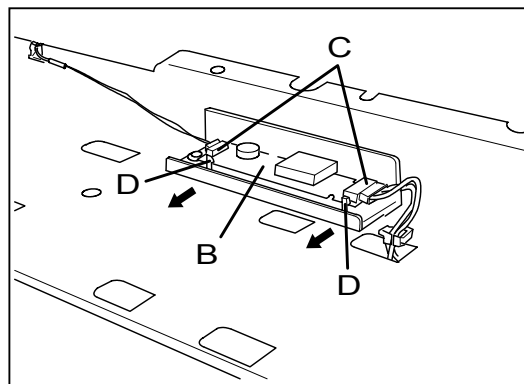
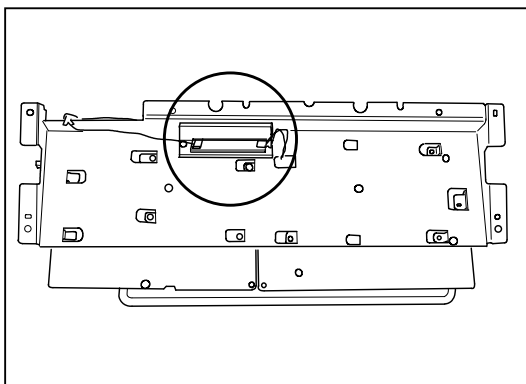
Make sure to disconnect the machine from the power source before disassembly. Otherwise, you may get an electric shock.



- 1) Making reference to “4.3.1 Removing the Operation Panel Unit” on the page 4-10, remove the Operation Panel Unit (A) from the Upper Unit.



- 2) If you turn over the Operation Panel Unit, you will find the LCD Inverter PCB (B). Disconnect 2 connectors (C), and then move stoppers (D) toward the arrow mark to remove the Inverter PCB (B).



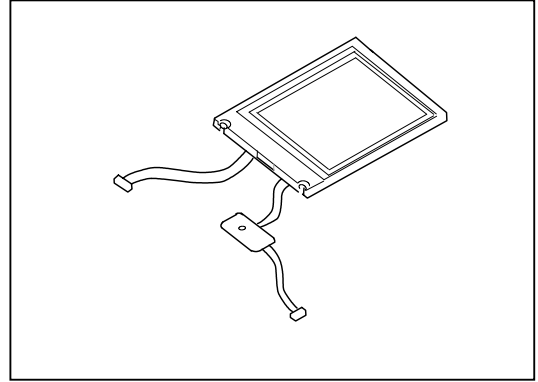
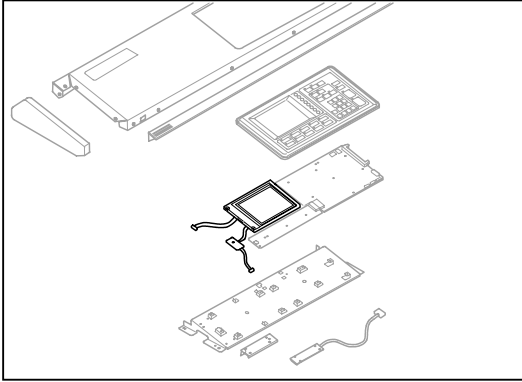
- 3) Install the new LCD Inverter PCB to the machine in the reversed order.

#### 4.3.4 Replacing LCD Module (Touch Panel) and Touch Panel Terminal 1 PCB

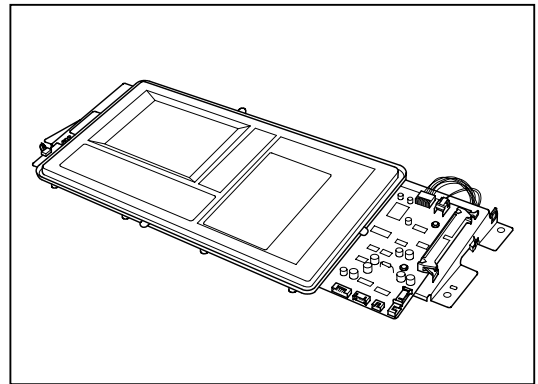
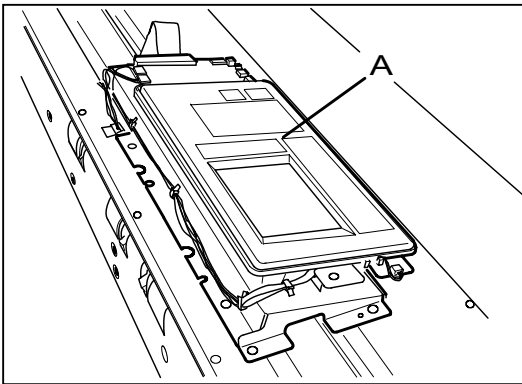


##### **WARNING**

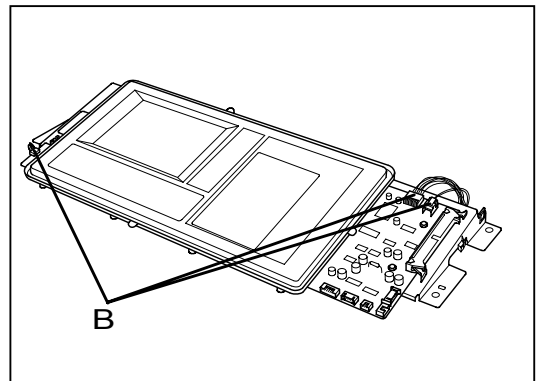
Make sure to disconnect the machine from the power source before disassembly. Otherwise, you may get an electric shock.



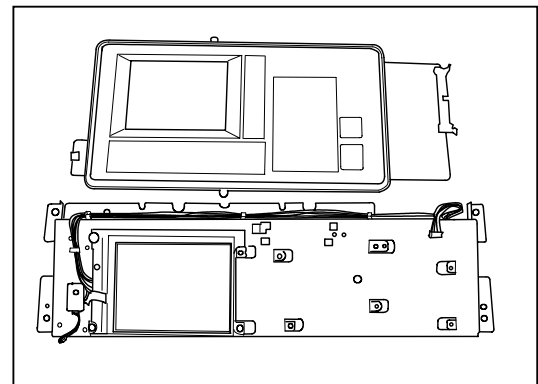
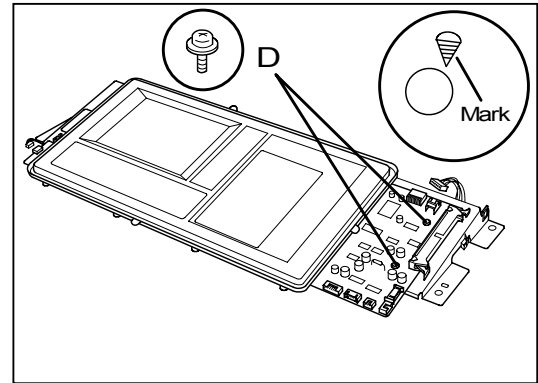
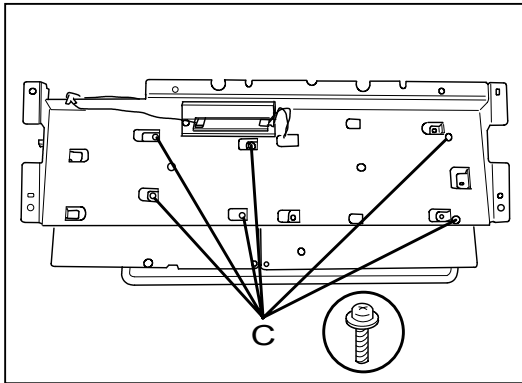
- 1) Making reference to “4.3.1 Removing the Operation Panel Unit” on the page 4-10, remove the Operation Panel Unit (A) from the Upper Unit.



- 2) Disconnect 3 connectors (B).



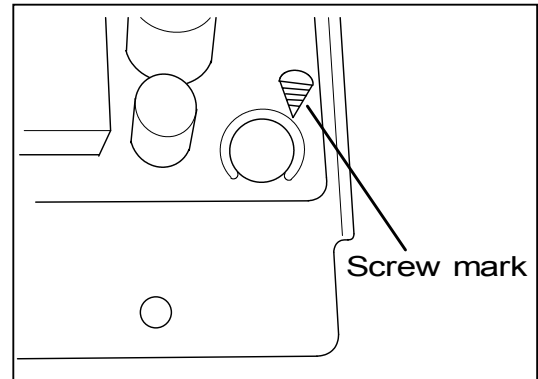
- 3) Turn over the Operation Panel Unit, and then remove 6 pieces of long screw (C : For plastic screw hole).
  - 4) Turn over the Operation Panel Unit, and then remove 2 pieces of short screw (D : For metal screw hole).
- Then, divide the Operation Panel Unit into PCB Part and LCD Part.



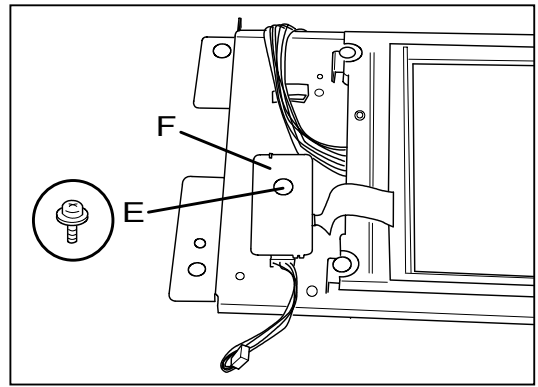
### Reference

There are screw marks near screw holes of each PCB.  
 It means the screw directly fixes the PCB to the setting bracket.  
 (If the screw hole is not marked with the screw mark, it means the screw fixes the PCB with something else.)

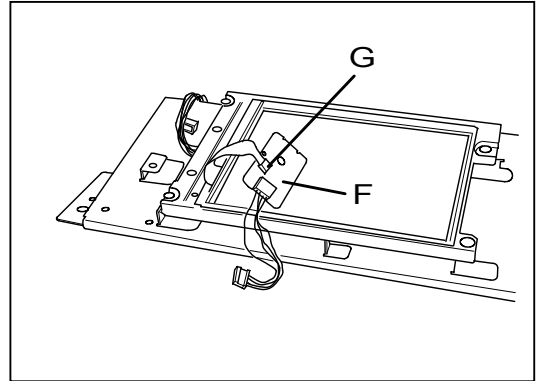
There are 2 kinds of screw that fix the PCB.  
 One is for plastic screw hole (long one) and the other is for metal one (short one).



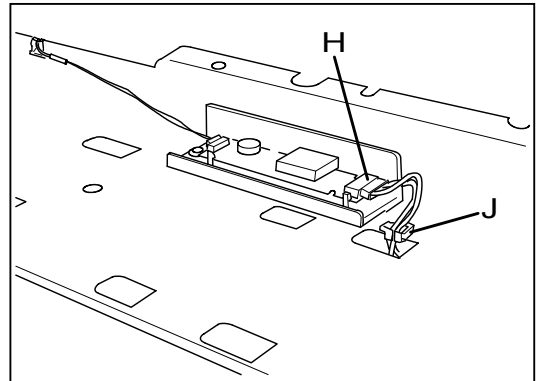
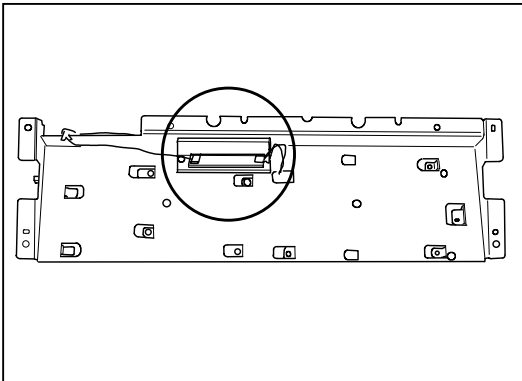
- 5) Remove the screw (E) which fixes the Touch Panel Terminal 1 PCB (F).



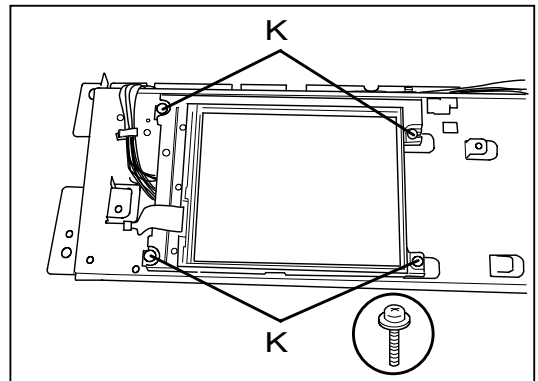
- 6) Carefully disconnect the connector (G) to remove the Touch Panel Terminal 1 PCB (F).



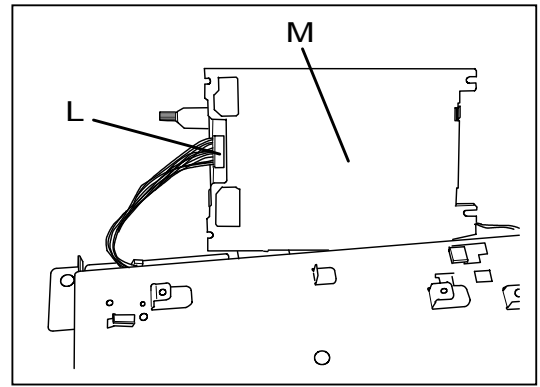
- 7) There is the Inverter PCB on the back of the Panel Bracket.  
Disconnect the large connector (H) from the Inverter PCB, and release the wires from the Edge Saddle (J).



- 8) Remove 4 screws (K).

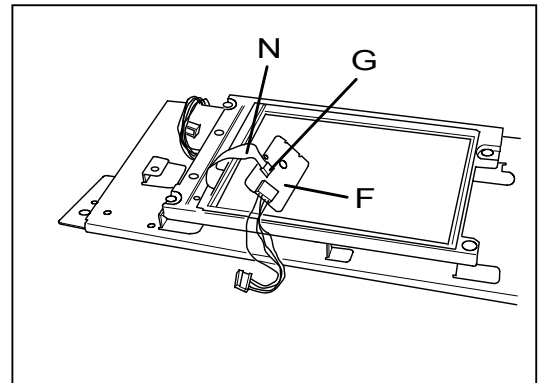


- 9) Disconnect the connector (L) to remove the LCD Module (M).

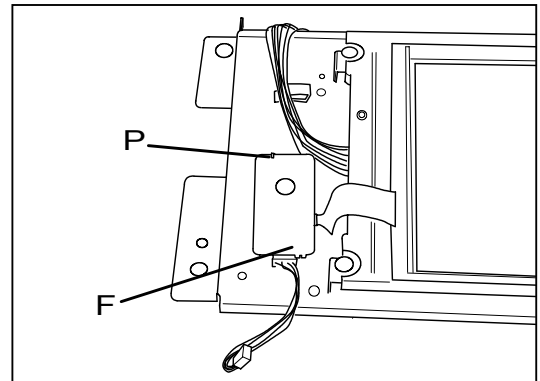


- 10) Install new Touch Panel Terminal 1 PCB and LCD Module to the machine in the reversed order taking care of the following notes.

- (a) Connect the connector (G) to the Touch Panel Terminal 1 PCB (F) taking care not to break the Film Harness (N).



- (b) When you put back the Touch Panel Terminal 1 PCB (F), fit its notch to the positioning plate (P).



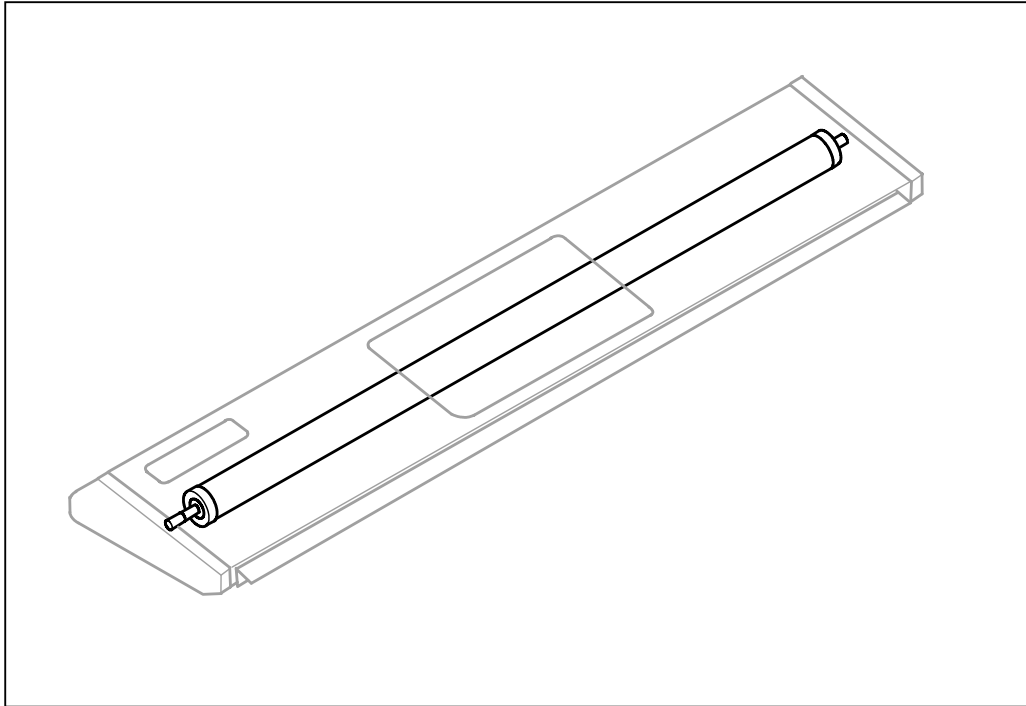


### 4.3.5 Replacing the White Roller

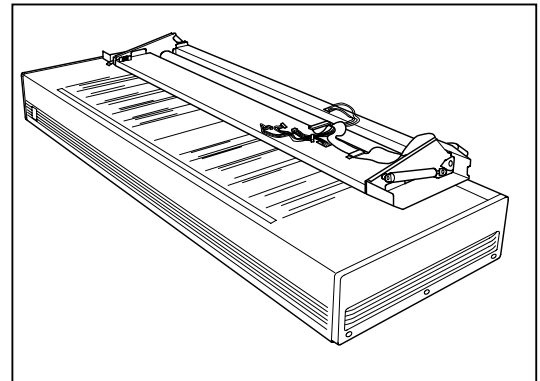
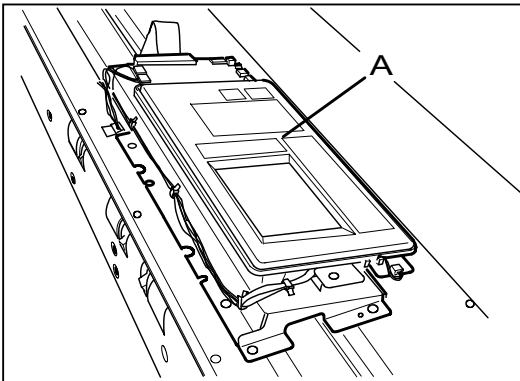


#### **WARNING**

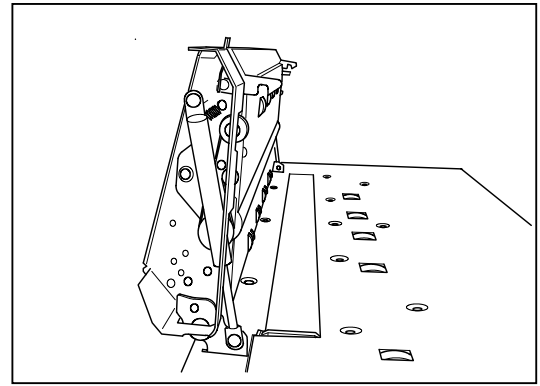
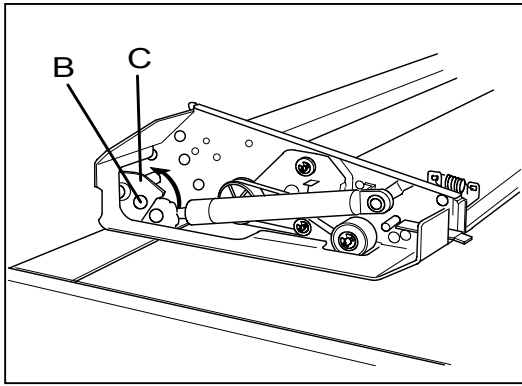
Make sure to disconnect the machine from the power source before disassembly. Otherwise, you may get an electric shock.



- 1) Making reference to “4.3.1 Removing the Operation Panel Unit” on the page 4-10, remove the Operation Panel Unit (A) from the Upper Unit.

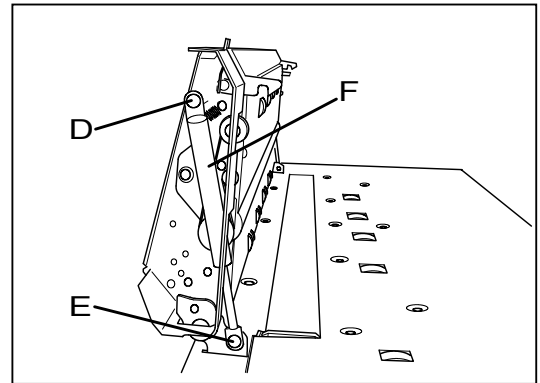


- 2) Remove screws (B) at both sides, move both Damper Stoppers (C) toward the arrow mark, and then stand the Upper Unit vertically.



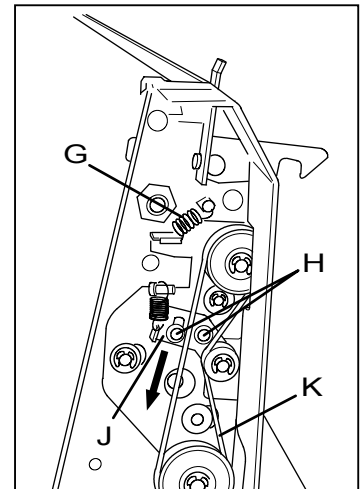
- 3) Remove both screws (D) and (E) to remove only the Gas Spring (F) at the left.  
Since the screw (E) has a Collar, do not lose it.

Note : Do not remove the Gas Spring at the right to make it easy to do the following works from 4) to 8).

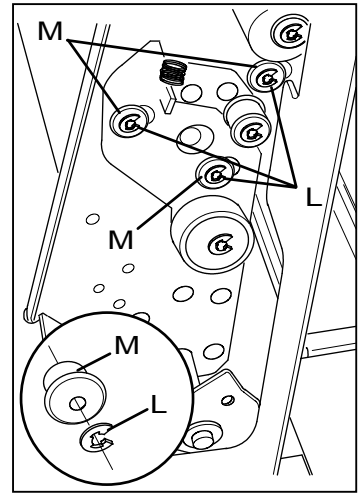


- 4) Remove the Tension Spring A (G).

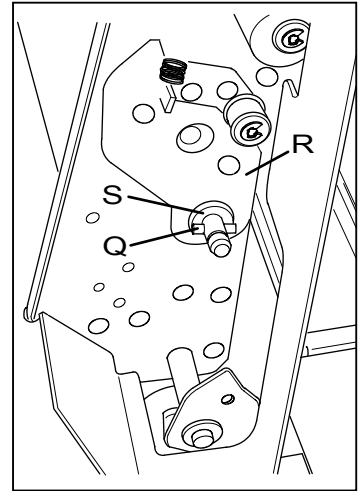
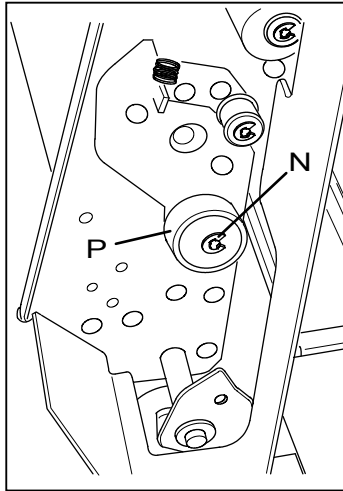
- 5) Loosen 2 screws (H), then move the Tension Plate A Assembly (J) toward the arrow mark to unfasten the White Roller Timing Belt (K).  
Remove the White Roller Timing Belt (K).



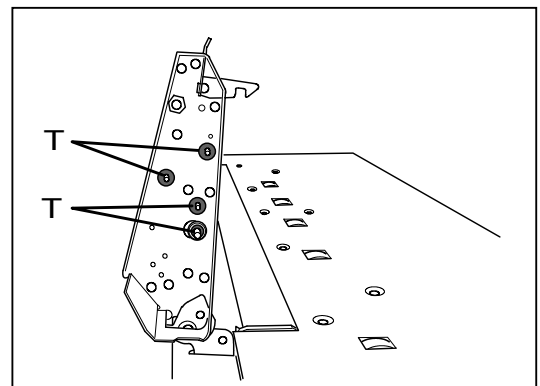
6) Remove 3 pieces of E Ring (L) to remove 3 pieces of Holder (M).



7) Remove the E Ring (N) to remove Pulley (P) and Parallel Pin (Q).  
Then, remove both Plate Assembly (R) and Bearing (S).

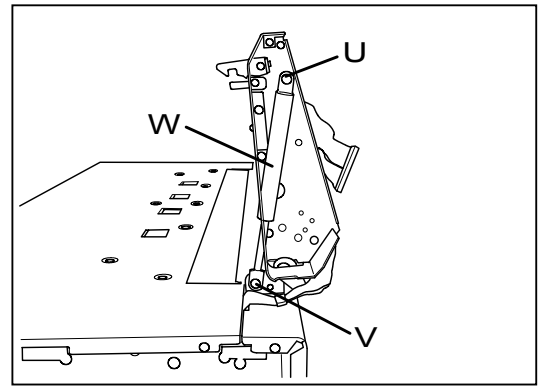


8) Remove 4 pieces of Polyslider (T) and keep them  
so as not to lose.

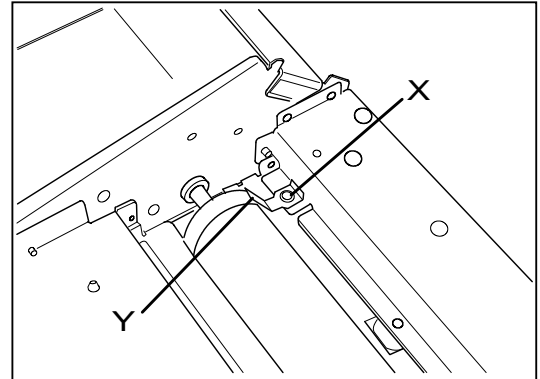


- 9) Remove both screws (U) and (V) to remove the Gas Spring (W) at the right.  
Since the screw (V) has a Collar, do not lose it.

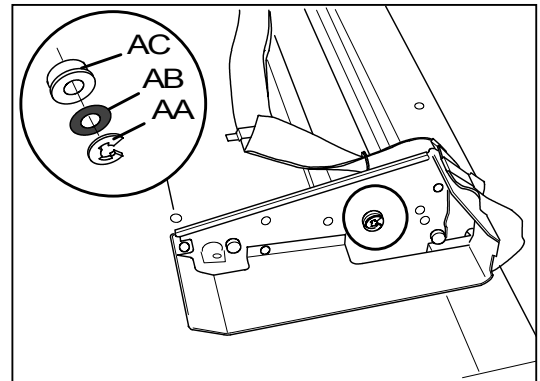
**Note : If you remove both Gas Springs, the Upper Unit will fall down.  
Therefore, remove them supporting the Upper Unit with one hand.**



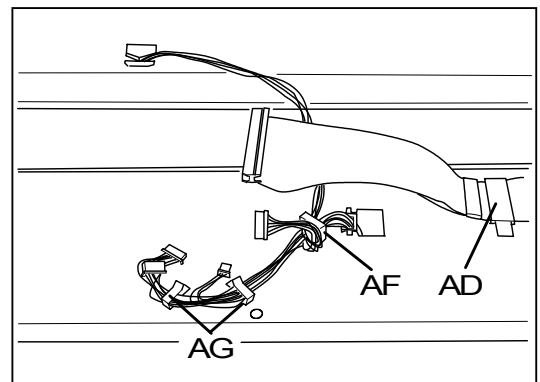
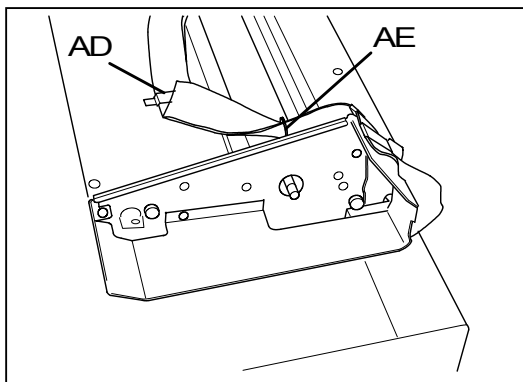
- 10) Remove the screw (X) to remove each Spring (Y) at both sides.



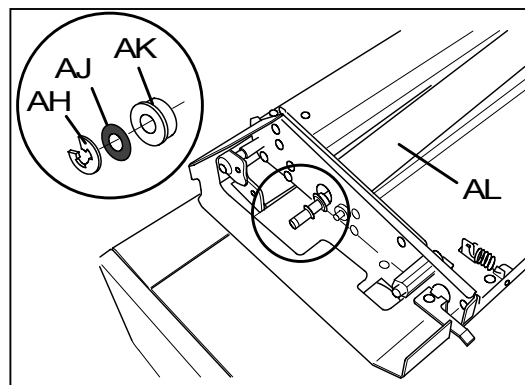
- 11) Remove the E Ring (AA) at the right to remove Polyslider (AB) and Bearing (AC).



- 12) Open the Block Core Wire Clamp (AD) to release the Flat Cable.  
Release the Flat Cable from the Cable Clip (AE) also.  
Open both Wire Saddle (AF) and Mini Clamps (AG) to release the wires.

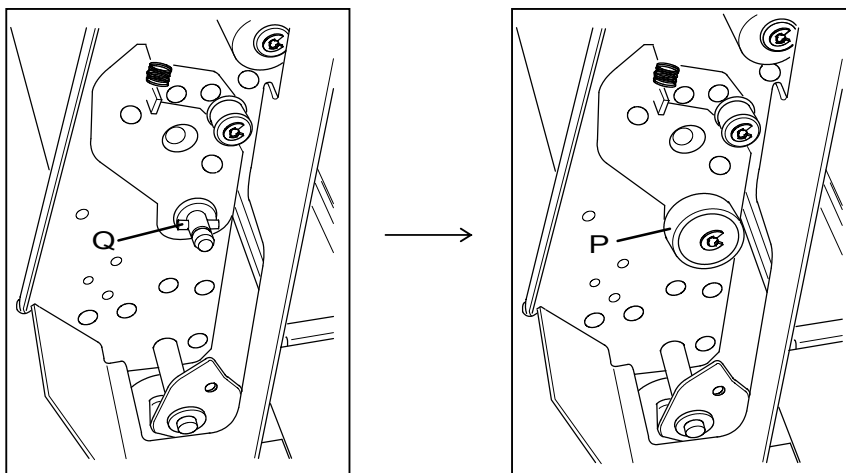


- 13) Remove the E Ring (AH) at the left to remove Polyslider (AJ) and Bearing (AK), and finally remove the White Roller (AL).

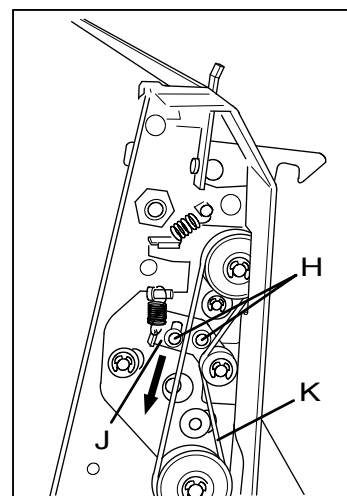


- 14) Install the new White Roller to the machine in the reversed order taking care of the following notes.

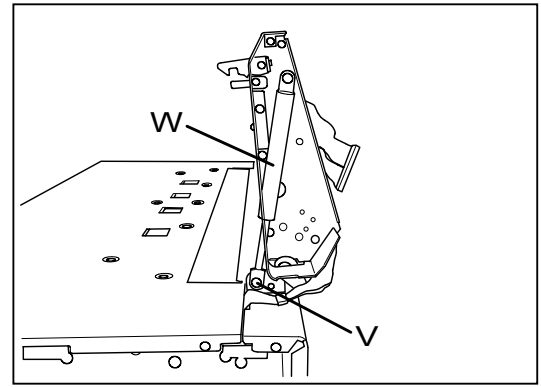
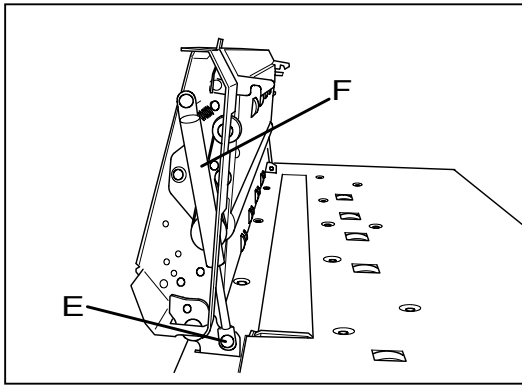
- (a) Make sure to set the Parallel Pin (Q) before putting back the Pulley (P). Otherwise, the Pulley can not be fixed.



- (b) Stretch the White Roller Timing Belt (K) while screws (H) are loosed.  
If you do so, the Tension Plate A Assembly (J) comes to a standstill being pulled by both Tension Spring and White Roller Timing Belt.  
Since this position of the Tension Plate A Assembly (J) is best for the tension of White Roller Timing Belt (K), fix it tightening screws (H).



(c) When you fix each Gas Spring (F : left) and (W : right) with screws, do not forget to attach the Collar to the lower screws (E) and (V).



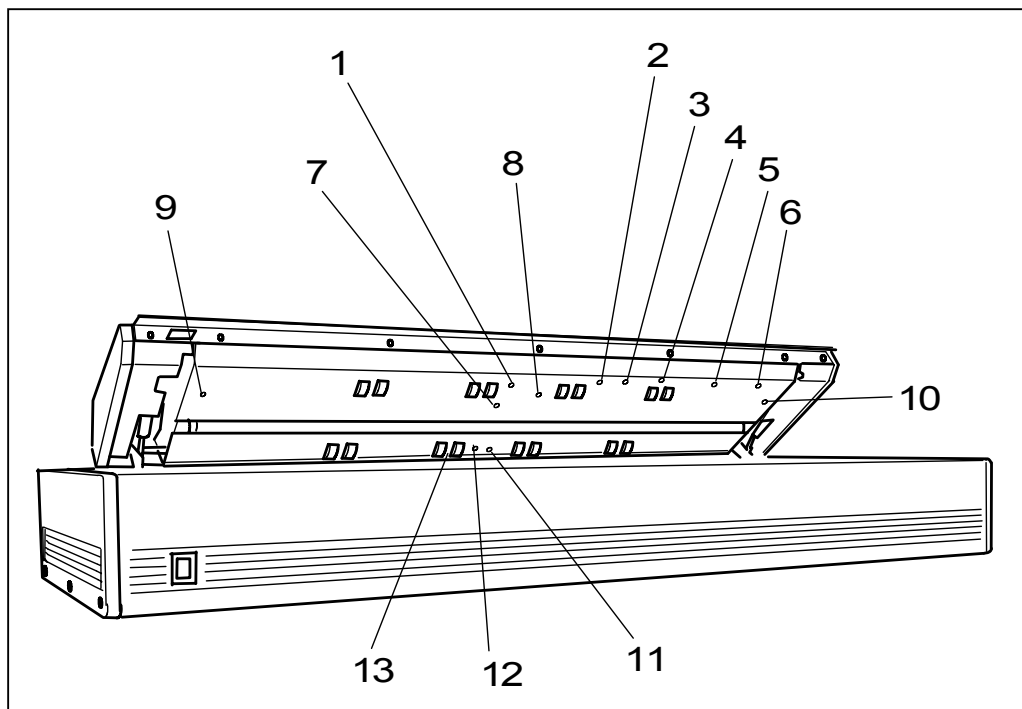
### 4.3.6 Replacing each sensor



#### WARNING

Make sure to disconnect the machine from the power source before disassembly. Otherwise, you may get an electric shock.

The following figure shows the location of each sensor.



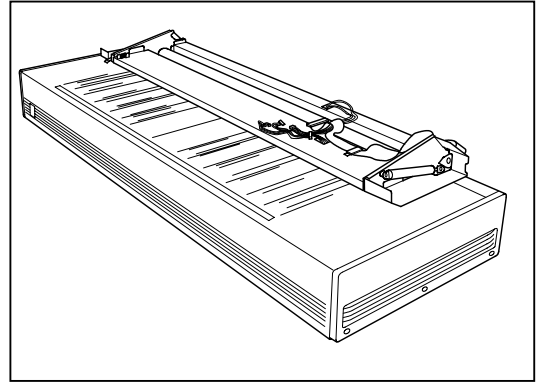
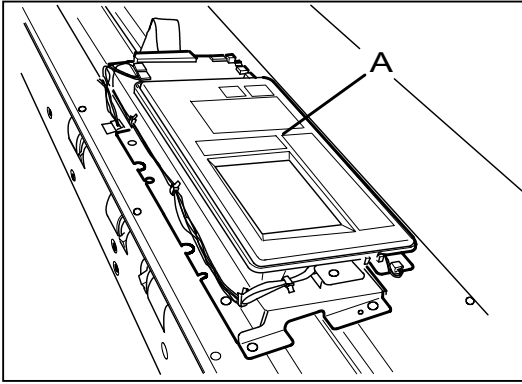
Sensors from 1 to 10 are installed to the Front Reinforcement Frame Assembly. Therefore, you have to remove the Front Reinforcement Frame Assembly.

No.	Name of sensor
1	Original Size Sensor 1 (Detecting A4 and 8.5", and detecting insertion of original)
2	Original Size Sensor 2 (Detecting A3, B4, 11" and 12")
3	Original Size Sensor 3 (Detecting A2, B3, 17" and 18")
4	Original Size Sensor 4 (Detecting A1, B2, 22" and 24")
5	Original Size Sensor 5 (Detecting A0, B1, 30" and 34")
6	Original Size Sensor 6 (Detecting 36")
7	Original Jam Sensor 1 (Detecting Leading/trailing edge of original also)
8	Original Jam Sensor 4 (Detecting Scan Wait Position also)
9	Original Skew Sensor 1 (Left)
10	Original Skew Sensor 2 (Right)

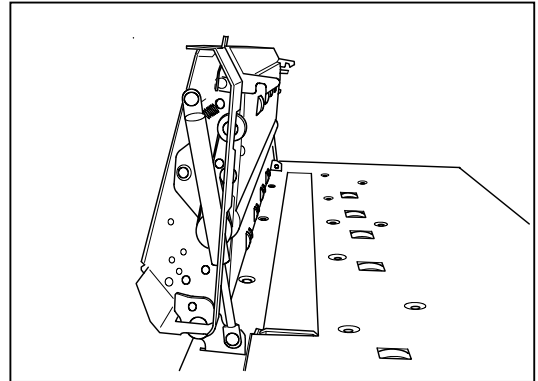
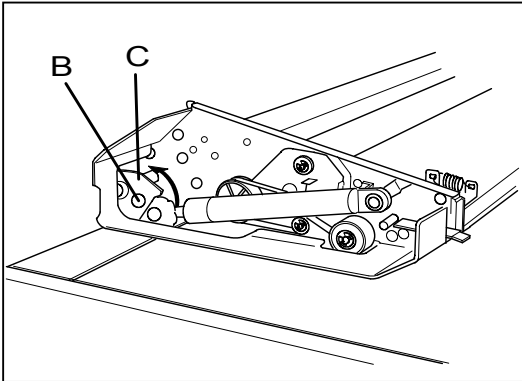
Sensors from 11 to 13 are installed to the Rear Reinforcement Plate Assembly. Therefore, you have to remove the Rear Reinforcement Frame Assembly.

No.	Name of sensor
11	Original Jam Sensor 3
12	Original Jam Sensor 2
13	Long Original Jam Sensor PCB

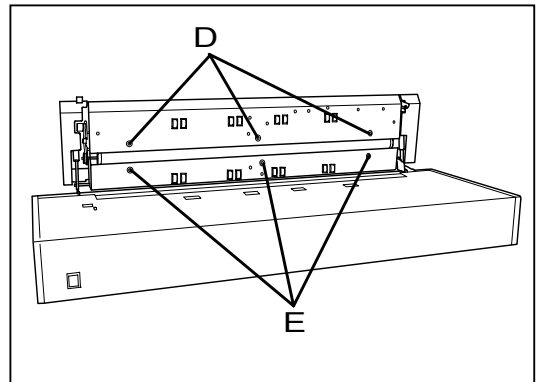
- 1) Making reference to “4.3.1 Removing the Operation Panel Unit” on the page 4-10, remove the Operation Panel Unit (A) from the Upper Unit.



- 2) Remove screws (B) at both sides, move both Damper Stoppers (C) toward the arrow mark, and then stand the Upper Unit vertically.



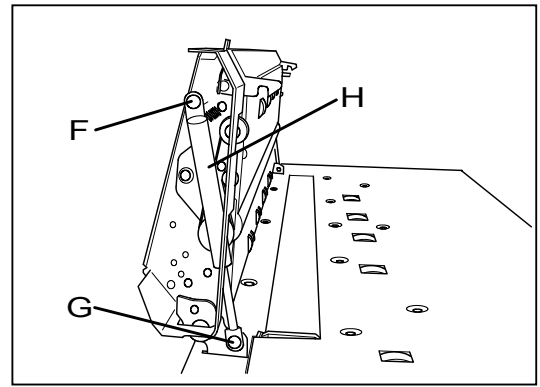
- 3) Remove 3 screws (D) and also 3 screws (E).



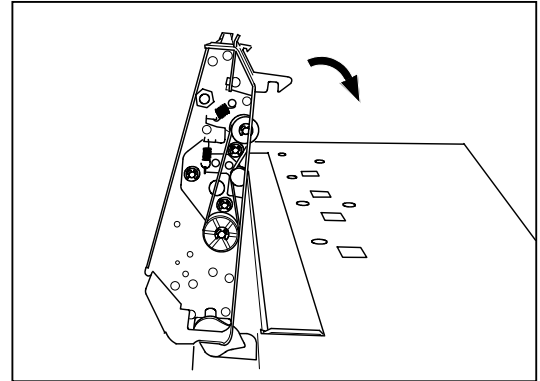


- 4) Remove both screws (F) and (G) to remove each Gas Spring (H) at both sides.  
Since the screw (G) has a Collar, do not lose it.

**Note : If you remove both Gas Springs (H), the Upper Unit will fall down.  
Therefore, remove them supporting the Upper Unit with one hand.**

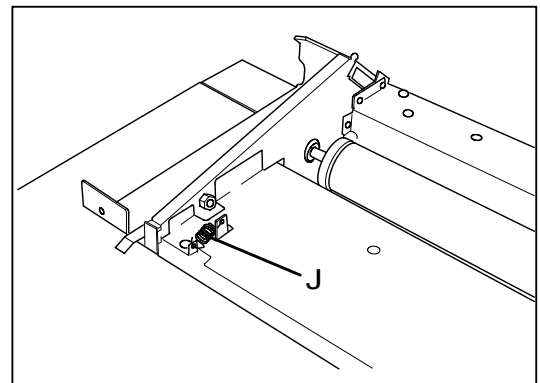


- 5) Close the Upper Unit.



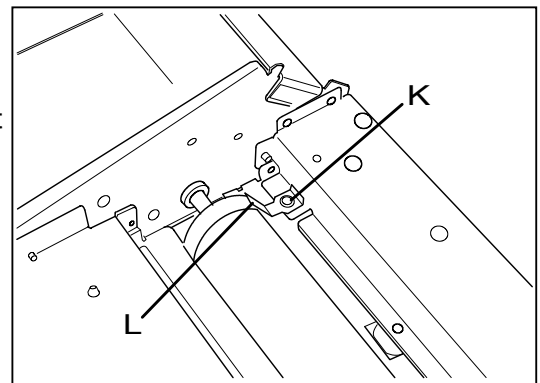
- 6) Remove the Tension Spring (J).

**Note : When you will remove the Rear Reinforcement Plate Assembly, you do not have to remove the Tension Spring (J).**

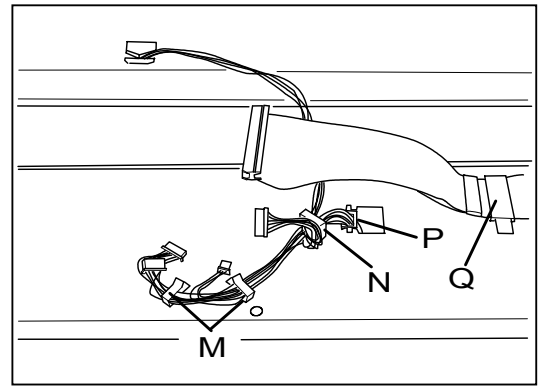


- 7) Remove the screw (K) to remove each Spring (L) at both sides.

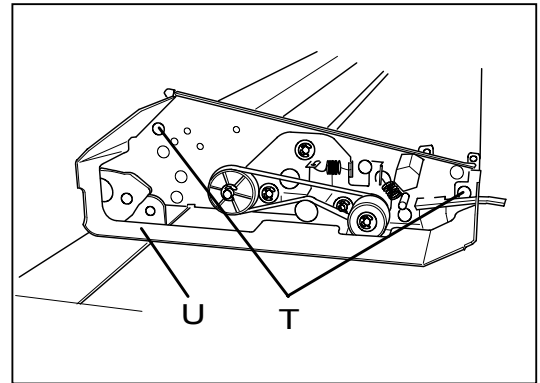
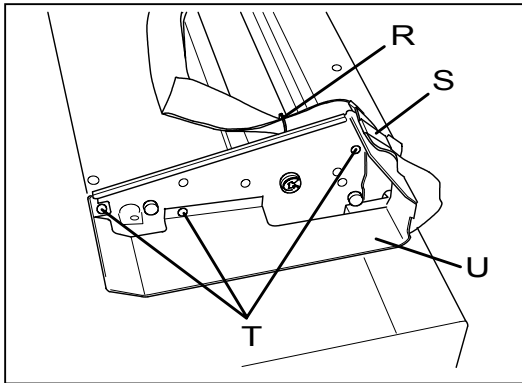
**Note : When you will remove the Front Reinforcement Plate Assembly, you do not have to remove Springs (L).**



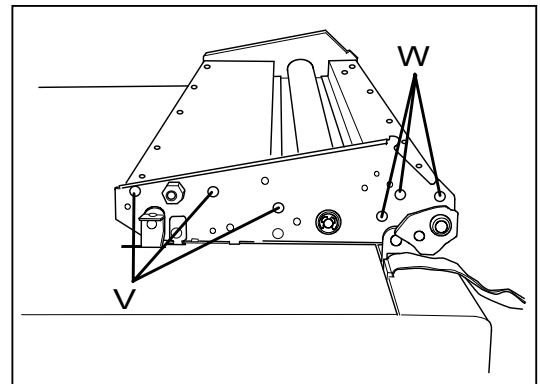
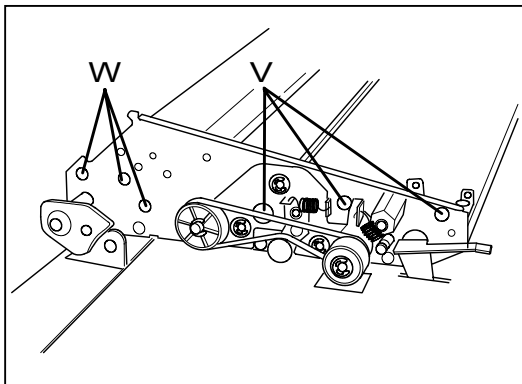
- 8) Release the wires from Mini Clamps (M), Wire Saddle (N) and Edge Saddle (P), and also release the Flat Cable from the Block Core Wire Clamp (Q).



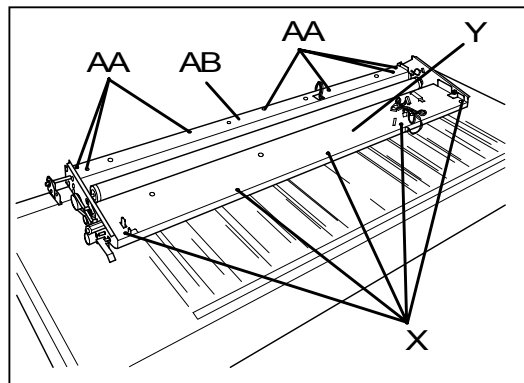
- 9) Release the Flat Cable from Cable Clip (R) and Flat Cable Clamp (S).  
Remove 5 screws (T) to remove Damper Covers (U) at both sides.



- 10) Remove 6 screws (V : 3 pieces on one side).  
Remove 6 screws (W : 3 pieces on one side).

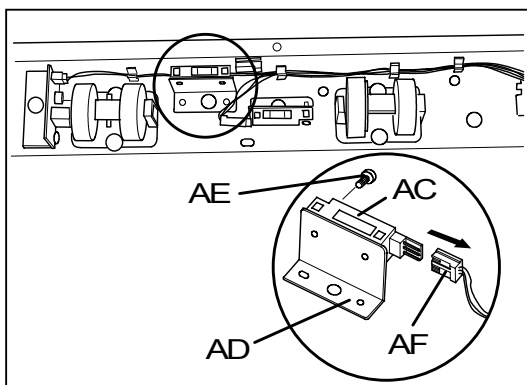


- 11) Remove 5 screws (X) to remove the Front Reinforcement Plate Assembly (Y).  
Remove 7 screws (AA) to remove the Rear Reinforcement Plate Assembly (AB).

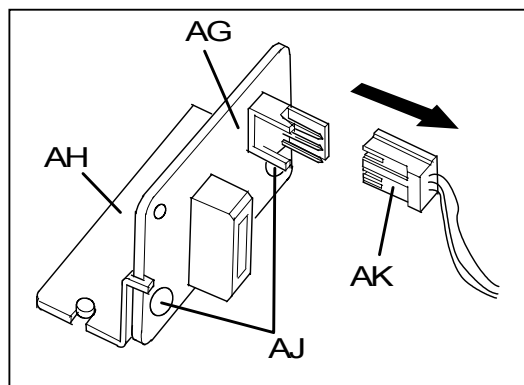


- 12) Each sensor (AC) is fixed to the Sensor Holder (AD) with the screw (AE).  
Remove the screw (AE) and disconnect the connector (AF) to remove the sensor.

In case of the Long Original Jam Sensor PCB (AG), remove it from the Jam Sensor Holder (AH) removing 2 screws (AJ) and disconnecting the connector (AK).

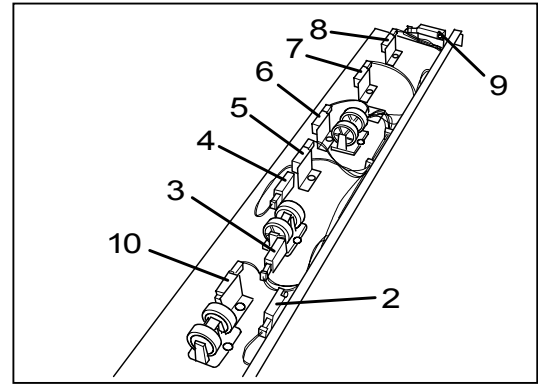
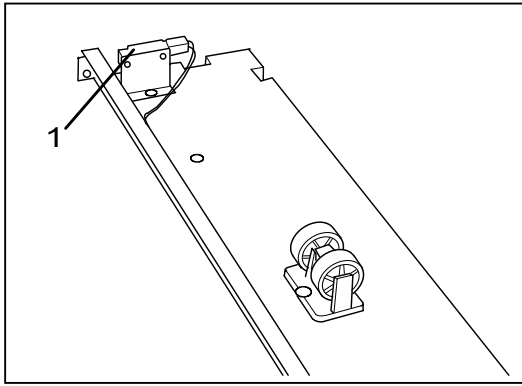


(Long Original Jam Sensor PCB)



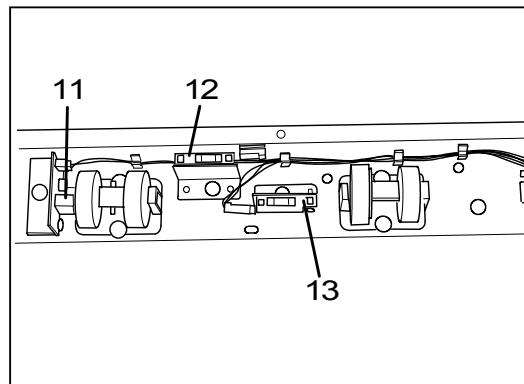
The location of each sensor is shown on the next page.

The following figures show the location of each sensor on the Front Reinforcement Plate Assembly.



1. Original Skew Sensor 1 (Left)
2. Original Jam Sensor 1
3. Original Jam Sensor 4
4. Original Size Sensor 2
5. Original Size Sensor 3
6. Original Size Sensor 4
7. Original Size Sensor 5
8. Original Size Sensor 6
9. Original Skew Sensor 2 (Right)
10. Original Size Sensor 1

The following figure shows the location of sensors on the Rear Reinforcement Plate Assembly.

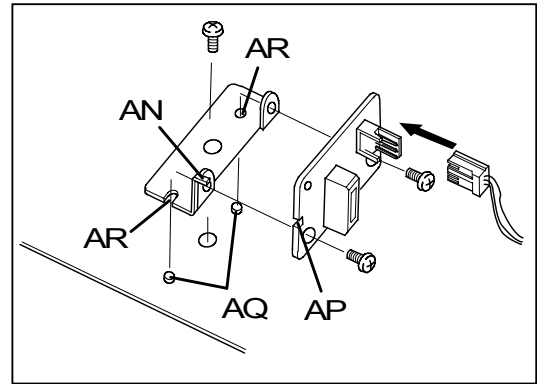
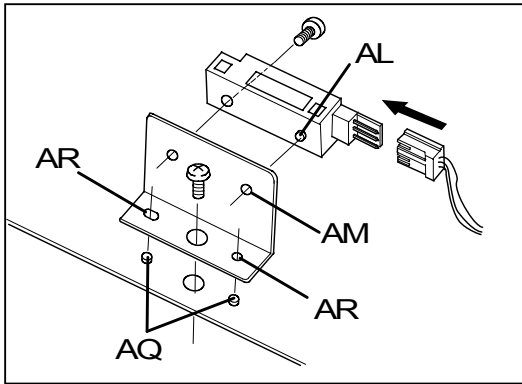


11. Long Original Jam Sensor PCB
12. Original Jam Sensor 2
13. Original Jam Sensor 3

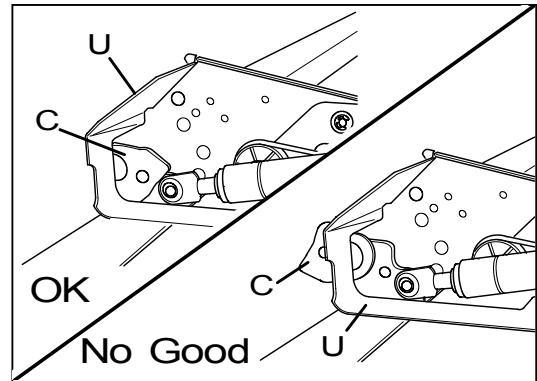
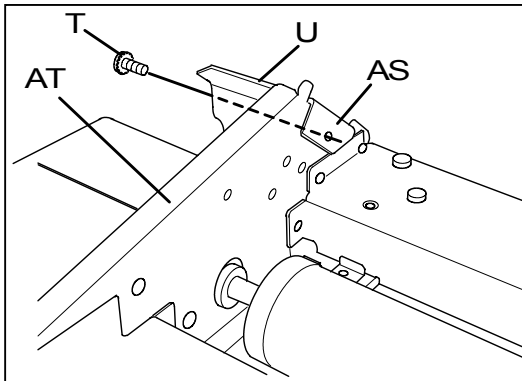
19) Install the new sensor to the machine in the reversed order taking care of the following notes.

- (a) Each Sensor has a Positioning Boss (AL).

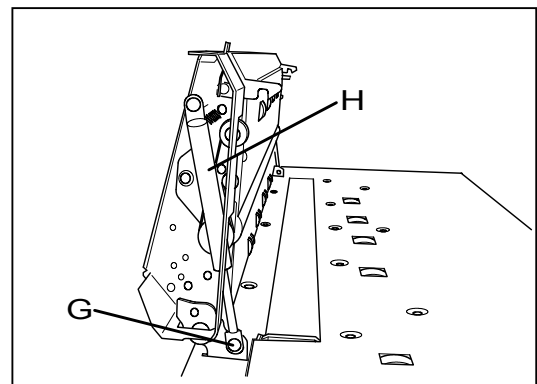
Fit it to the Positioning Hole (AM) of the Sensor Holder, then fix the sensor with the screw.  
In case of the Long Original Jam Sensor PCB, the Positioning Pin (AN) of the Jam Sensor Holder must be put into the notch (AP) of the Long Original Jam Sensor PCB.  
If you removed the Sensor Holder, fit Positioning Bosses (AQ) to Positioning Holes (AR) of the Sensor Holder.



- (b) When you put back the Damper Cover (U), place its plate (AS) inside of the side plate (AT) of the Upper Unit and insert the screw (T) from the outside as the following left figure shows.  
And place the Damper Stopper (C) inside of the Damper Cover (U).



- (c) When you put back each Gas Spring (H) with screws, do not forget to attach the Collar to the lower screw (G)

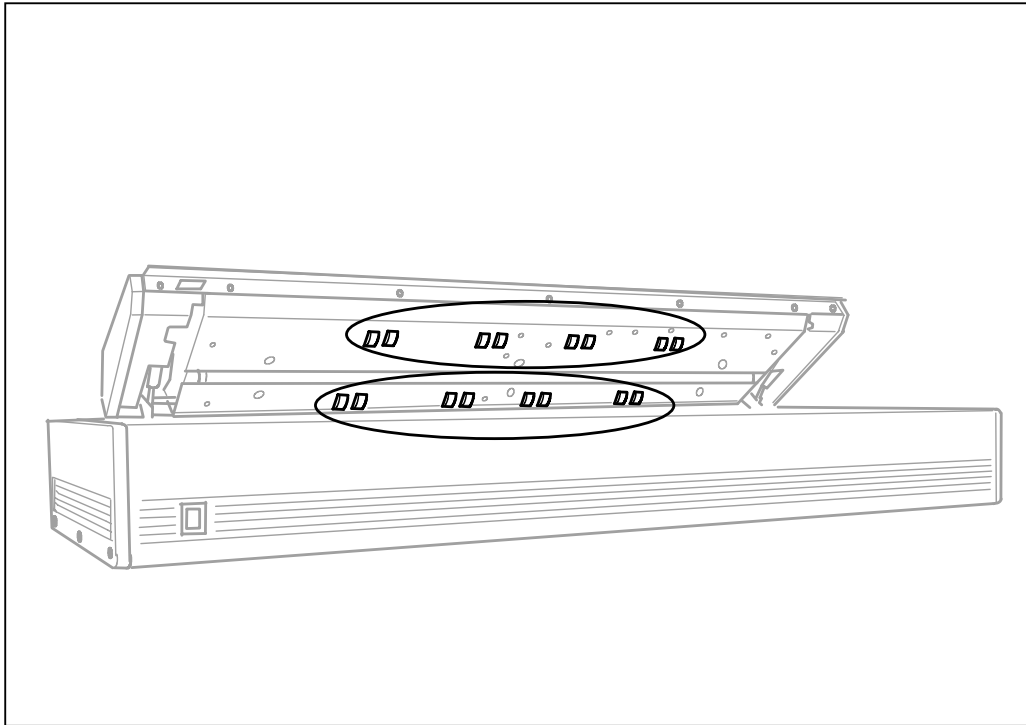


### 4.3.7 Replacing each Roller

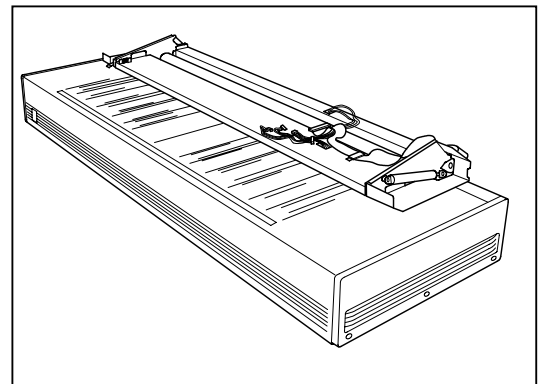
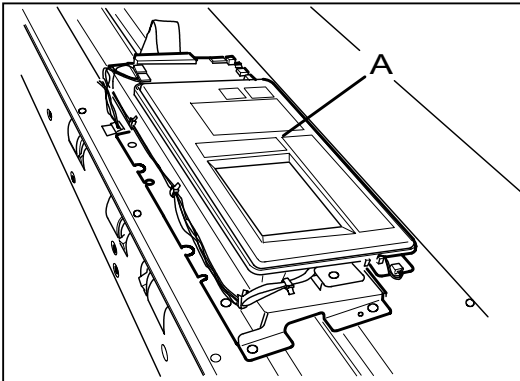


#### **WARNING**

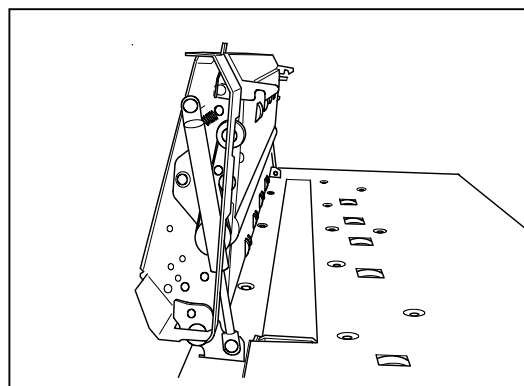
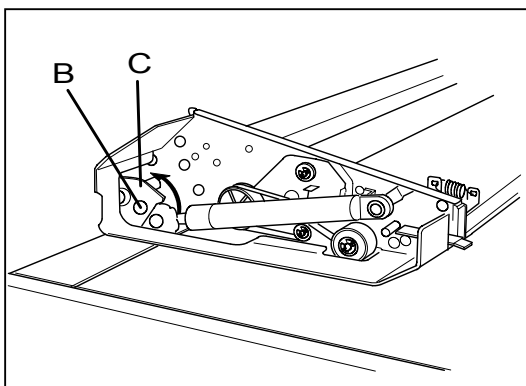
Make sure to disconnect the machine from the power source before disassembly. Otherwise, you may get an electric shock.



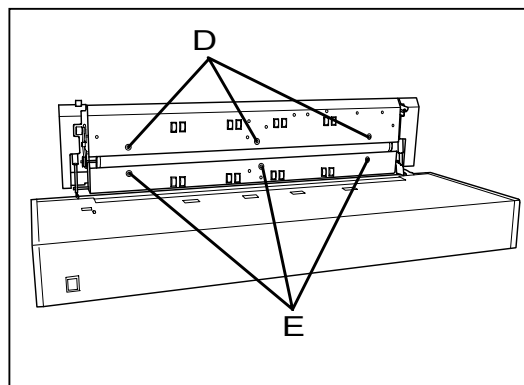
- 1) Making reference to “4.3.1 Removing the Operation Panel Unit” on the page 4-10, remove the Operation Panel Unit (A) from the Upper Unit.



- 2) Remove screws (B) at both sides, move both Damper Stoppers (C) toward the arrow mark, and then stand the Upper Unit vertically.

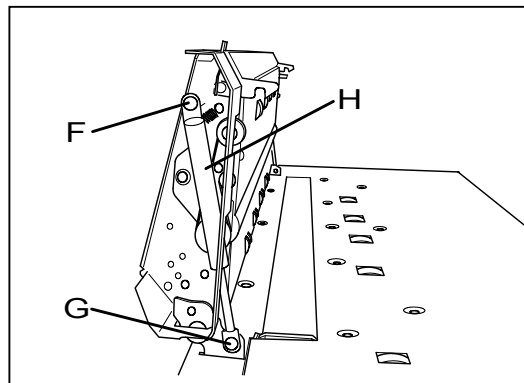


- 3) Remove 3 screws (D) and also 3 screws (E).

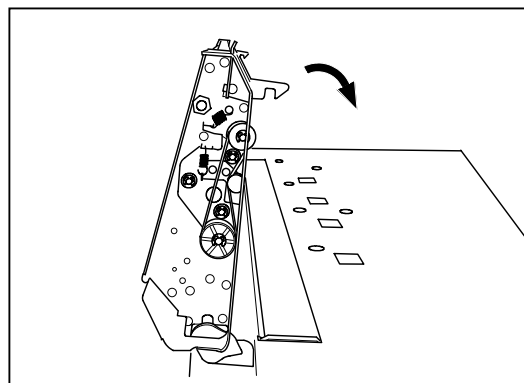


- 4) Remove both screws (F) and (G) to remove each Gas Spring (H) at both sides.  
Since the screw (G) has a Collar, do not lose it.

**Note : If you remove both Gas Springs (H), the Upper Unit will fall down.  
Therefore, remove them supporting the Upper Unit with one hand.**

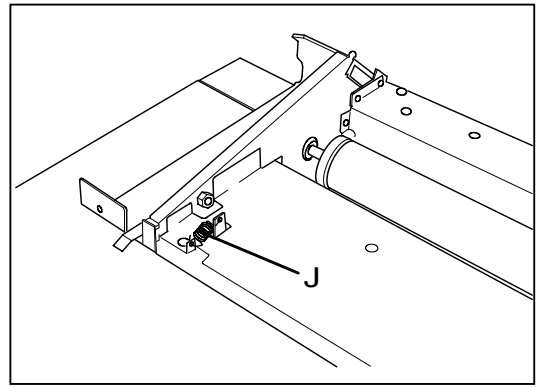


- 5) Close the Upper Unit.



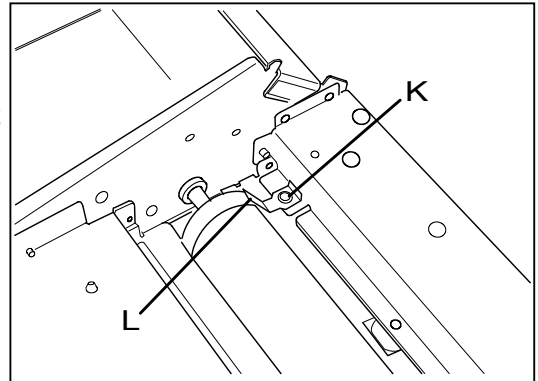
6) Remove the Tension Spring (J).

Note : When you will remove the Rear Reinforcement Plate Assembly, you do not have to remove the Tension Spring (J).

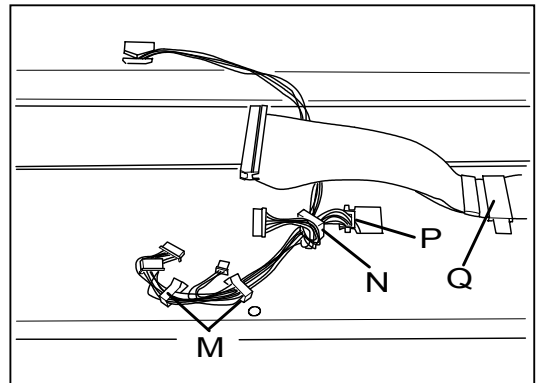


7) Remove the screw (K) to remove each Spring (L) at both sides.

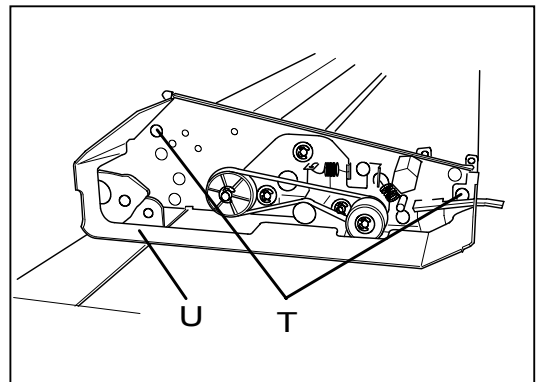
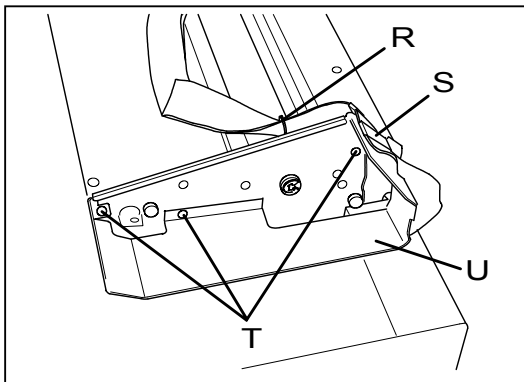
Note : When you will remove the Front Reinforcement Plate Assembly, you do not have to remove Springs (L).



8) Release the wires from Mini Clamps (M), Wire Saddle (N) and Edge Saddle (P), and also release the Flat Cable from the Block Core Wire Clamp (Q).

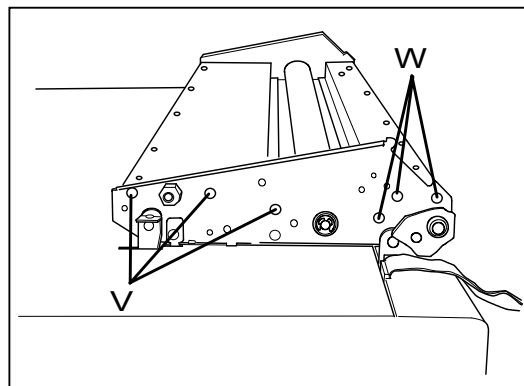
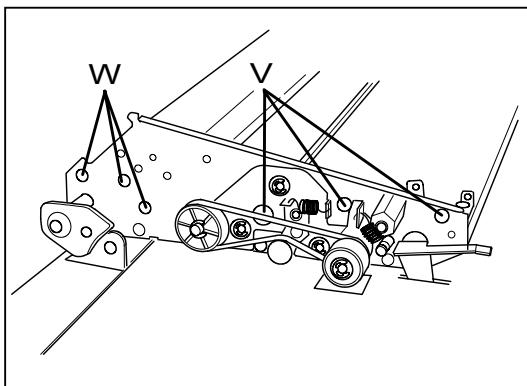


9) Release the Flat Cable from Cable Clip (R) and Flat Cable Clamp (S). Remove 5 screws (T) to remove Damper Covers (U) at both sides.

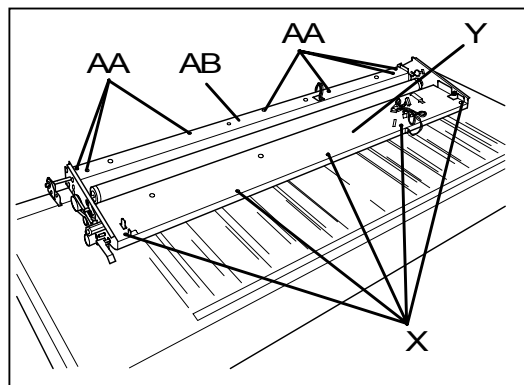




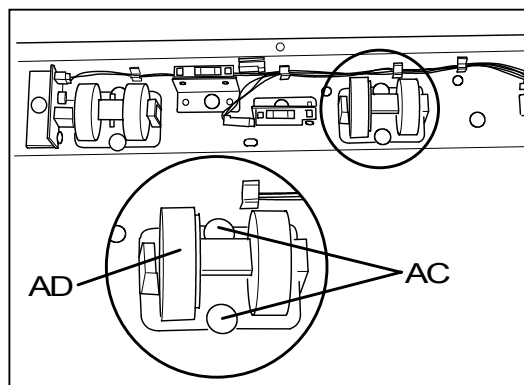
- 10) Remove 6 screws (V : 3 pieces on one side).  
Remove 6 screws (W : 3 pieces on one side).



- 11) Remove 5 screws (X) to remove the Front Reinforcement Plate Assembly (Y).  
Remove 7 screws (AA) to remove the Rear Reinforcement Plate Assembly (AB).

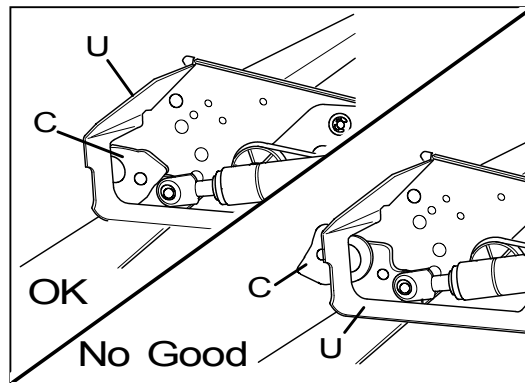
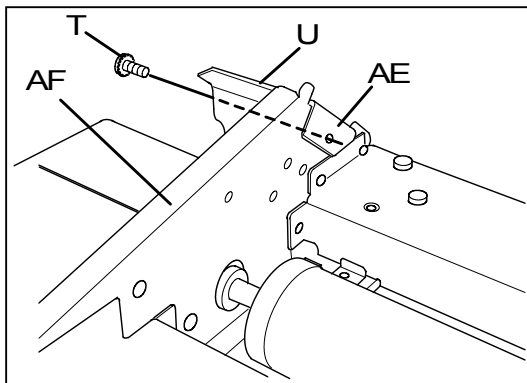


- 12) Remove screws (AC) to remove each Roller (AD).

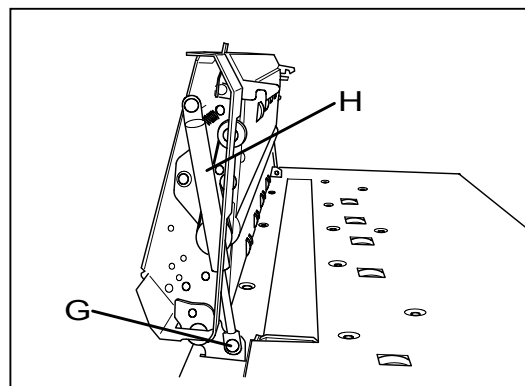


13) Install the new Roller to the machine in the reversed order taking care of the following notes.

- (a) When you put back the Damper Cover (U), place its plate (AE) inside of the side plate (AF) of the Upper Unit and fix it with the screw (T) from the outside as the following left figure shows. And place the Damper Stopper (C) inside of the Damper Cover (U).



- (b) When you put back each Gas Spring (H) with screws, do not forget to attach the Collar to the lower screw (G)



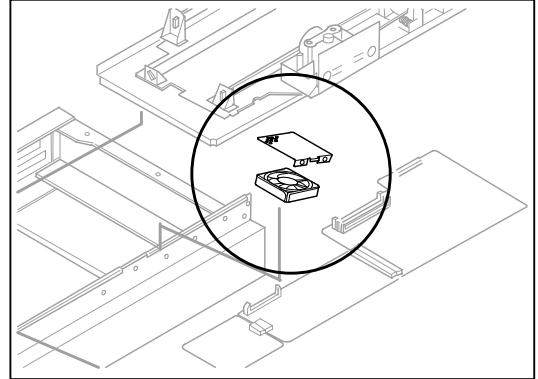
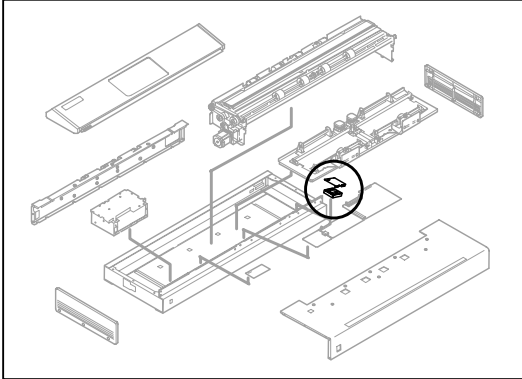
## 4.4 Base Unit

### 4.4.1 Replacing the DC Fan Motor (FM3 : For cooling the Image Processor PCB)

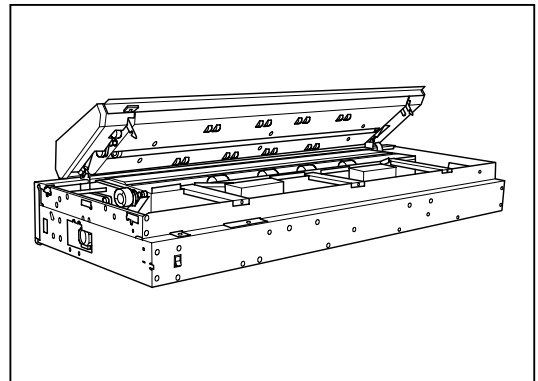
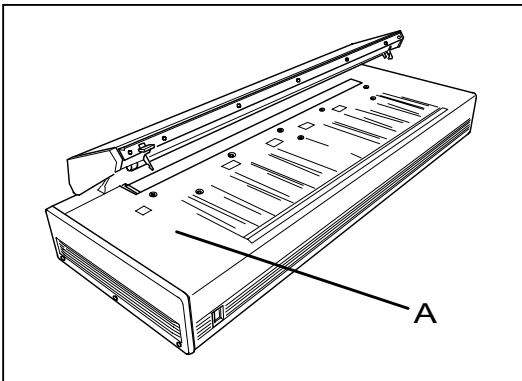


#### WARNING

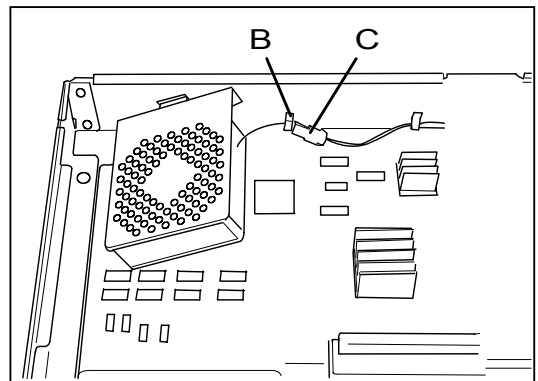
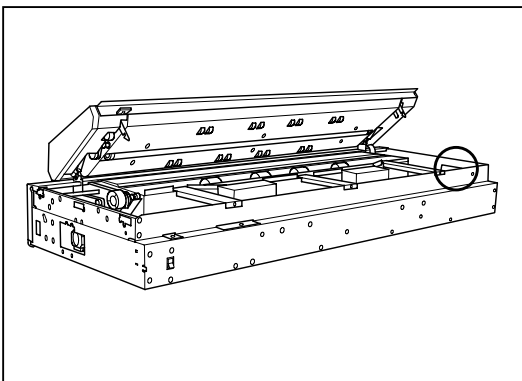
Make sure to disconnect the machine from the power source before disassembly. Otherwise, you may get an electric shock.



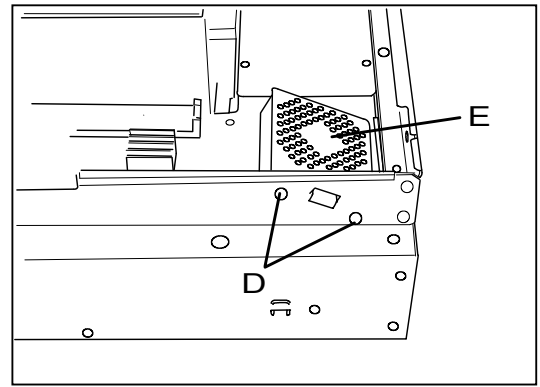
- 1) Making reference to “4.2.2 Removing the Original Table” on the page 4-4, remove the Original Table (A) from the Base Unit.



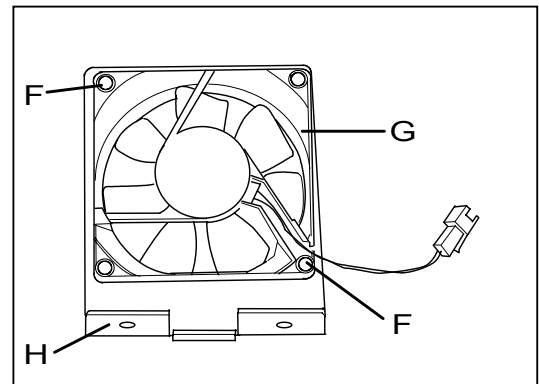
- 2) Release the wire from the Mini Clamp (B), and then disconnect the connector (C).



- 3) Remove 2 screws (D) to remove the DC Fan Motor Assembly (E).

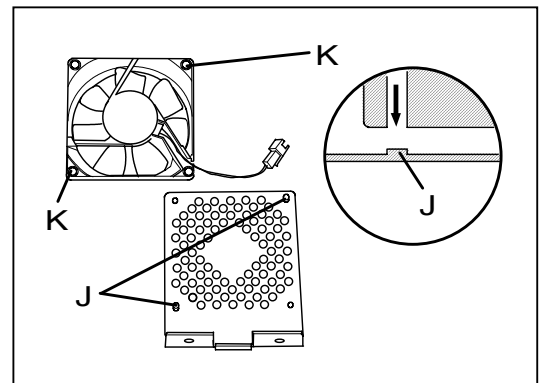


- 4) Remove 2 screws (F) to remove the DC Fan Motor (G) from the Fan Bracket (H).



- 5) Install the new DC Fan Motor to the machine in the reversed order taking care of the following note.

There are Positioning Bosses (J) on the Fan Bracket.  
Fit Positioning Holes (K) of the DC Fan Motor firmly to these bosses, and then fix the DC Fan Motor tightening screws.

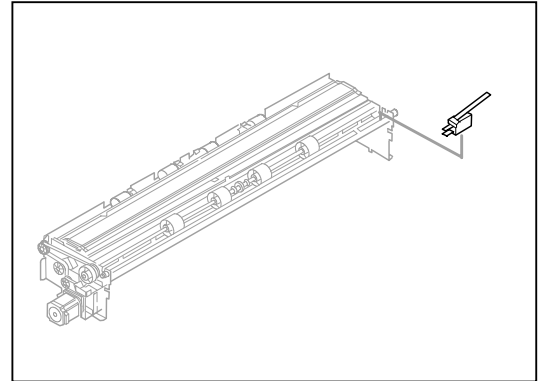
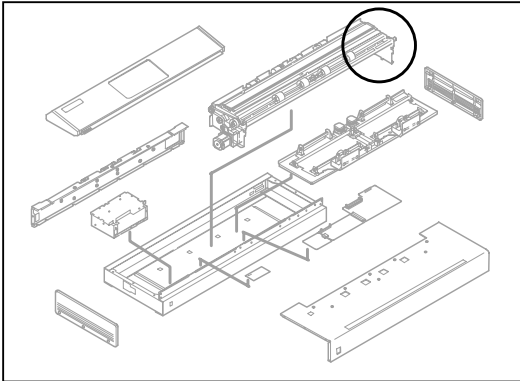


#### 4.4.2 Replacing the Micro Switch (Upper Unit Open/Close Sensor)

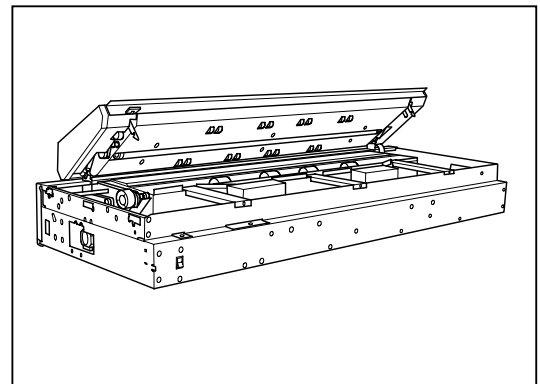
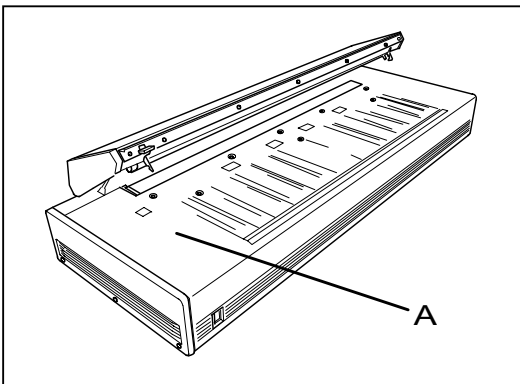


#### WARNING

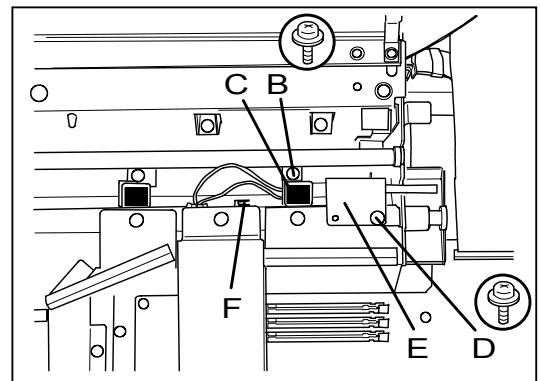
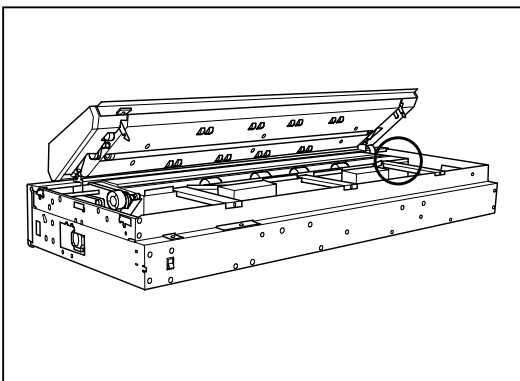
Make sure to disconnect the machine from the power source before disassembly. Otherwise, you may get an electric shock.



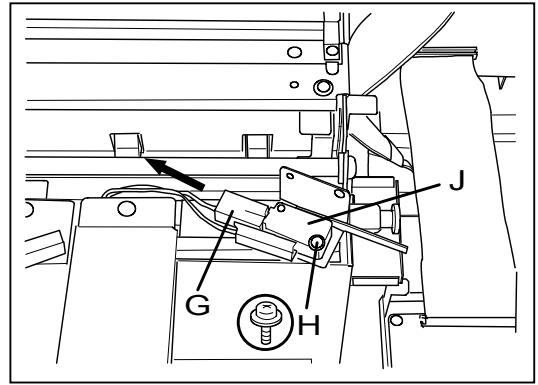
- 1) Making reference to “4.2.2 Removing the Original Table” on the page 4-4, remove the Original Table (A) from the Base Unit.



- 2) Remove the screw (B) to remove the Black Sheet Bracket Assembly (C).  
Remove the screw (D) to remove the Micro Switch Assembly (E).  
Release the wire from the Mini Clamp (F).



- 3) Disconnect the connector (G) pulling toward the arrow mark.  
Remove the screw (H) to remove the Micro Switch (J).



- 4) Install the new Micro Switch to the machine in the reversed order.

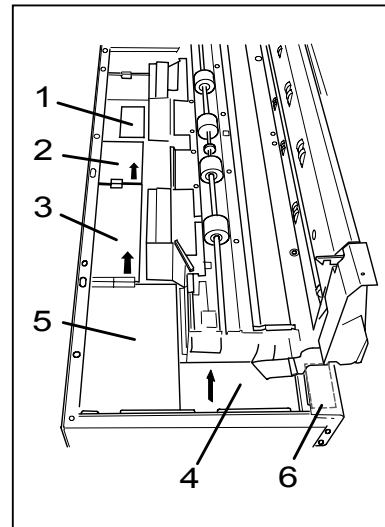
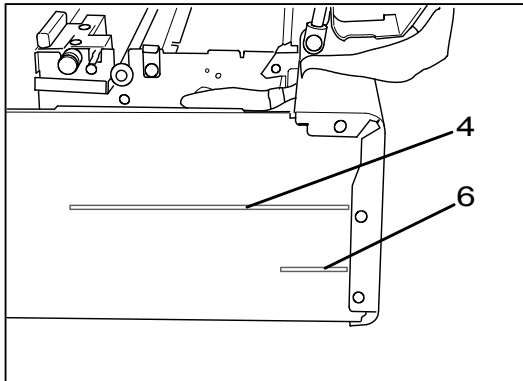
### 4.4.3 Replacing Printed Circuit Boards in the Base Unit



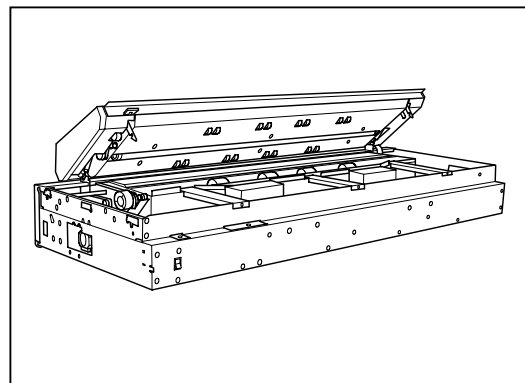
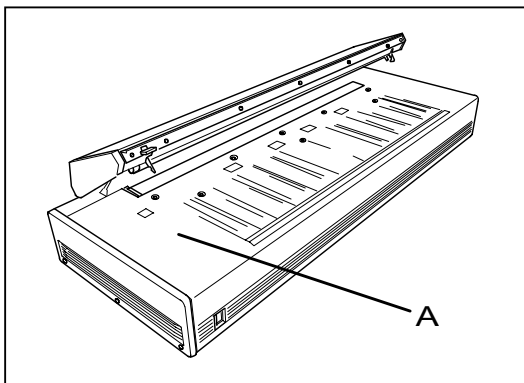
#### WARNING

Make sure to disconnect the machine from the power source before disassembly. Otherwise, you may get an electric shock.

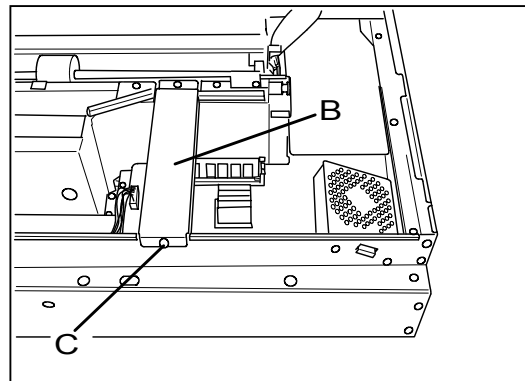
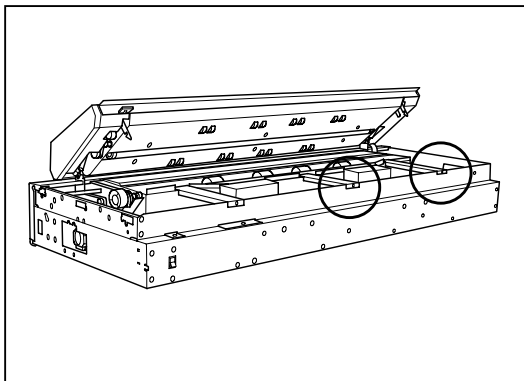
1. Power Terminal PCB
2. Driver PCB
3. CPU PCB
4. SCSI PCB (Option)
5. Image Processor PCB
6. Connector Terminal PCB



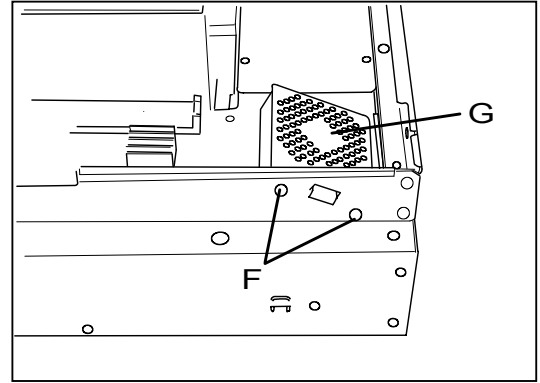
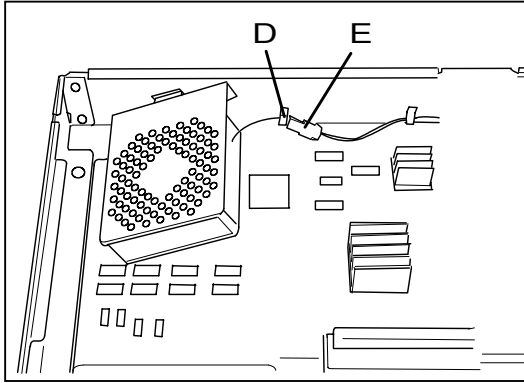
- 1) Making reference to "4.2.2 Removing the Original Table" on the page 4-4, remove the Original Table (A) from the Base Unit.



- 2) Remove 2 pieces of Reinforcement Plate (B) removing the screw (C) for each one.

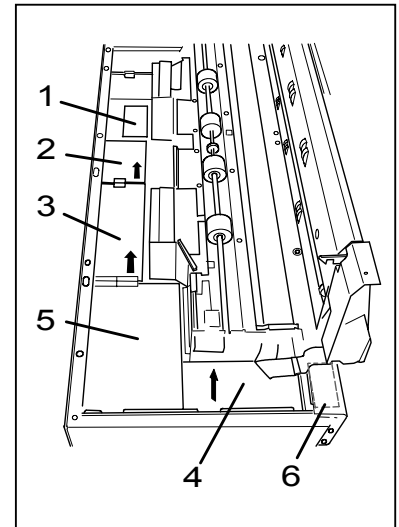


- 3) There is a DC Fan Motor at the right front of the Base Unit.  
Release its wire from the Mini Clamp (D), disconnect the connector (E), and then remove 2 screws (F) to remove the DC Fan Motor (G).



- 4) Remove each board in the way mentioned on and after the next page.  
Printed Circuit Boards are located in the Base Unit as the right figure.

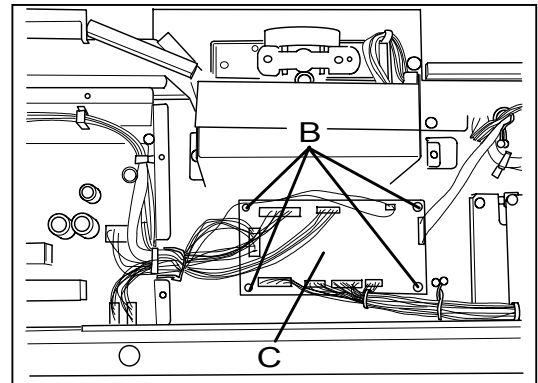
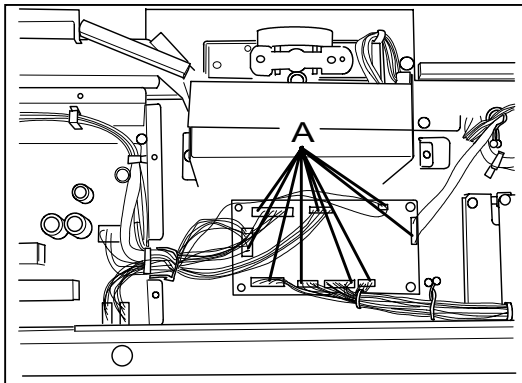
1. Power Terminal PCB (Page 4-45.)
2. Driver PCB (Page 4-45)
3. CPU PCB (Page 4-46)
4. SCSI PCB (Option) (Page 4-46)
5. Image Processor PCB (Page 4-47)
6. Connector Terminal PCB (Page 4-47)





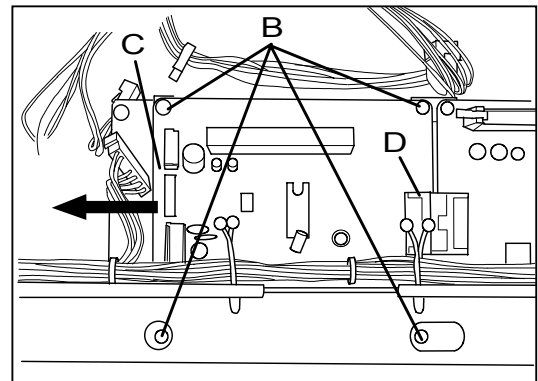
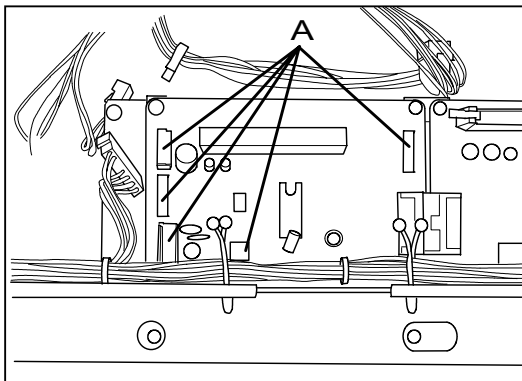
## 1. Power Terminal PCB

- (1) Disconnect 9 connectors (A).
- (2) Remove 4 screws (B) to remove the Power Terminal PCB (C).



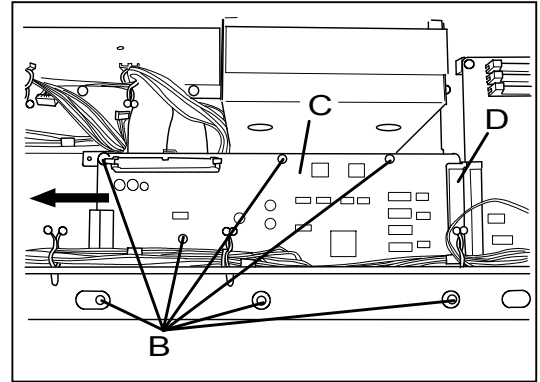
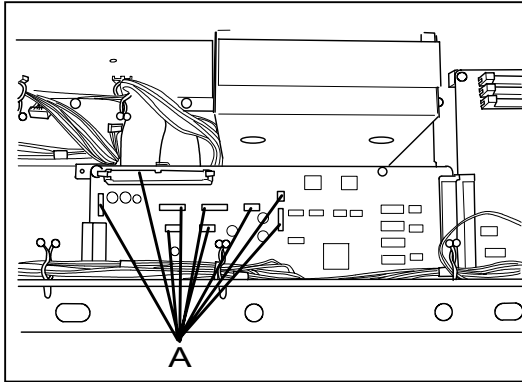
## 2. Driver PCB

- (1) Disconnect 5 connectors (A).
- (2) Remove 4 screws (B), and then pull the Driver PCB (C) carefully toward the arrow mark to disconnect the joint (D) from the CPU PCB.



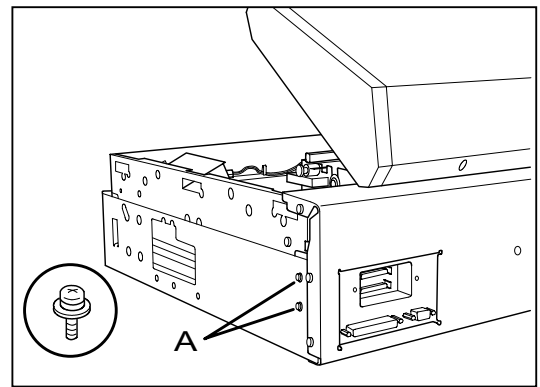
### 3. CPU PCB

- (1) Make sure to remove the Driver PCB before removing the CPU PCB.
- (2) Disconnect 9 connectors (A).
- (3) Remove 7 screws (B), and then pull the CPU PCB (C) carefully toward the arrow mark to disconnect the joint (D) from the Image Processor PCB.

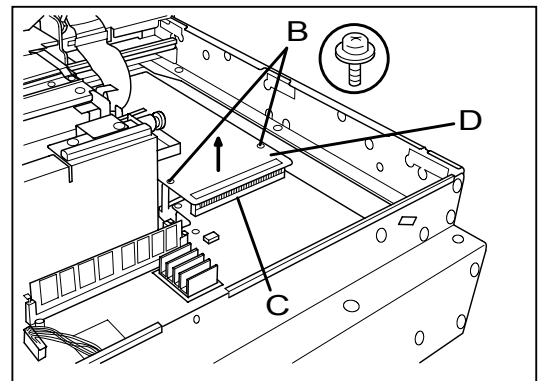


### 4. SCSI PCB (Option)

- (1) Remove 2 screws (A) which are outside of the scanner.

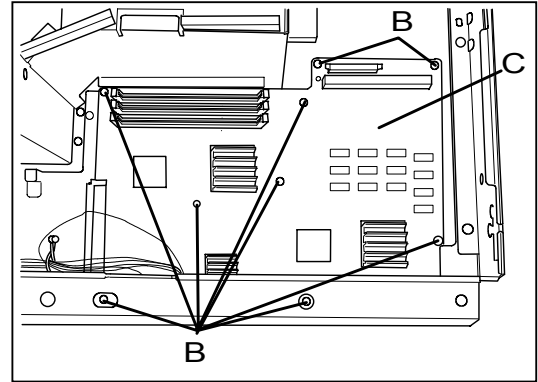
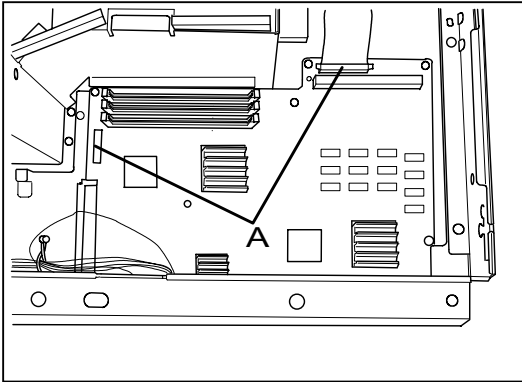


- (2) Remove 2 screws (B), disconnect the joint (C) bringing up the SCSI PCB (D), and then remove the SCSI PCB.



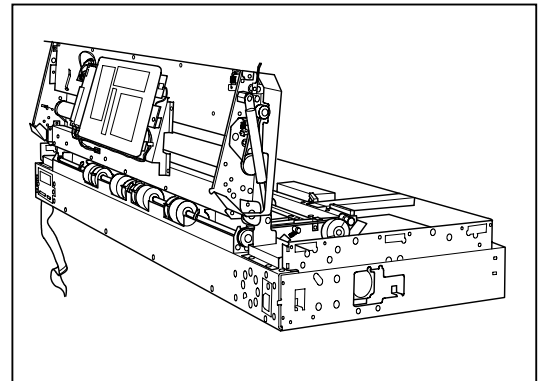
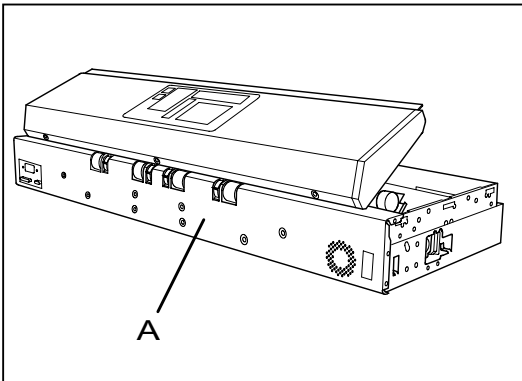
## 5. Image Processor PCB

- (1) Make sure to remove Driver PCB, CPU PCB and SCSI PCB before removing the Image Processor PCB.
- (2) Disconnect 2 connectors (A).
- (3) Remove 9 screws (B) to remove the Image Processor PCB (C).

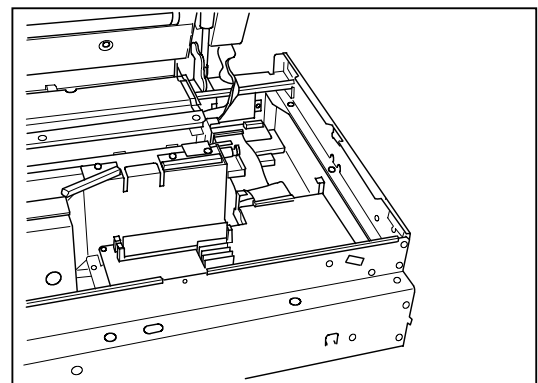
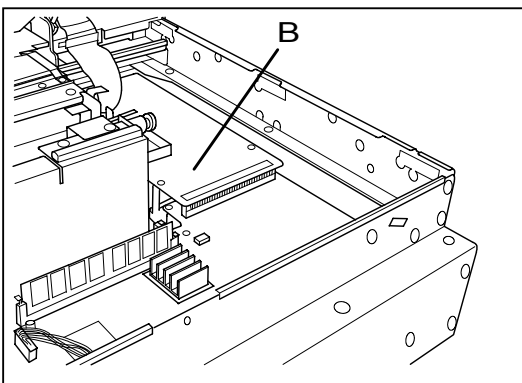


## 6. Connector Terminal PCB

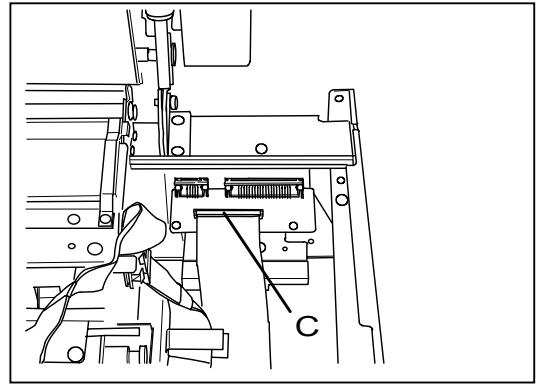
- (1) Making reference to “4.2.3 Removing the Rear Cover” on the page 4-6, remove the Rear Cover (A).



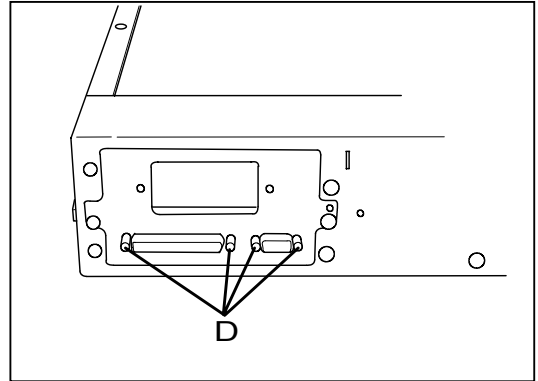
- (2) If there is the SCSI PCB (B) in the Base Unit, remove it.



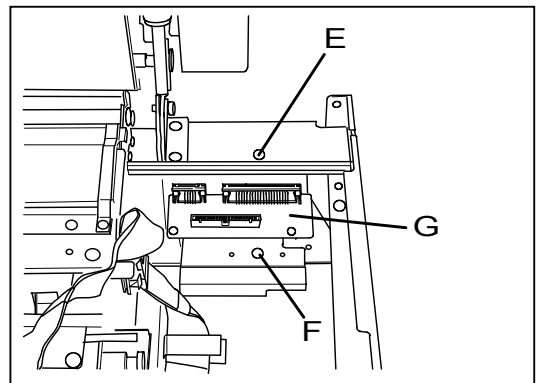
(3) Disconnect the connector (C).



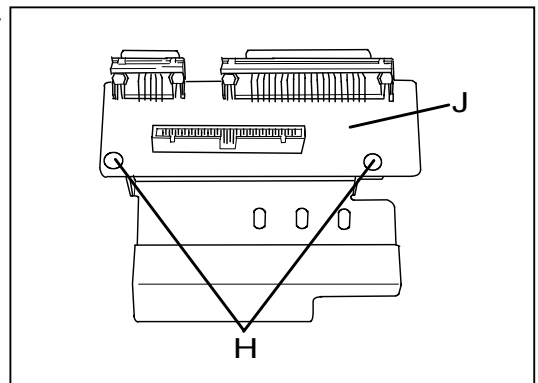
(4) Remove 4 pieces of Nut (D).



(5) Inserting a long screwdriver to the hole (E), remove the screw (F) to remove the Connector Terminal PCB Assembly (G).



(6) Remove 2 screws (H) to remove the Connector Terminal PCB (J).

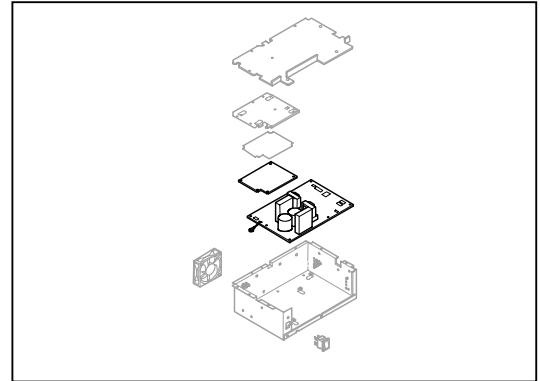
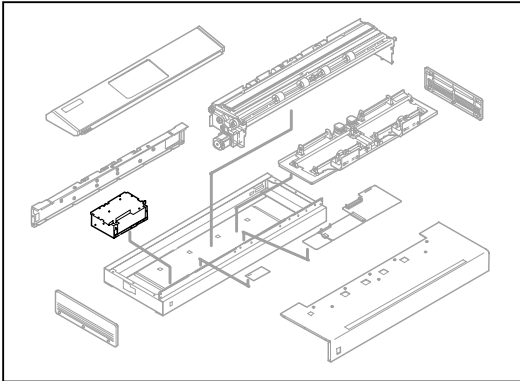


#### 4.4.4 Replacing Power Supply PCB and Sub Power Supply PCB

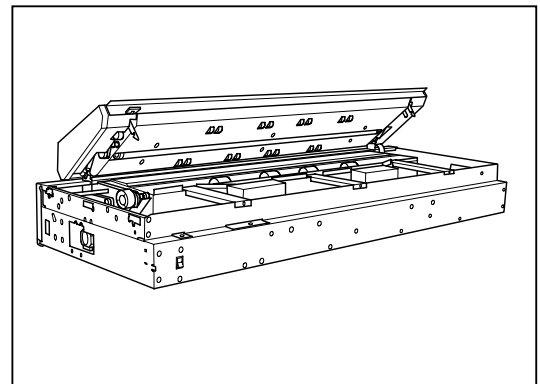
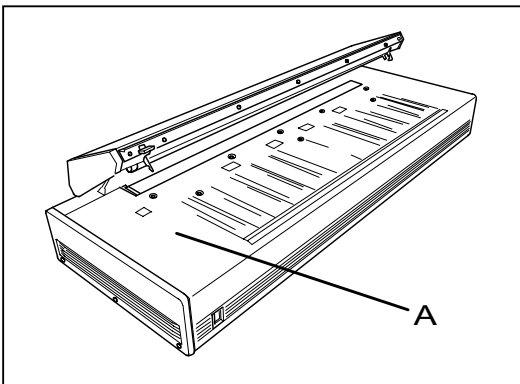


##### **WARNING**

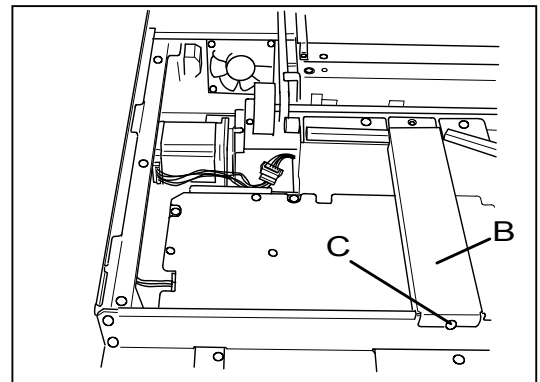
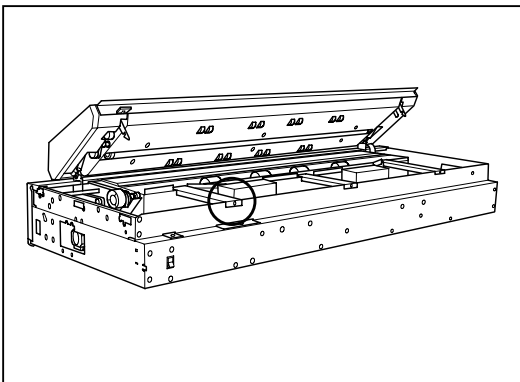
Make sure to disconnect the machine from the power source before disassembly. Otherwise, you may get an electric shock.



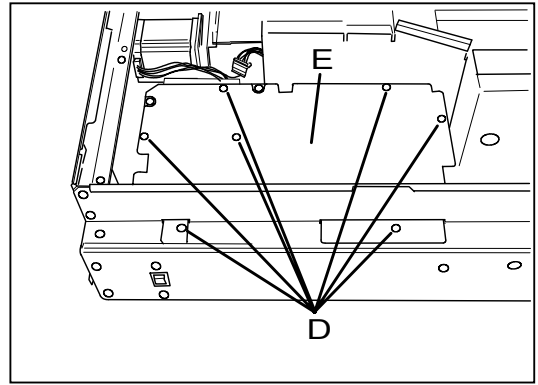
- 1) Making reference to “4.2.2 Removing the Original Table” on the page 4-4, remove the Original Table (A) from the Base Unit.



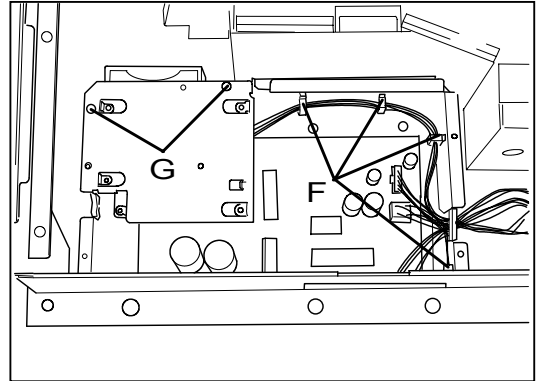
- 2) Remove only the left one of 3 pieces of Reinforcement Plate (B) removing the screw (C).



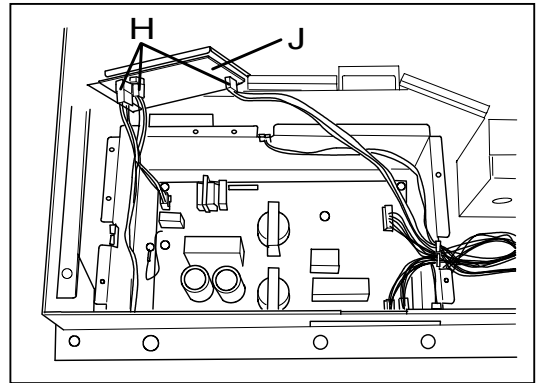
- 3) Remove 7 screws (D) to take off the Power Supply Box Cover (E).



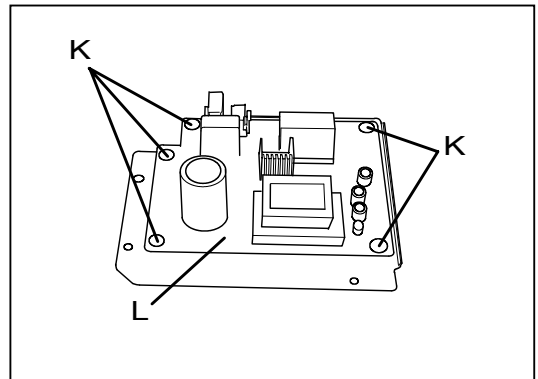
- 4) Open 4 pieces of Wire Saddle (F) to release the wires.  
Then, remove 2 screws (G).



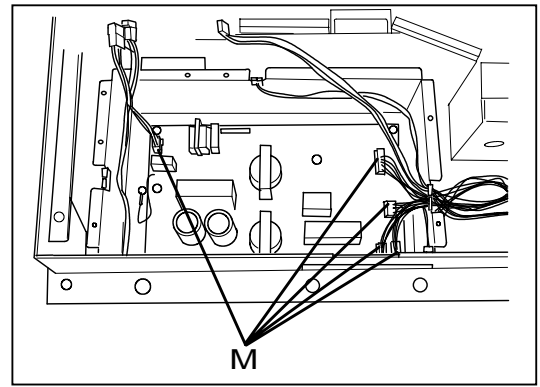
- 5) Disconnect 3 connectors (H) to remove the Sub Power Supply PCB Assembly (J).



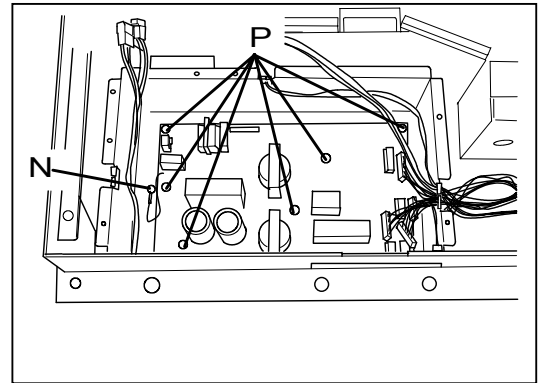
- 6) Remove 5 screws (K) from the removed Sub Power Supply PCB Assembly to remove the Sub Power Supply PCB (L).



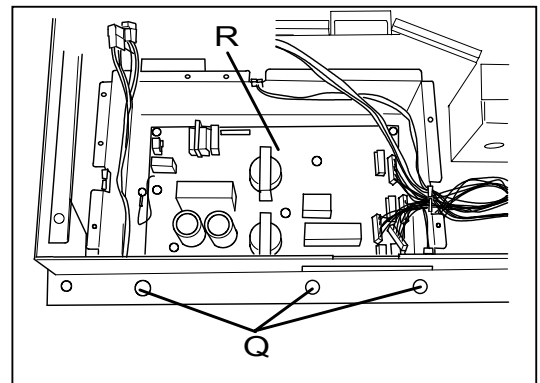
7) Disconnect 5 connectors (M).



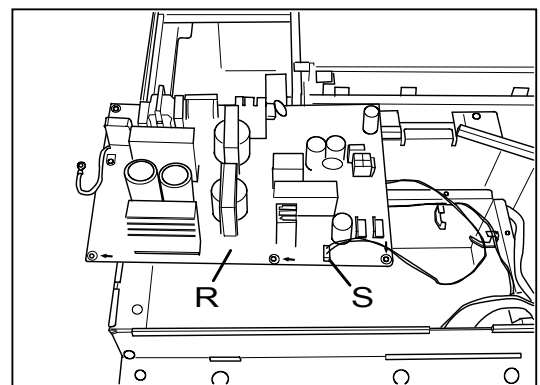
8) Remove one screw (N) to make the grounding wire free.  
Remove 6 screws (P) also.



9) Inserting a long screwdriver to the holes (Q),  
remove 3 more screws which fix the Power Supply  
PCB (R).

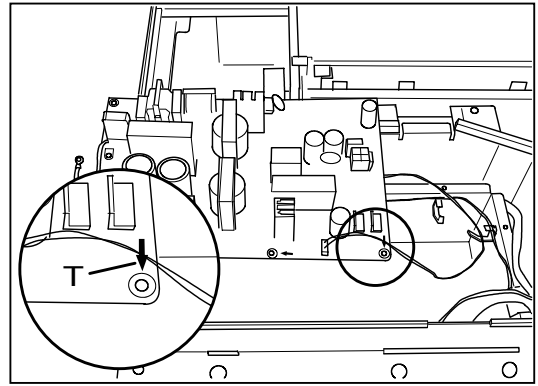


10) Take out the Power Supply PCB (R), and finally  
disconnect the connector (S).



- 11) Install new Power Supply PCB and Sub Power Supply PCB to the machine in the reversed order taking care of the following note.

There are arrow marks (T) near screw holes of the Power Supply PCB.  
Make sure to put screws into these holes when you install the new Power Supply PCB.



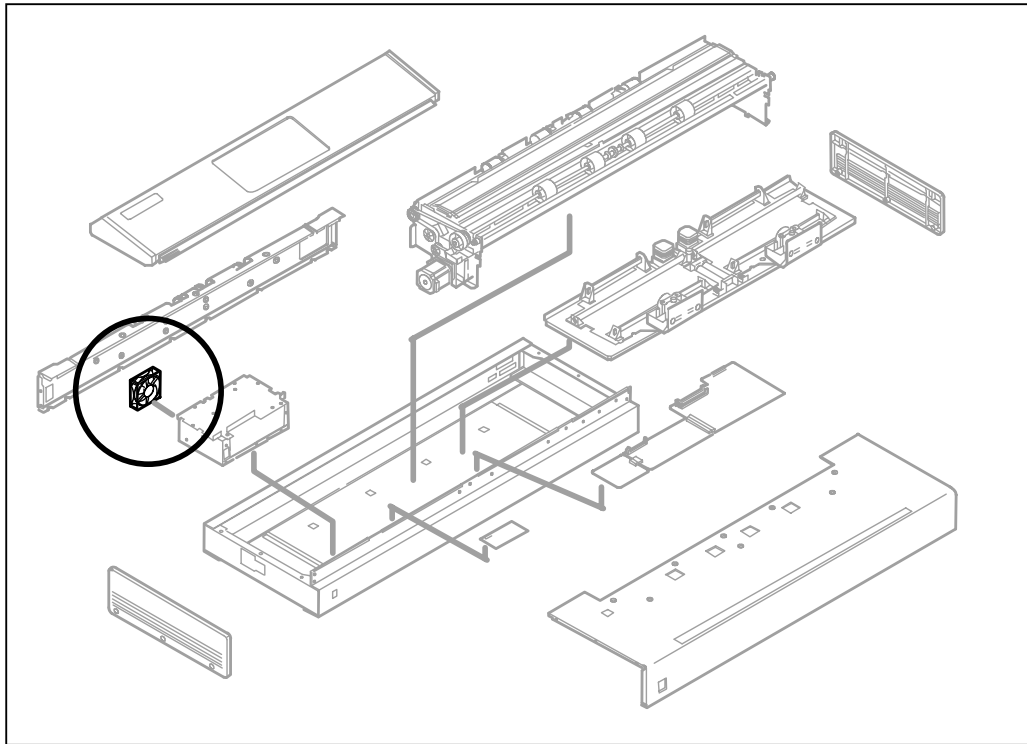


#### 4.4.5 Replacing the DC Fan Motor (For cooling the Power Supply PCB)

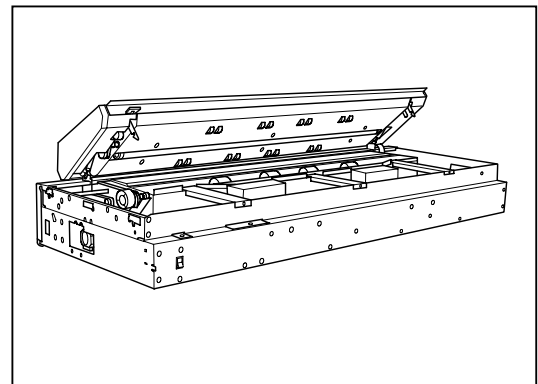
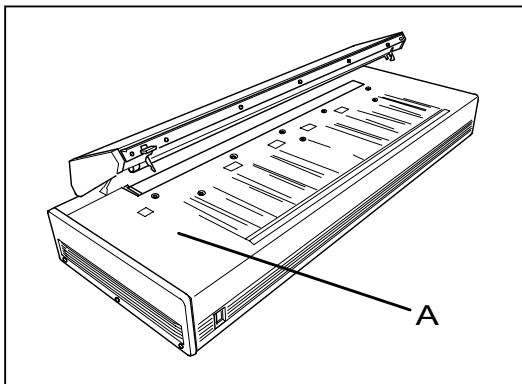


##### **WARNING**

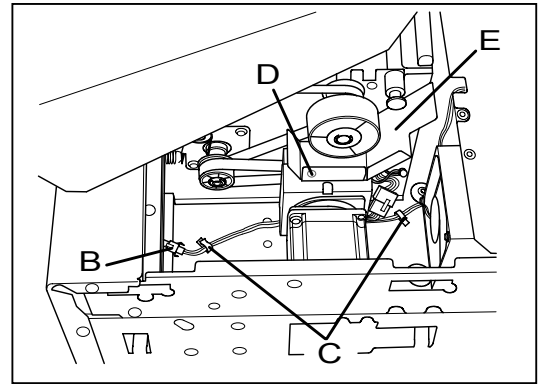
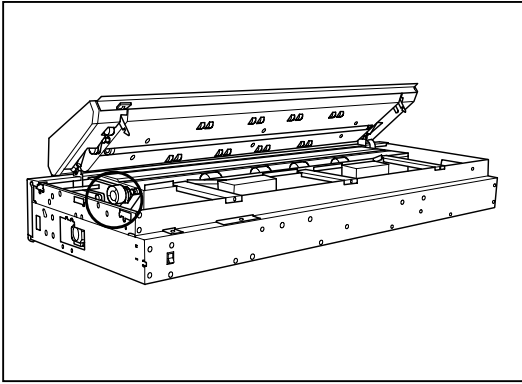
Make sure to disconnect the machine from the power source before disassembly. Otherwise, you may get an electric shock.



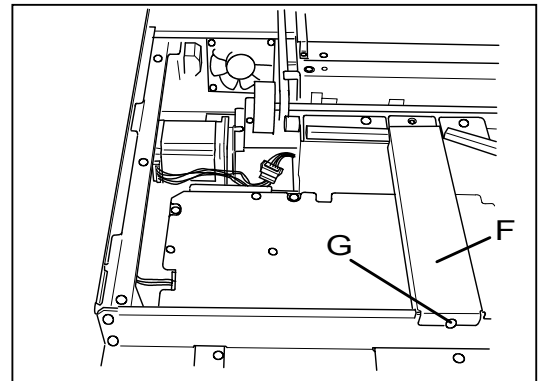
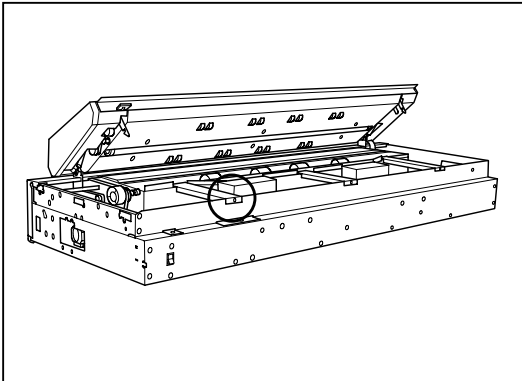
- 1) Making reference to “4.2.2 Removing the Original Table” on the page 4-4, remove the Original Table (A) from the Base Unit.



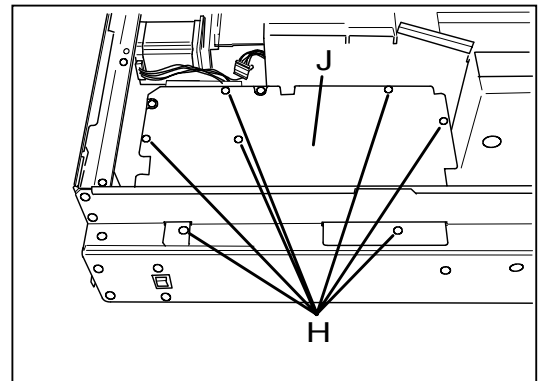
- 2) Disconnect the connector (B), and release the wire of it from 2 pieces of Mini Clamp (C).  
Remove one screw (D) to remove the Tray 1 (E).



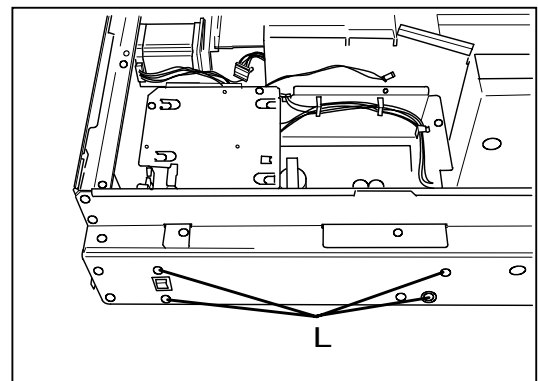
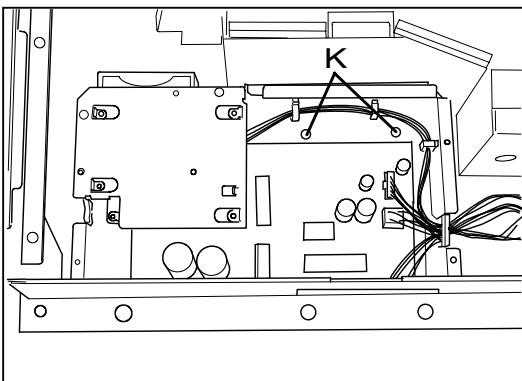
- 3) Remove only the left one of 3 pieces of Reinforcement Plate (F) removing the screw (G).



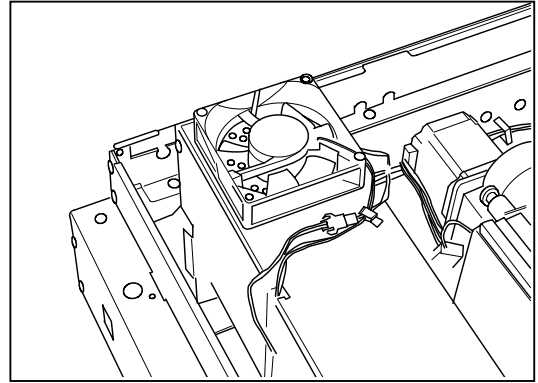
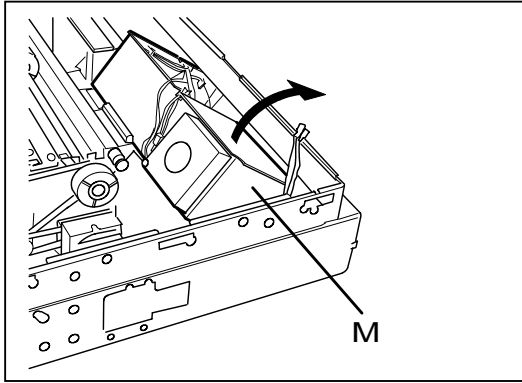
- 4) Remove 7 screws (H) to remove the Power Supply Box Cover (J).



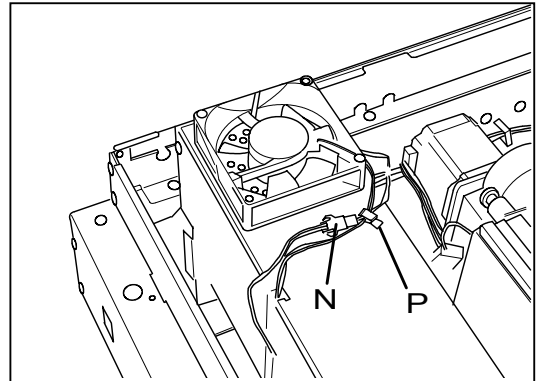
- 5) Remove 2 screws (K) inside of the Power Supply Box and 4 screws (L) outside.



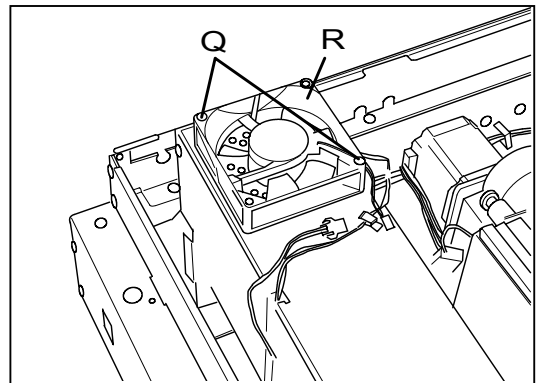
- 6) Stand the Power Supply Box (M) vertically as the following figure.  
It may be difficult to stand the box since there is not enough space around it.  
Please keep the box parallel with the machine as far as possible when you stand it.



- 7) Disconnect the connector (N), and then release the wire from the Mini Clamp (P).



- 8) Remove 2 screws (Q) to remove the DC Fan Motor (R).



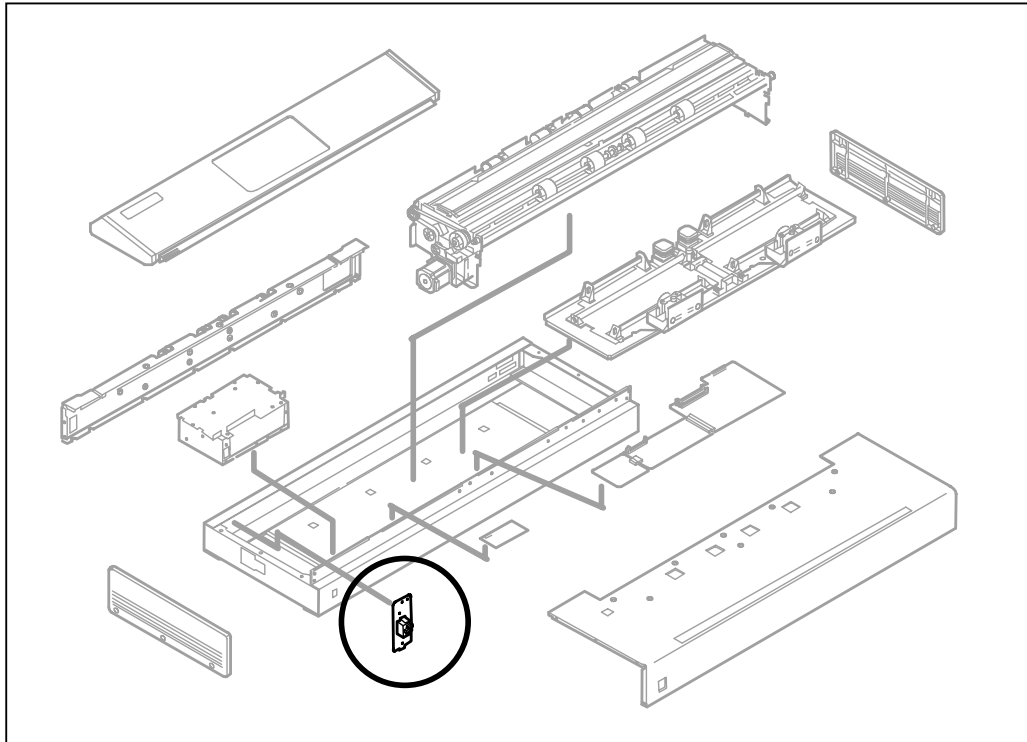
- 9) Install the new DC Fan Motor to the machine in the reversed order.

#### 4.4.6 Replacing the Inlet

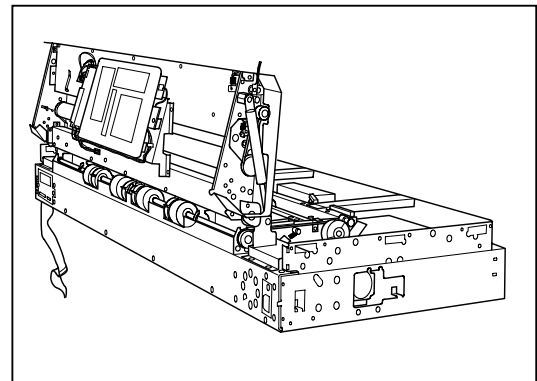
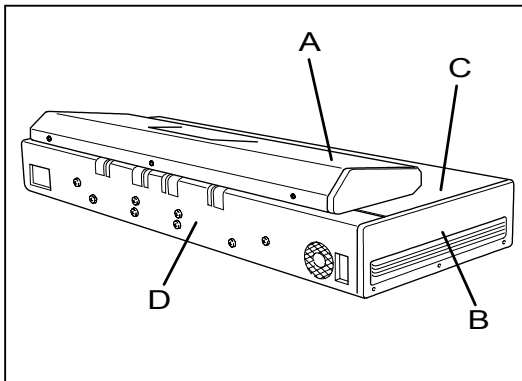


#### WARNING

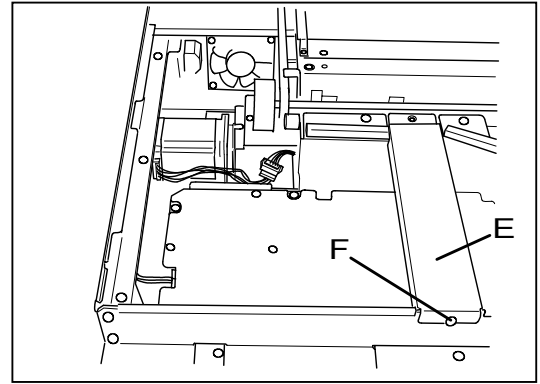
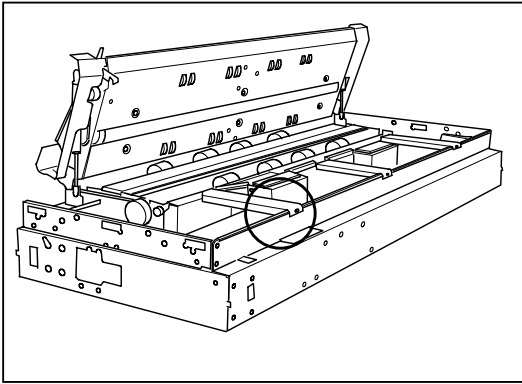
Make sure to disconnect the machine from the power source before disassembly. Otherwise, you may get an electric shock.



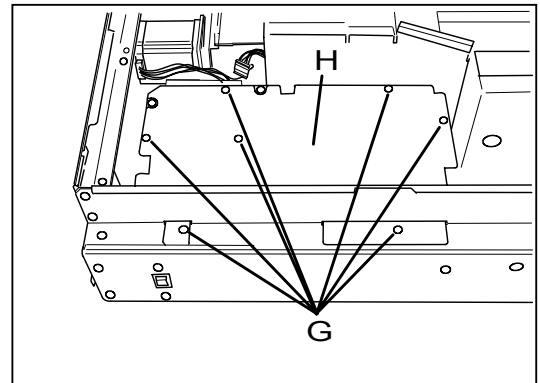
- 1) Making reference to “4.1 Outer Covers” (On pages from 4-2 to 4-9), take off all of Top Cover (A), Side Covers (B), Original Table (C) and Rear Cover (D).



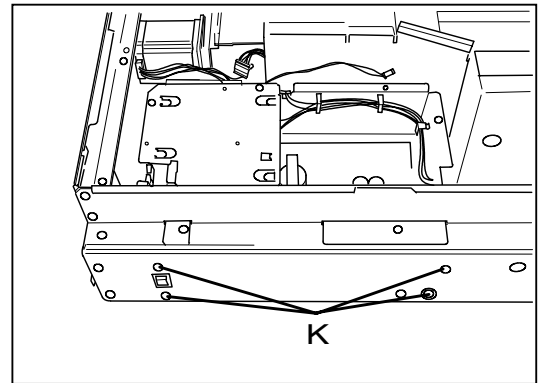
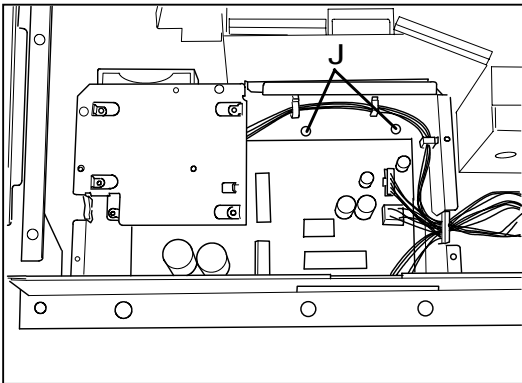
2) Remove only the left one of 3 pieces of Reinforcement Plate (E) removing the screw (F).



3) Remove 7 screws (G) to remove the Power Supply Box Cover (H).



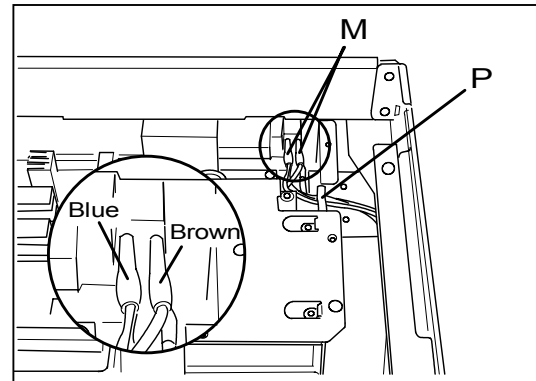
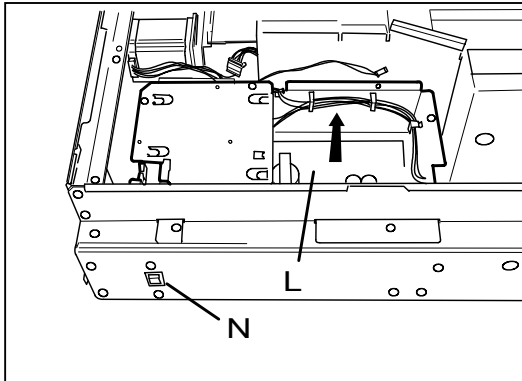
4) Remove 2 screws (J) inside of the Power Supply Box and 4 screws (K) outside.



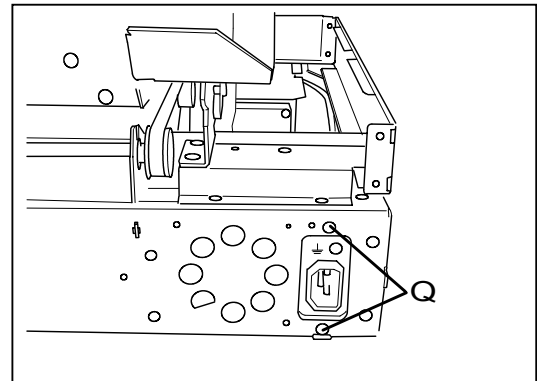
- 5) Slide the whole Power Supply Box (L) toward the arrow mark to make it easy to disconnect the Fasten Tab.

Disconnect upper 2 pieces of Fasten Tab (M) from the Power Switch (N), and then release blue cable and brown one from the Edge Saddle (P).

**Note : Blue cable should be left side, and the brown one should be right side.**

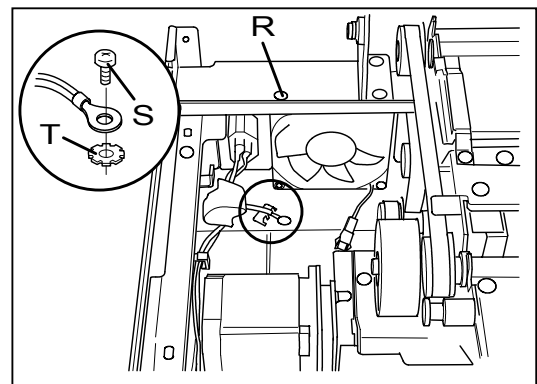


- 6) Remove 2 screws (Q) at the rear side of the scanner.

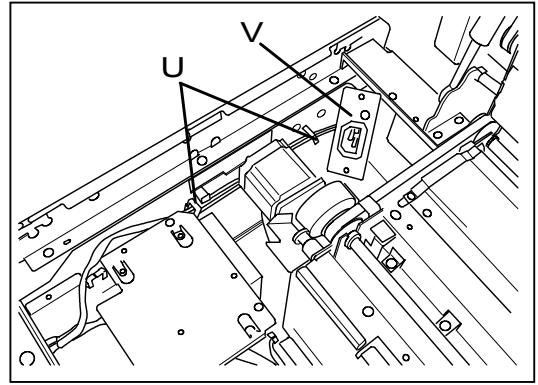


- 7) Inserting a long screwdriver to the hole (R), remove the screw (S) to make the grounding wire free.

**Note :** The screw (S) has a Star Washer (T).  
Do not lose the washer, and also do not forget to put it back when reassemble.  
Both screw (S) and Star Washer (T) are non-magnetic type.

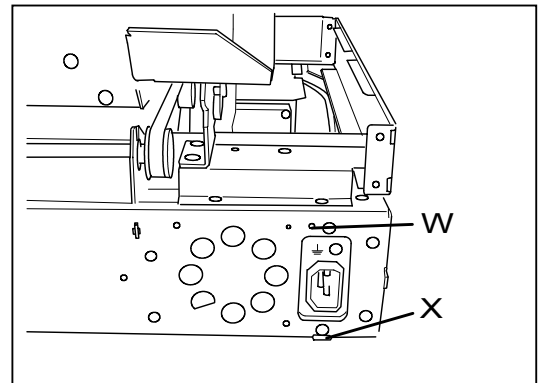


- 8) Release the wire from 2 pieces of Wire Saddle (U), and finally remove the Inlet (V).



- 9) Install the new Inlet to the machine in the reversed order taking care of the following note.

The Inlet has Positioning Boss (W) and Positioning Plate (X).  
Make sure to fit them to Positioning Hole and Positioning Slit on Base Unit side.

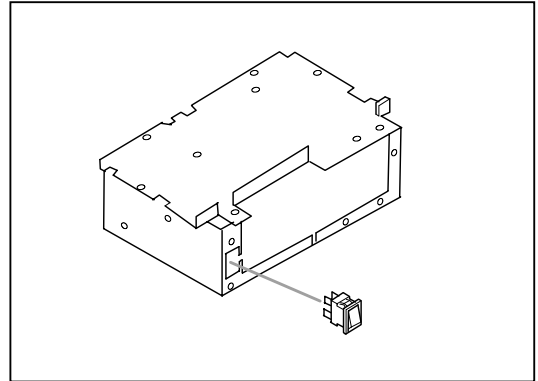
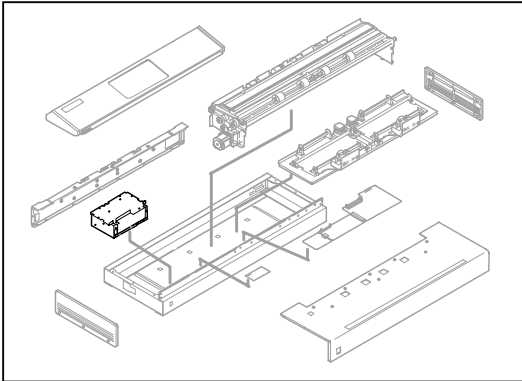


#### 4.4.7 Replacing the Power Switch

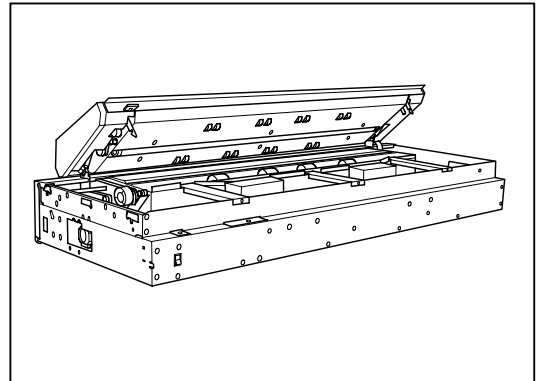
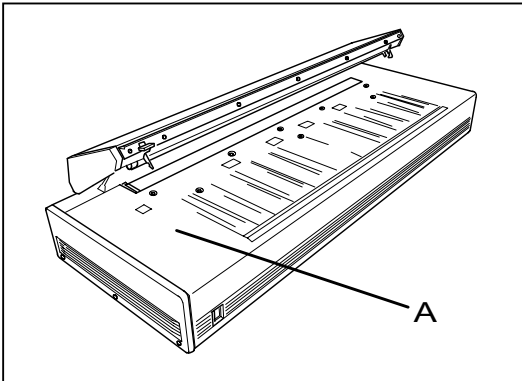


#### WARNING

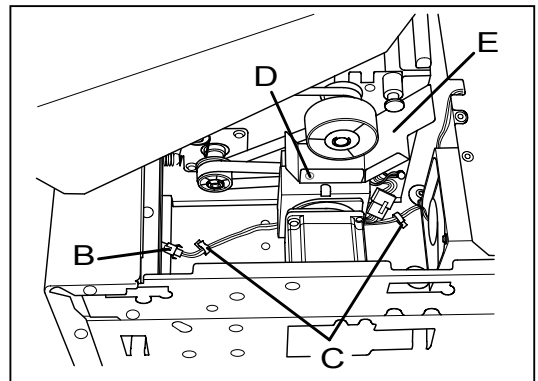
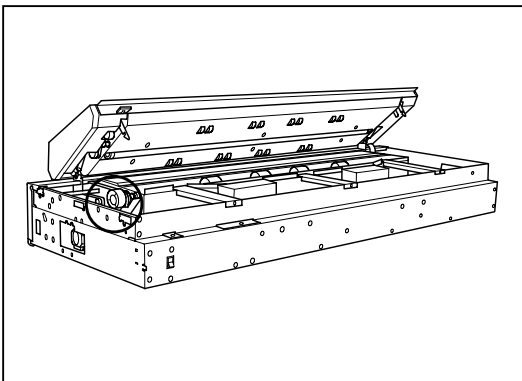
Make sure to disconnect the machine from the power source before disassembly. Otherwise, you may get an electric shock.



- 1) Making reference to “4.2.2 Removing the Original Table” on the page 4-4, remove the Original Table (A) from the Base Unit.

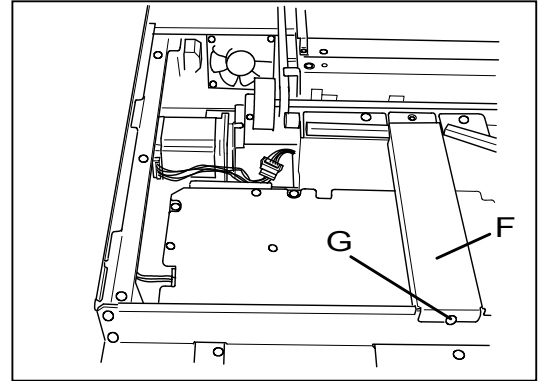
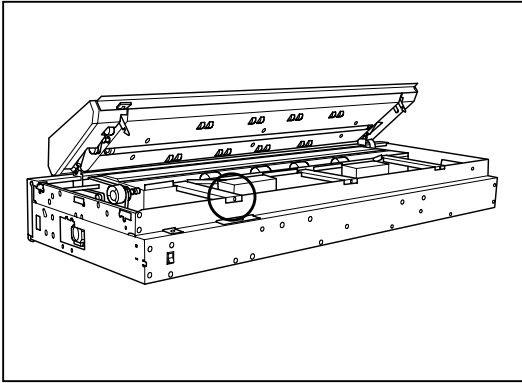


- 2) Disconnect the connector (B), and release the wire of it from 2 pieces of Mini Clamp (C). Remove one screw (D) to remove the Tray 1 (E).

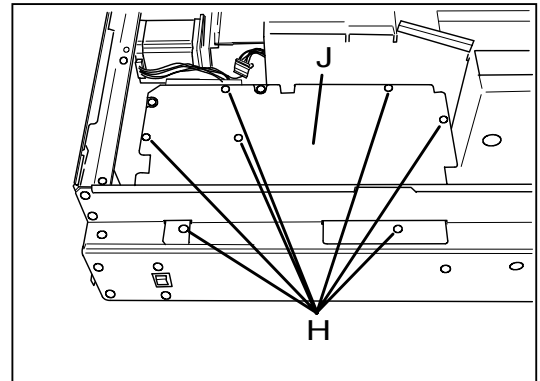




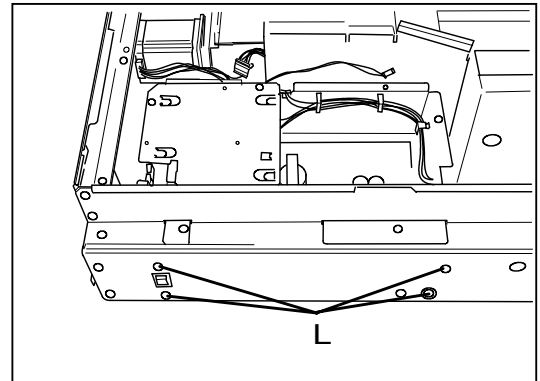
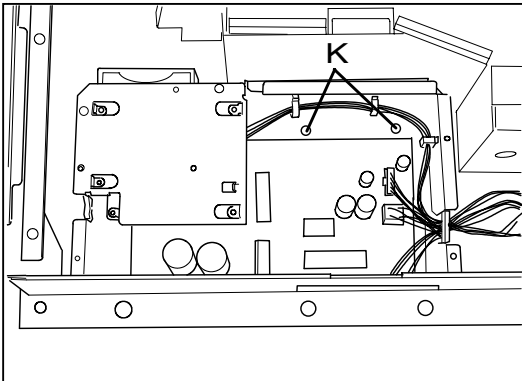
- 3) Remove only the left one of 3 pieces of Reinforcement Plate (F) removing the screw (G).



- 4) Remove 7 screws (H) to remove the Power Supply Box Cover (J).



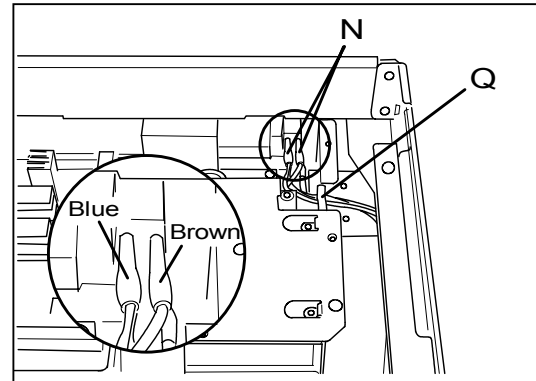
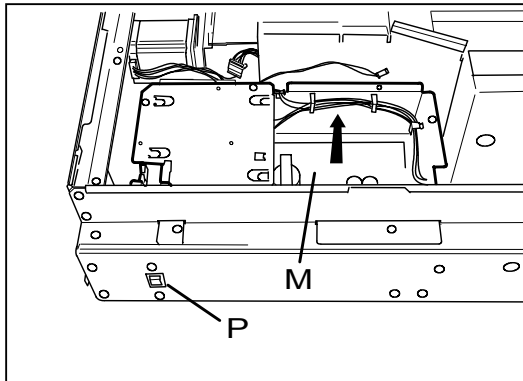
- 5) Remove 2 screws (K) inside of the Power Supply Box and 4 screws (L) outside.



- 6) Slide the whole Power Supply Box (M) toward the arrow mark to make it easy to disconnect the Fasten Tab.

Disconnect upper 2 pieces of Fasten Tab (N) from the Power Switch (P), and then release blue cable and brown one from the Edge Saddle (Q).

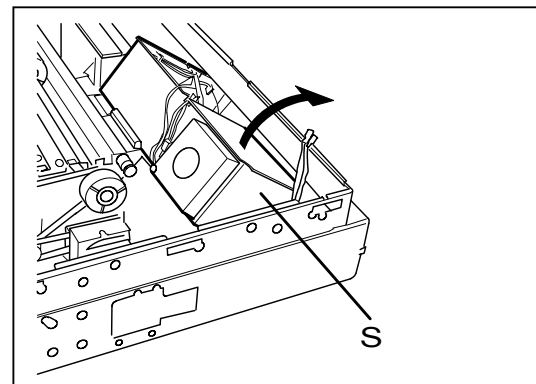
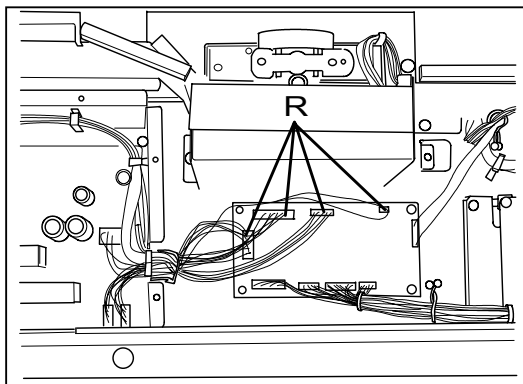
**Note : Blue cable should be left side, and the brown one should be right side.**



- 7) Disconnect 4 connectors (R) from the Power Terminal PCB, and then remove the whole Power Supply Box (S).

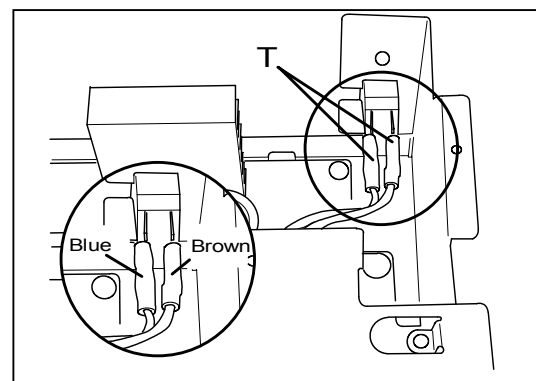
It may be difficult to remove the box since there is not enough space around it.

Please keep the box parallel with the machine as far as possible when you remove it.

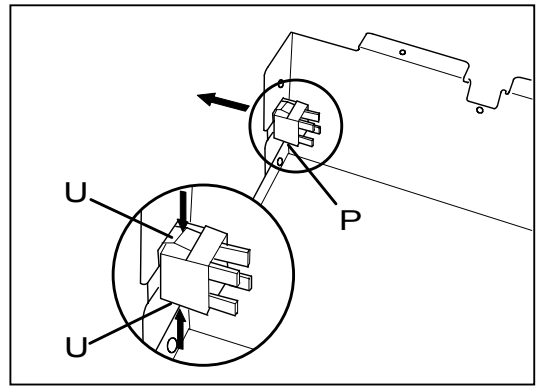


- 8) Disconnect lower 2 pieces of Fasten Tab (T).

**Note : Blue cable should be left side, and the brown one should be right side.**

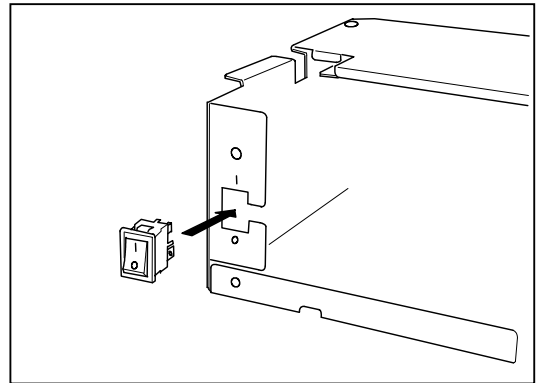


- 9) Pressing stoppers (U) inward, remove the Power Switch (P) from the Power Supply Box.



- 10) Install the new Power Switch to the machine in the reversed order taking care of the following note.

There are marks “I” and “O” on the Power Switch.  
“I” must be upside and “O” must be downside.

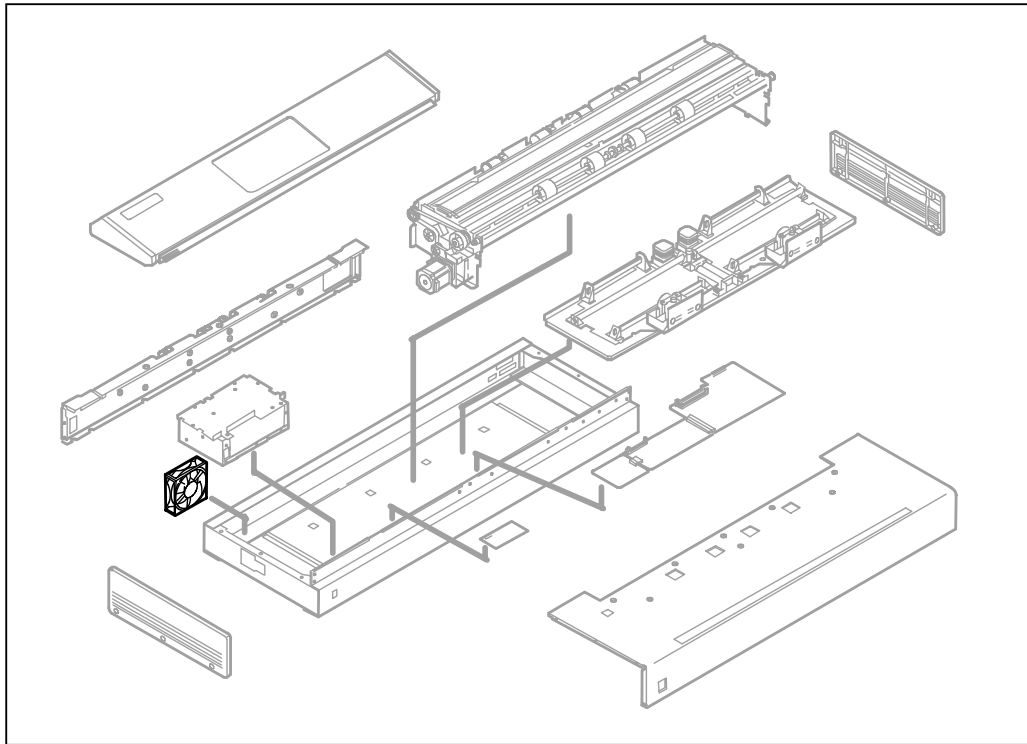


#### 4.4.8 Replacing the DC Fan Motor (For exhaustion)

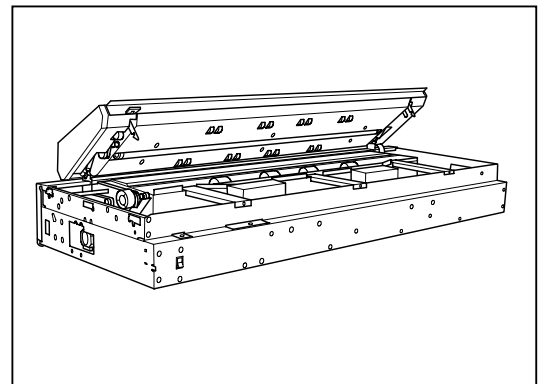
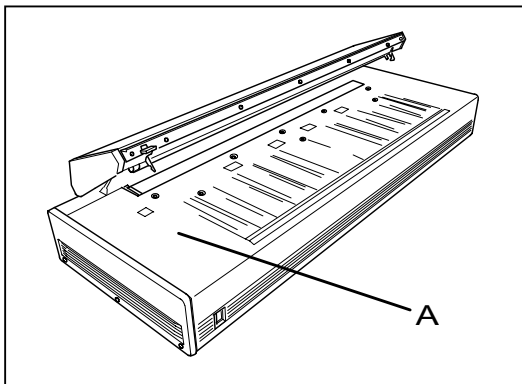


#### **WARNING**

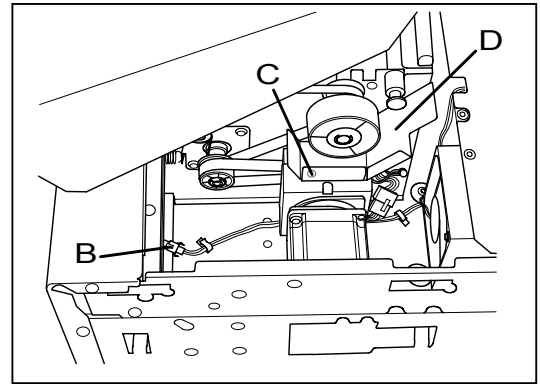
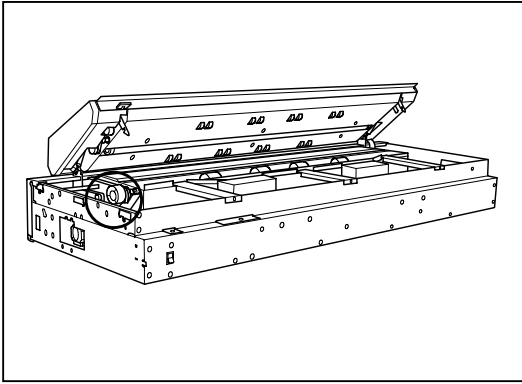
Make sure to disconnect the machine from the power source before disassembly. Otherwise, you may get an electric shock.



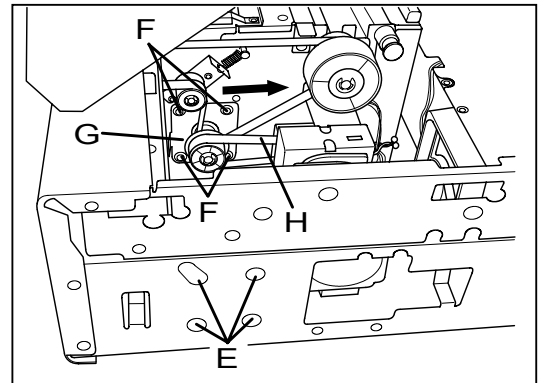
- 1) Making reference to “4.2.2 Removing the Original Table” on the page 4-4, remove the Original Table (A) from the Base Unit.



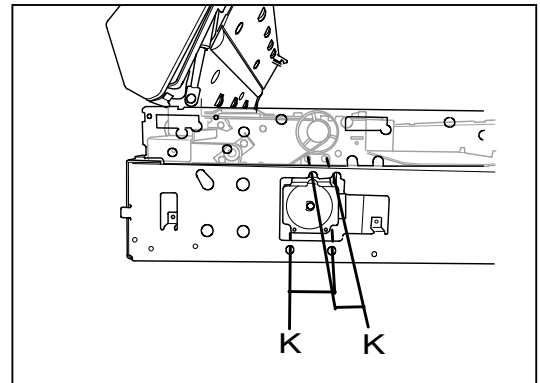
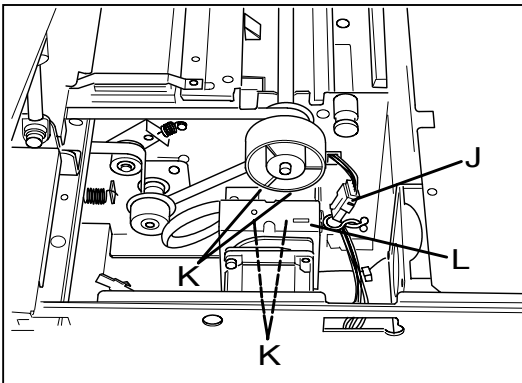
- 2) Disconnect the connector (B).  
Remove one screw (C) to remove the Tray 1 (D).



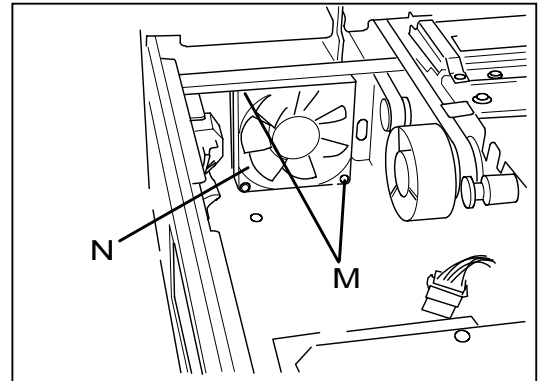
- 3) Inserting a long screwdriver to the holes (E), loosen 4 screws (F) and then move the Motor Tension Plate Assembly (G) toward the arrow mark to unfasten the Motor Timing Belt (H). Make the Motor Timing Belt (H) be out of gear.



- 4) Disconnect the connector (J), remove 4 screws (K) with a long screwdriver, and then take out the Motor Assembly (L).

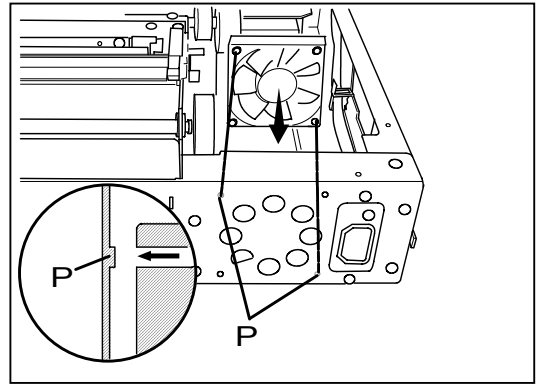


- 5) Remove 2 screws (M) to remove the DC Fan Motor (N).



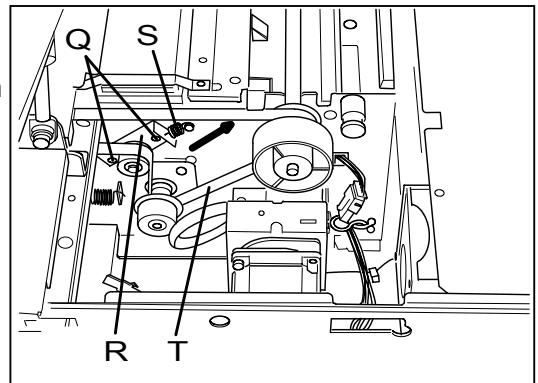
6) Install the new DC Fan Motor to the machine in the reversed order taking care of the following notes.

- (a) There are Positioning Bosses (P) on the Base Unit side.  
Fit Positioning Holes of the DC Fan Motor to these bosses, then fix the DC Fan Motor tightening screws.

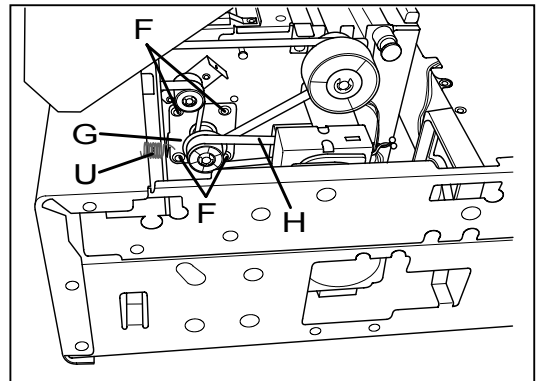


- (b) It is required to adjust the tension of each Drive Roller Timing Belt and Motor Timing Belt after putting back the Motor Assembly.  
Adjust the tension of Motor Timing Belt at first, then adjust that of Drive Roller Timing Belt as follows.

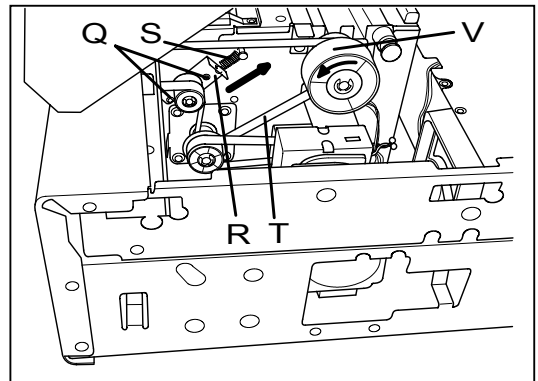
1. Loosen 2 screws (Q), move the Tension Plate B Assembly (R) toward the arrow mark and remove the Tension Spring (S) to unfasten the Drive Roller Timing Belt (T).



2. Stretch the Motor Timing Belt (H) to the Pulley of the Motor Tension Plate Assembly (G) while screws (F) are loosed.  
If you do so, the Motor Tension Plate Assembly (G) comes to a standstill being pulled by both Tension Spring (U) and Motor Timing Belt (H).  
Since this position of Motor Tension Plate Assembly (G) is best for the tension of Motor Timing Belt (H), fix it tightening screws (F).



3. Put back the Tension Spring (S) pulling the Tension Plate B Assembly (R) toward the arrow mark.  
Then, rotate the Coupling Roller (V) a few revolutions counterclockwise.  
The Tension Plate B Assembly (R) comes to a standstill being pulled by both Tension Spring (S) and Drive Roller Timing Belt (T).  
Since this position of Tension Plate B Assembly (R) is best for the tension of Drive Roller Timing Belt (T), fix it tightening screws (Q).

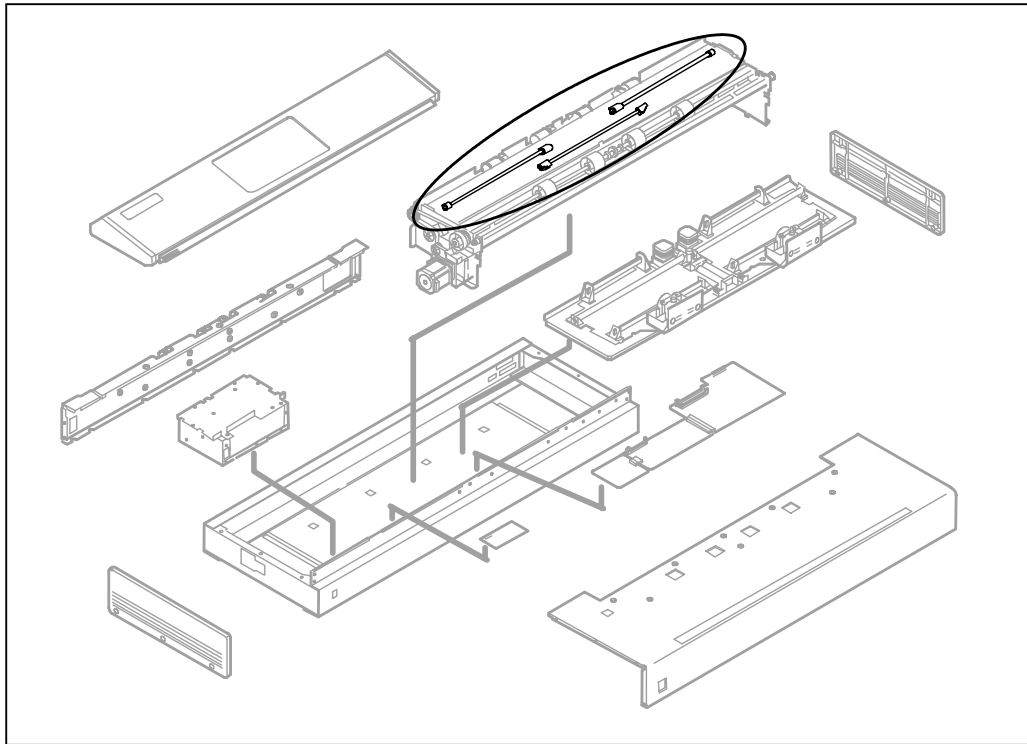


#### 4.4.9 Replacing Lamps



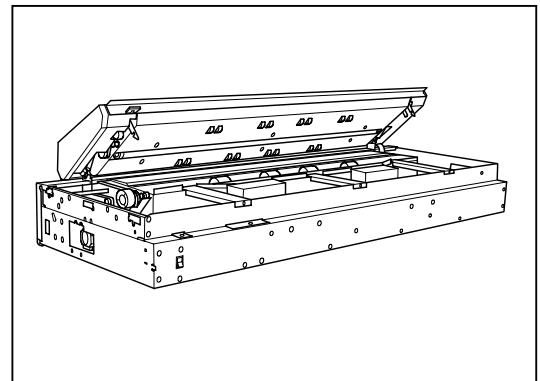
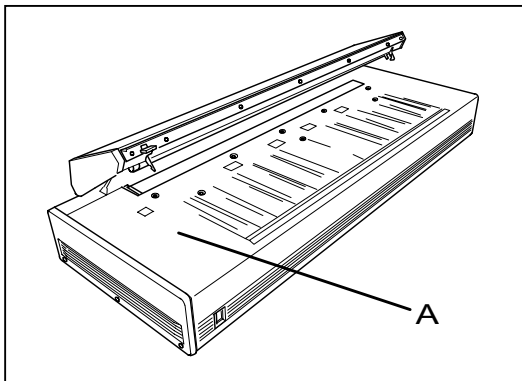
##### **WARNING**

Make sure to disconnect the machine from the power source before disassembly. Otherwise, you may get an electric shock.



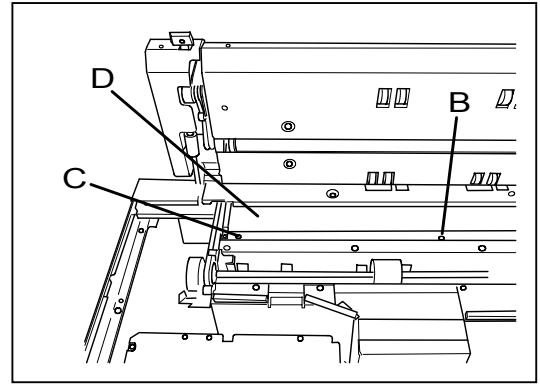
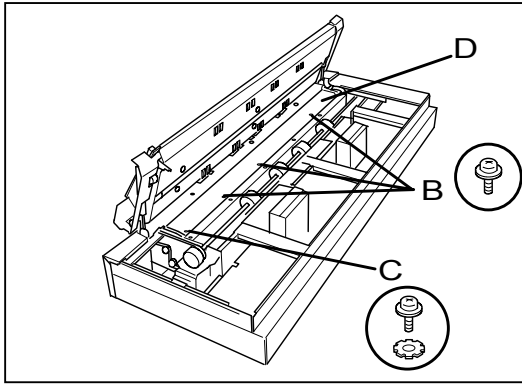
- 1) Making reference to “4.2.2 Removing the Original Table” on the page 4-4, remove the Original Table (A) from the Base Unit.

It is recommended to take off the Top Cover and to stand the Upper Unit vertically since it will become easier to do the later works.

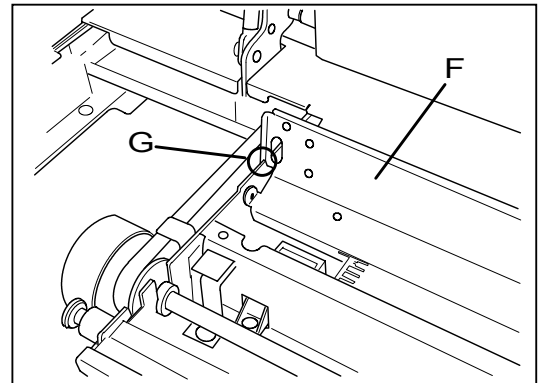
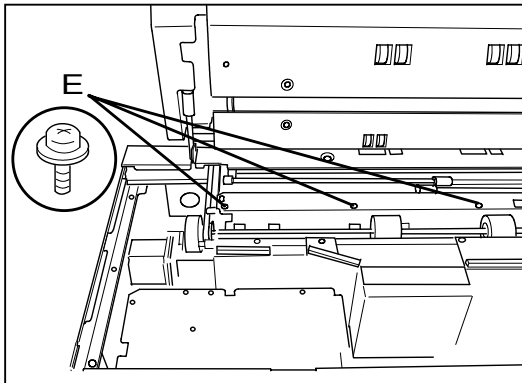


- 2) Remove 3 screws (B) and 1 screw (C) to remove the Original Glass (D).

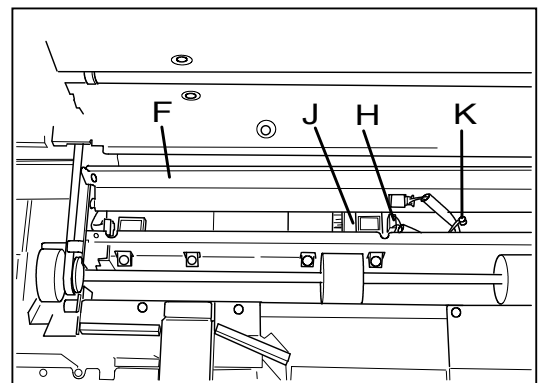
Note : Only the screw (C) at the left has a Star Washer.



- 3) Remove 6 screws (E), stand the Lamp Base Assembly (F) vertically and fit it to notches (G) at both sides as the following right figure shows.

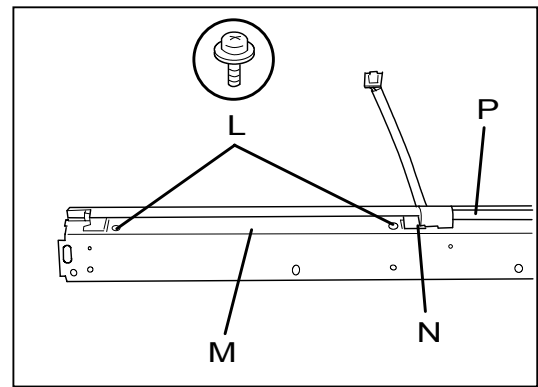


- 4) There are 3 pieces of Lamp Driver PCB under the Lamp Base Assembly (F). Disconnect the connector (H) from the central Lamp Driver PCB (J), release the wire from the Tie Clamp (K), and then remove the Lamp Base Assembly (F).

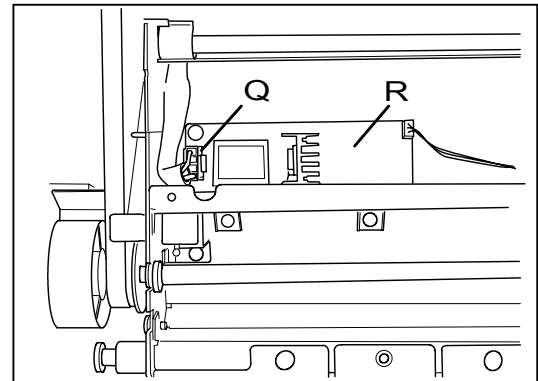




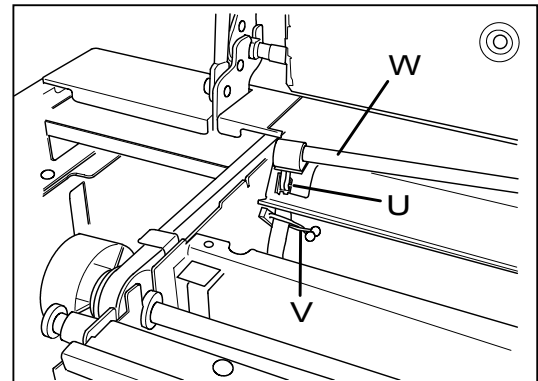
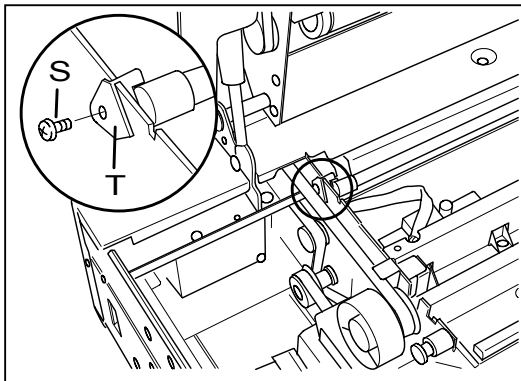
- 5) Remove 2 screws (L) to remove the Lamp Bracket (M) from the removed Lamp Base Assembly, release the wire from the Edge Saddle (N), and then remove the Lamp (P).



- 6) The Base Unit still has 2 pieces of Lamp. Disconnect the connector (Q) from each Lamp Driver PCB (R) at both sides.

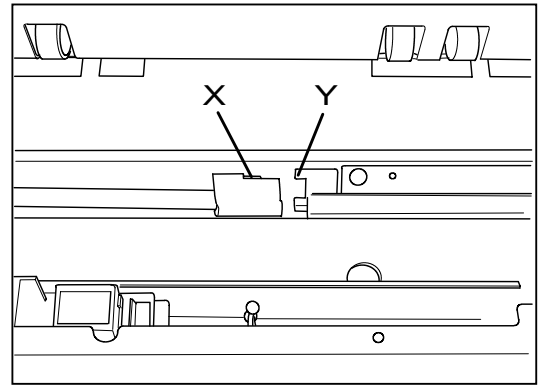


- 7) Remove the screw (S) to remove each Lamp Bracket (T) at both sides. Release the wire of Lamp from Edge Saddle (U) and Tie Clamp (V), and then remove each Lamp (W) at both sides.

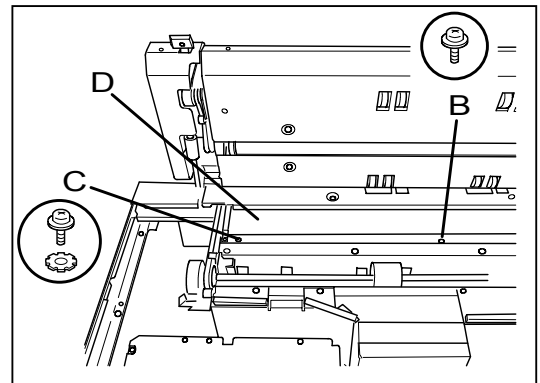


8) Install new Lamps to the machine in the reversed order taking care of the following notes.

- (a) Fit the Groove (X) at the end of each Lamp to the Projection (Y) of the Lamp Bracket in order to catch the Lamp firmly.



- (b) When you put back the Original Glass (D), do not forget to attach the Star Washer to the screw (C) of the left side.

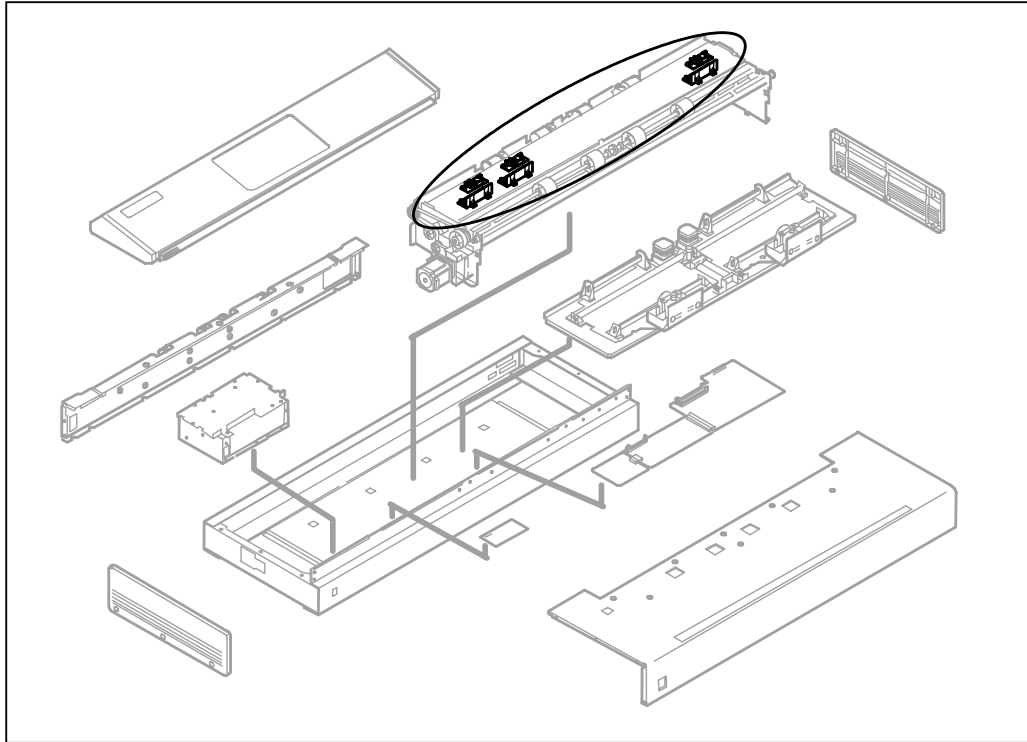


#### 4.4.10 Replacing Lamp Driver PCBs



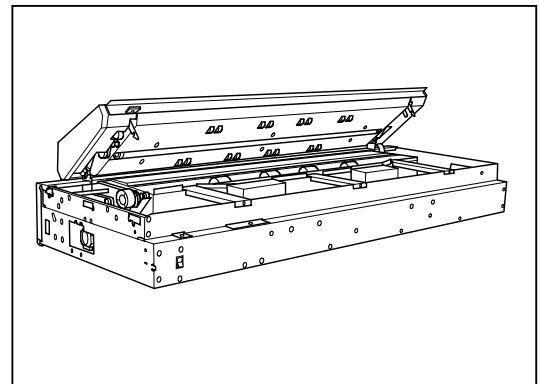
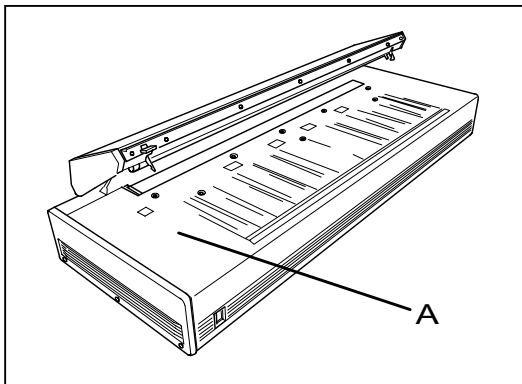
##### **WARNING**

Make sure to disconnect the machine from the power source before disassembly. Otherwise, you may get an electric shock.



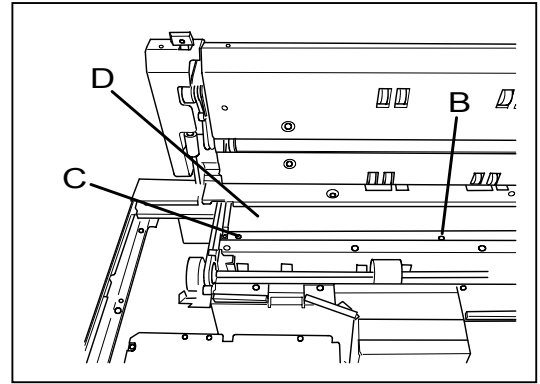
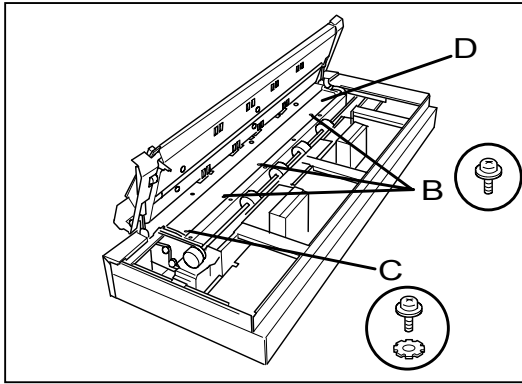
- 1) Making reference to “4.2.2 Removing the Original Table” on the page 4-4, remove the Original Table (A) from the Base Unit.

It is recommended to take off the Top Cover and to stand the Upper Unit vertically since it will become easier to do the later works.

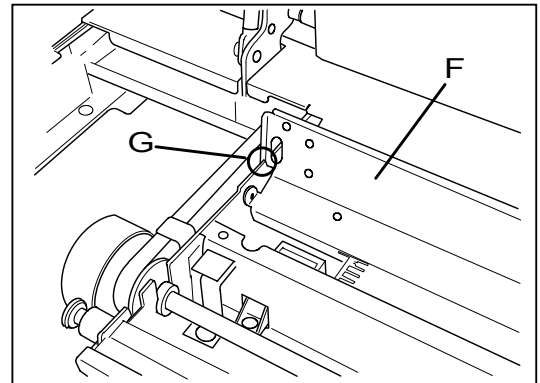
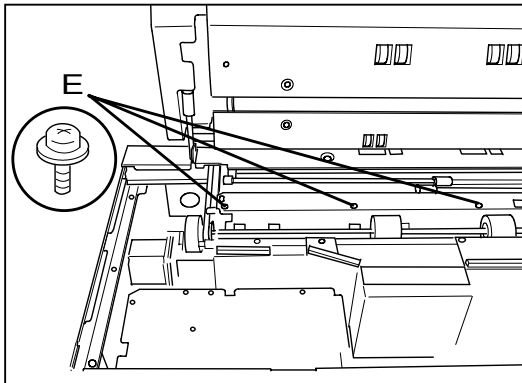


- 2) Remove 3 screws (B) and 1 screw (C) to remove the Original Glass (D).

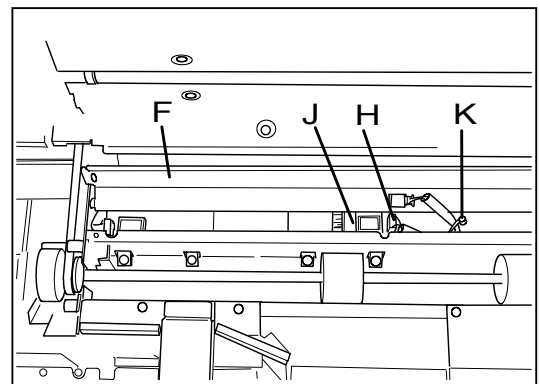
Note : Only the screw (C) at the left has a Star Washer.



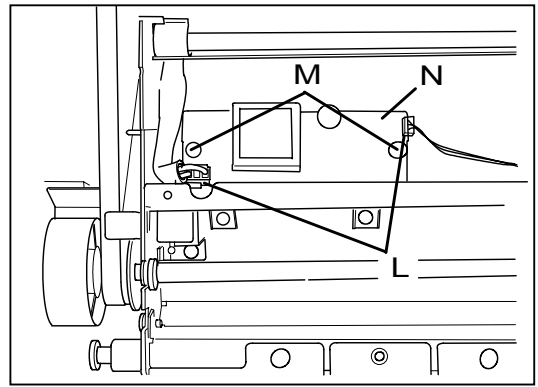
- 3) Remove 6 screws (E), stand the Lamp Base Assembly (F) vertically and fit it to notches (G) at both sides as the following right figure shows.



- 4) There are 3 pieces of Lamp Driver PCB under the Lamp Base Assembly (F). Disconnect the connector (H) from the central Lamp Driver PCB (J), release the wire from the Tie Clamp (K), and then remove the Lamp Base Assembly (F).

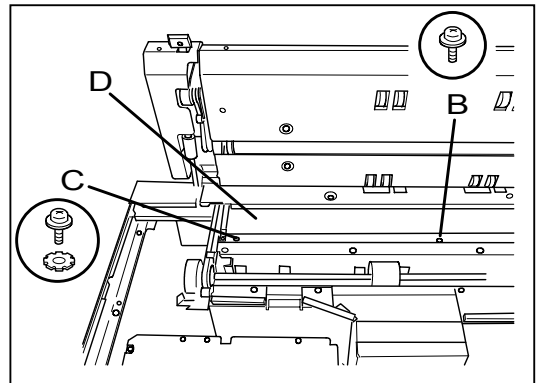


- 5) Disconnect 2 connectors (L), remove 2 screws (M), and then remove each Lamp Driver PCB (N).



- 6) Install the new Lamp Driver PCB to the machine in the reversed order taking care of the following note.

When you put back the Original Glass (D), do not forget to attach the Star Washer to the screw (C) of the left side.



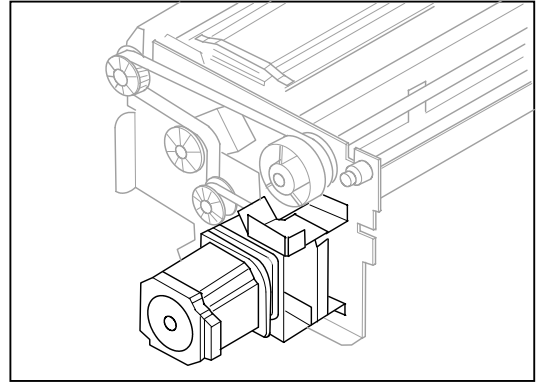
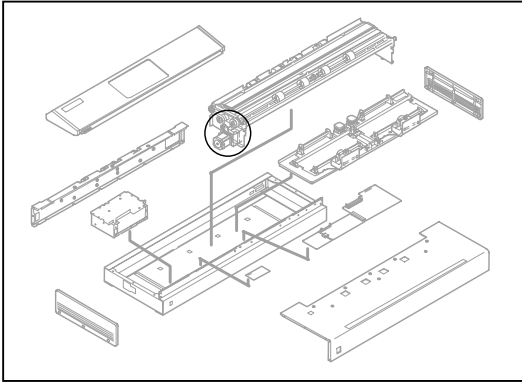
## 4.5 Base Unit Driving Part

### 4.5.1 Replacing the Stepping Motor and Motor Pulley Assembly

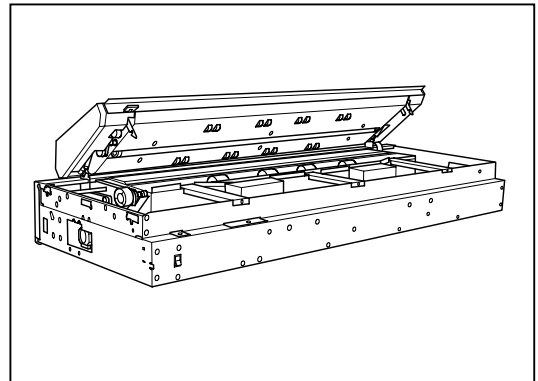
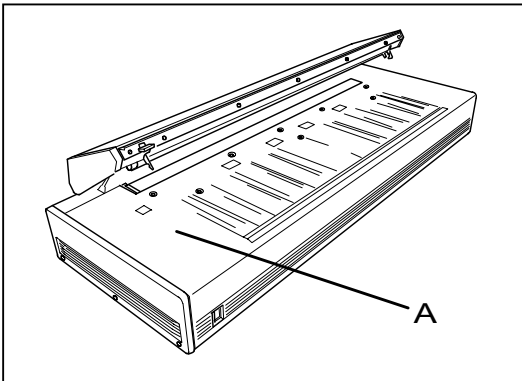


#### WARNING

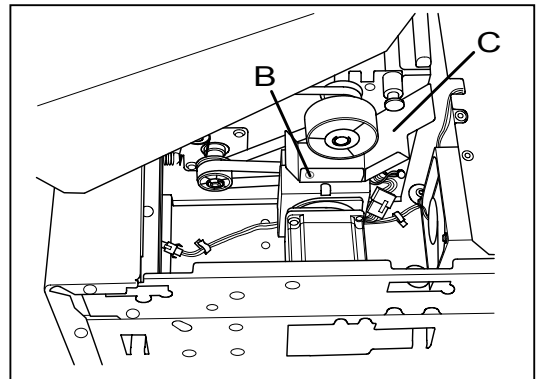
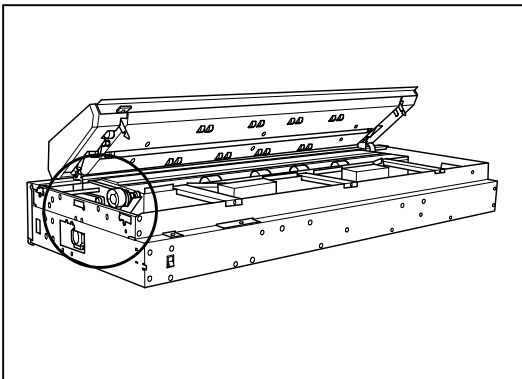
Make sure to disconnect the machine from the power source before disassembly. Otherwise, you may get an electric shock.



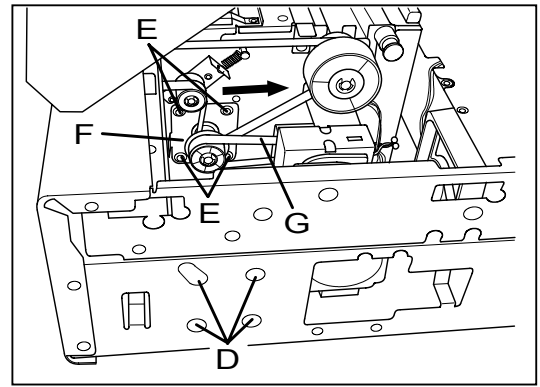
- 1) Making reference to “4.2.2 Removing the Original Table” on the page 4-4, remove the Original Table (A) from the Base Unit.



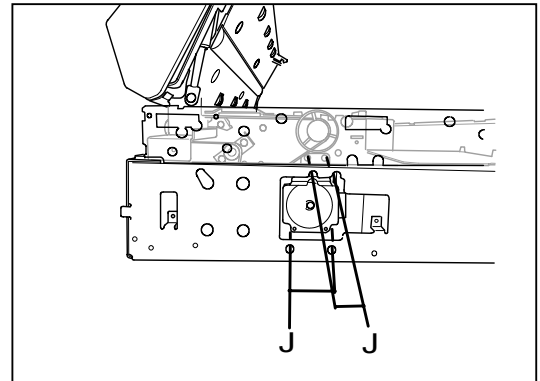
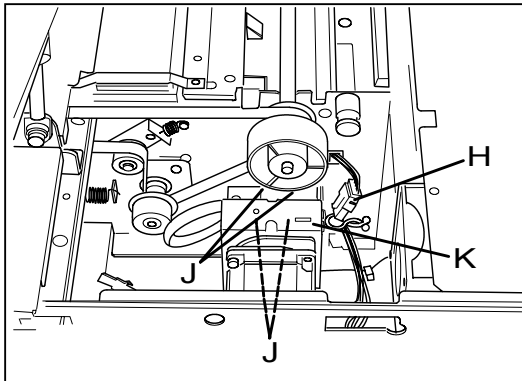
- 2) Remove the screw (B) to remove the Tray 1 (C).



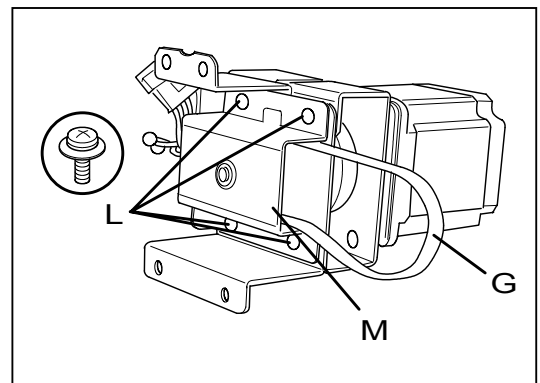
- 3) Inserting a long screwdriver to the holes (D), loosen 4 screws (E) and then move the Motor Tension Plate Assembly (F) toward the arrow mark to unfasten the Motor Timing Belt (G). Make the Motor Timing Belt (G) be out of gear.



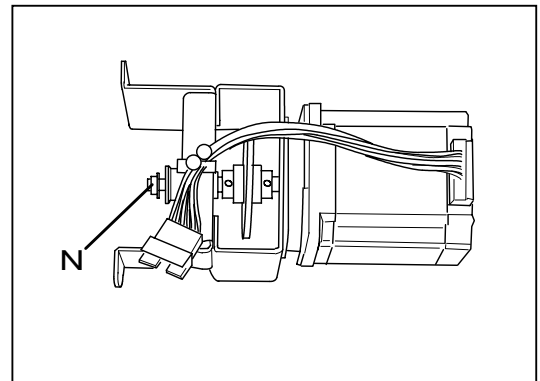
- 4) Disconnect the connector (H), remove 4 screws (J) with a long screwdriver, and then take out the Motor Assembly (K).



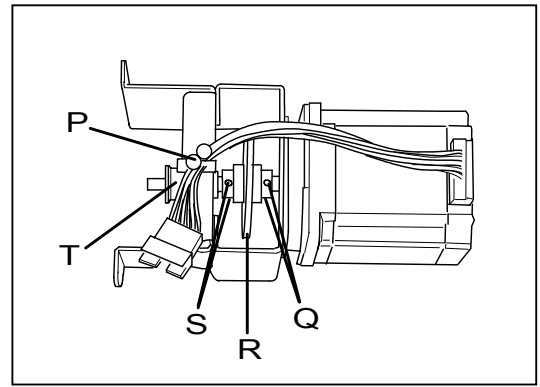
- 5) Remove 4 screws (L) to remove Motor Bracket 3 (M), and Motor Timing Belt (G).



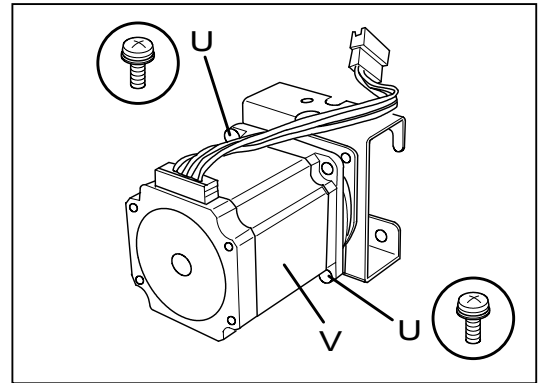
- 6) Remove the Bearing (N).



- 7) Release the wire from the Tie Clamp (P).  
Remove 2 Set Screws (Q), and then pull out the  
motor shaft from the Damper Coupling (R).  
Remove 2 Set Screws (S), and then pull out the  
Motor Pulley Assembly (T) from the Damper  
Coupling (R).



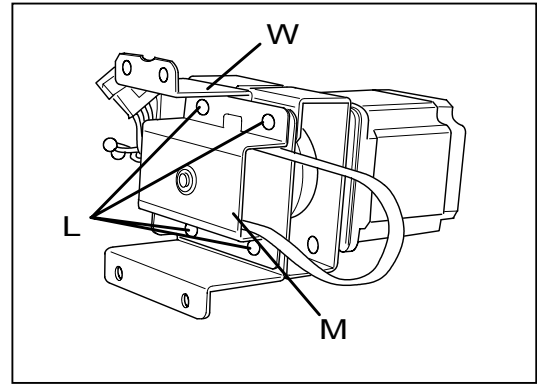
- 8) Remove 2 screws (U) to remove the Stepping  
Motor (V).





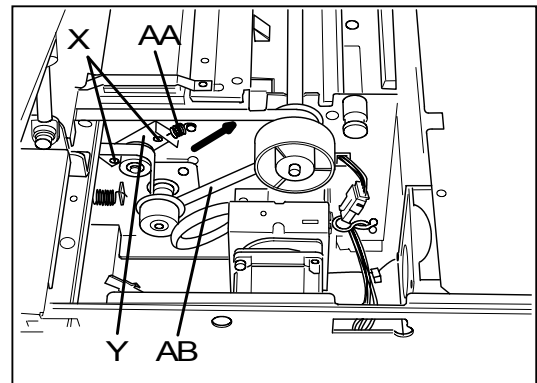
- 9) Install new Stepping Motor and Motor Pulley Assembly to the machine in the reversed order taking care of the following notes.

- (a) Fix both Motor Bracket 3 (M) and Motor Bracket 1 (W) with screws (L).

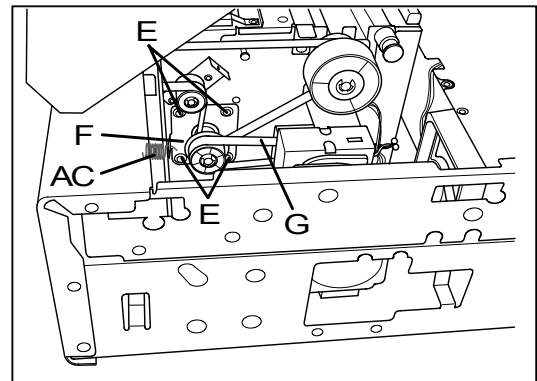


- (b) It is required to adjust the tension of each Drive Roller Timing Belt and Motor Timing Belt after putting back the Motor Assembly.  
Adjust the tension of Motor Timing Belt at first, then adjust that of Drive Roller Timing Belt as follows.

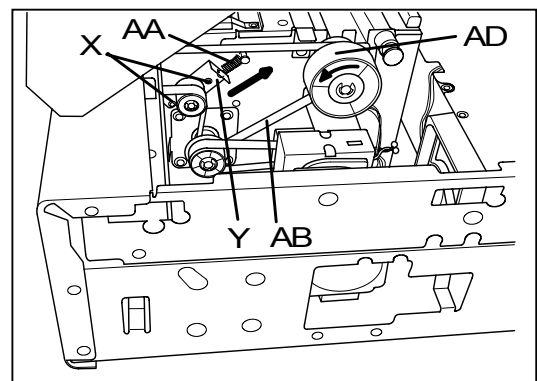
1. Loosen 2 screws (X), move the Tension Plate B Assembly (Y) toward the arrow mark and remove the Tension Spring (AA) to unfasten the Drive Roller Timing Belt (AB).



2. Stretch the Motor Timing Belt (G) to the Pulley of the Motor Tension Plate Assembly (F) while screws (E) are loosed.  
If you do so, the Motor Tension Plate Assembly (F) comes to a standstill being pulled by both Tension Spring (AC) and Motor Timing Belt (G).  
Since this position of Motor Tension Plate Assembly (F) is best for the tension of Motor Timing Belt (G), fix it tightening screws (E).



3. Put back the Tension Spring (AA) pulling the Tension Plate B Assembly (Y) toward the arrow mark.  
Then, rotate the Coupling Roller (AD) a few revolutions counterclockwise.  
The Tension Plate B Assembly (Y) comes to a standstill being pulled by both Tension Spring (AA) and Drive Roller Timing Belt (AB).  
Since this position of Tension Plate B Assembly (Y) is best for the tension of Drive Roller Timing Belt (AB), fix it tightening screws (X).

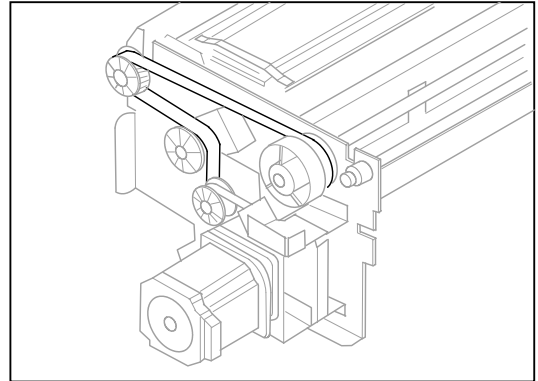
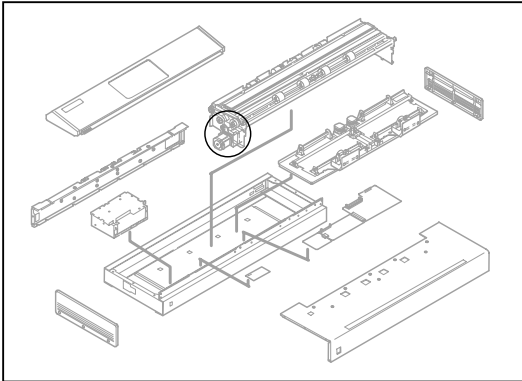


## 4.5.2 Replacing the Drive Roller Timing Belt

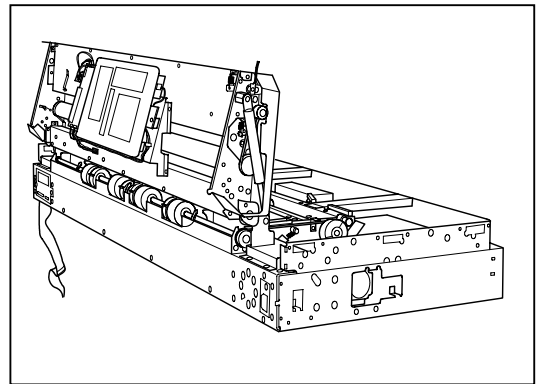
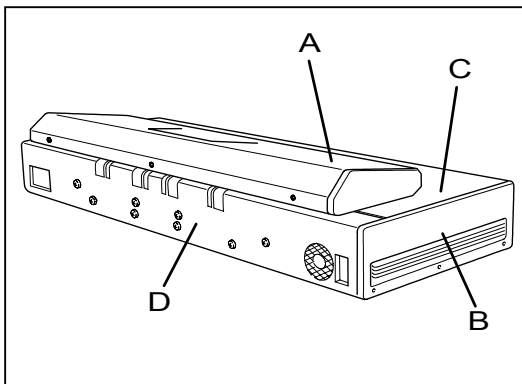


### WARNING

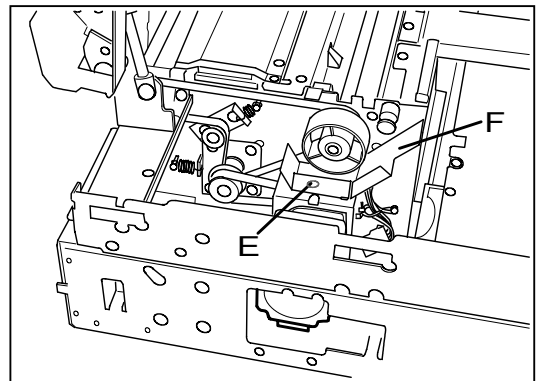
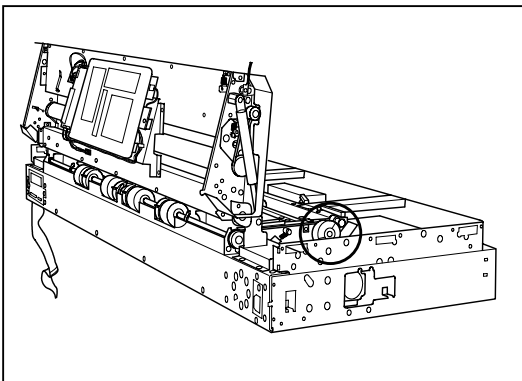
Make sure to disconnect the machine from the power source before disassembly. Otherwise, you may get an electric shock.



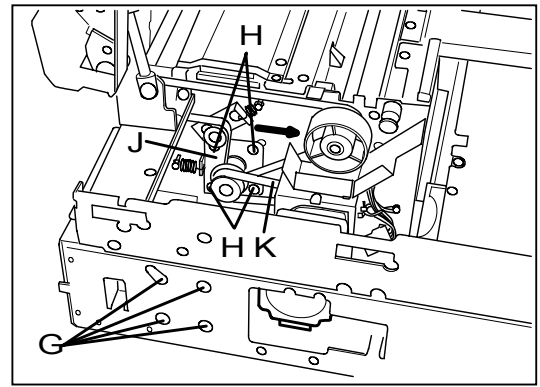
- 1) Making reference to “4.1 Outer Covers” (On pages from 4-2 to 4-9), take off all of Top Cover (A), Side Covers (B), Original Table (C) and Rear Cover (D).



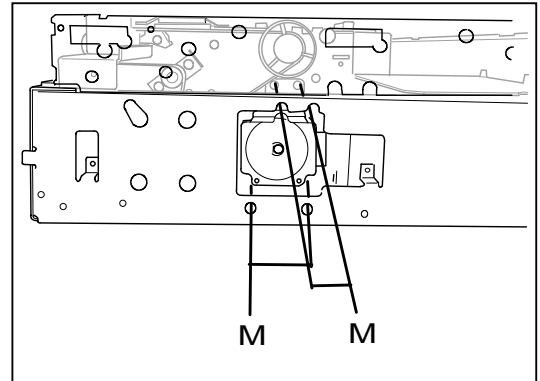
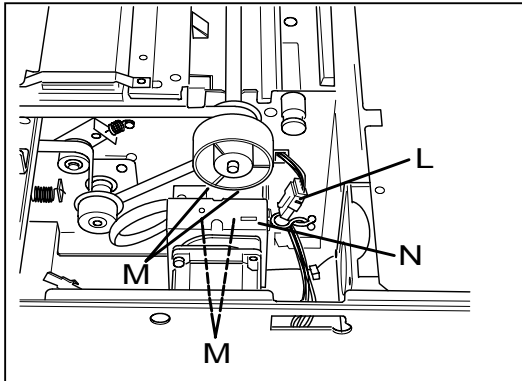
- 2) Remove the screw (E) to remove the Tray 1 (F).



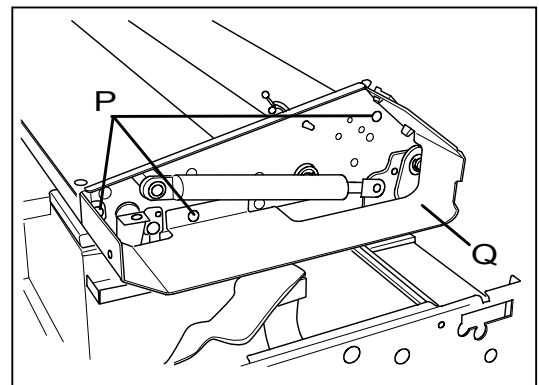
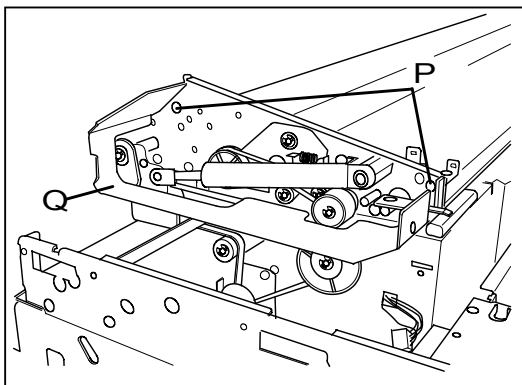
- 3) Inserting a long screwdriver to the holes (G), loosen 4 screws (H) and then move the Motor Tension Plate Assembly (J) toward the arrow mark to unfasten the Motor Timing Belt (K). Make the Motor Timing Belt (K) be out of gear.



- 4) Disconnect the connector (L), remove 4 screws (M) with a long screwdriver, and then take out the Motor Assembly (N).

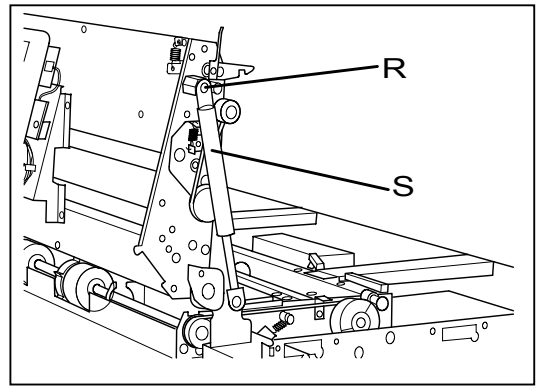


- 5) Close the Upper Unit.  
Remove 5 screws (P) to remove Damper Covers (Q) at both sides.

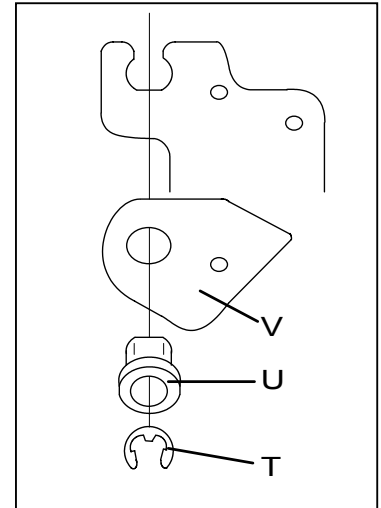
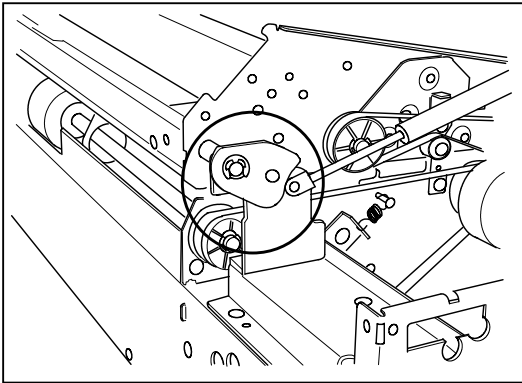


- 6) Remove screws (R) at both sides to make both Gas Springs (S) free.

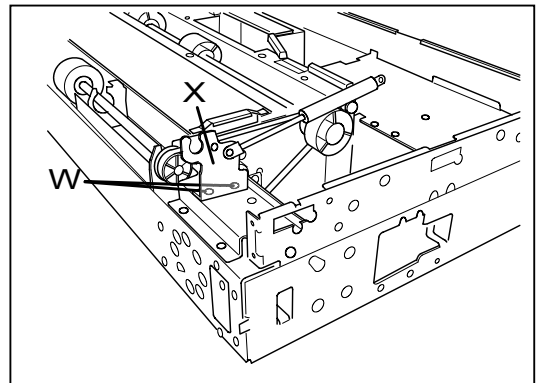
**Note : If you make both Gas Springs (S) free, the Upper Unit will fall down. Therefore, support the Upper Unit with one hand.**



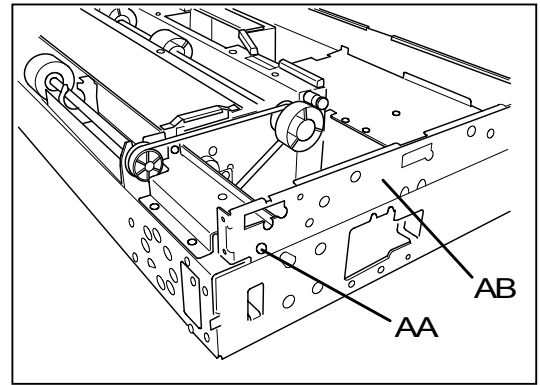
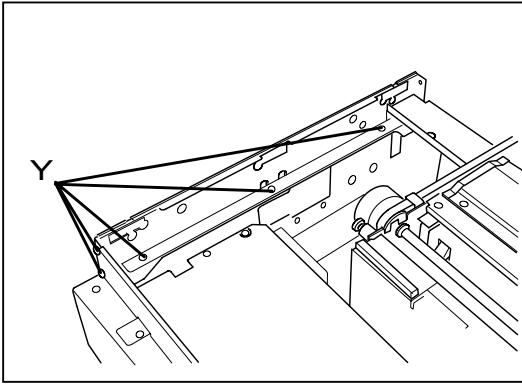
- 7) Close the Upper Unit.  
Remove E Rings (T) at both sides to remove Bearings (U) and Damper Stoppers (V).  
Then, remove the whole Upper Unit.



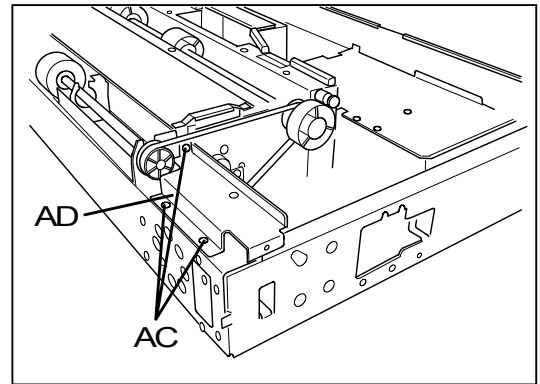
- 8) Remove 2 screws (W) to remove the Fulcrum Bracket (X) at the left of the scanner.  
(Remove the Fulcrum Bracket together with the Gas Spring.)



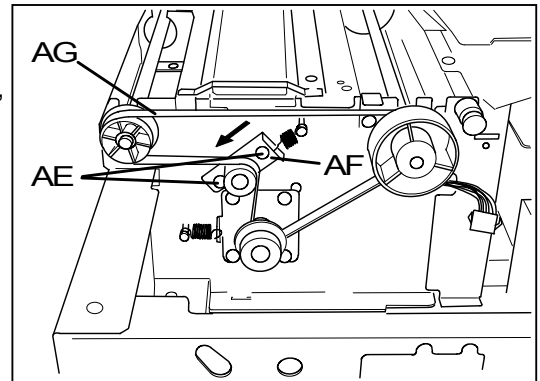
- 9) Remove 5 screws (Y) and one more screw (AA) outside to remove the Cover Plate (AB) at the left of the scanner.



- 10) Remove 3 screws (AC) to remove the Fulcrum Bracket Stand (AD) at the left of the scanner.

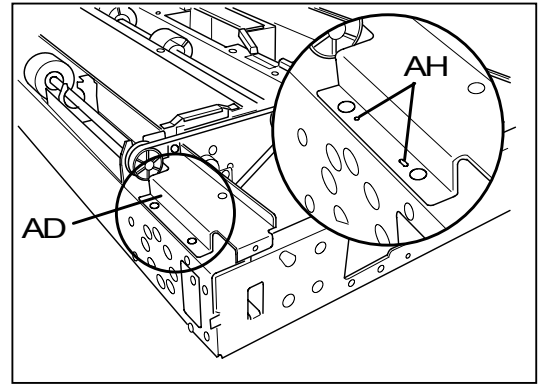


- 11) Loosen 2 screws (AE), and then move the Tension Plate B Assembly (AF) toward the arrow mark. Since the Drive Roller Timing Belt (AG) is unfastened, remove it.



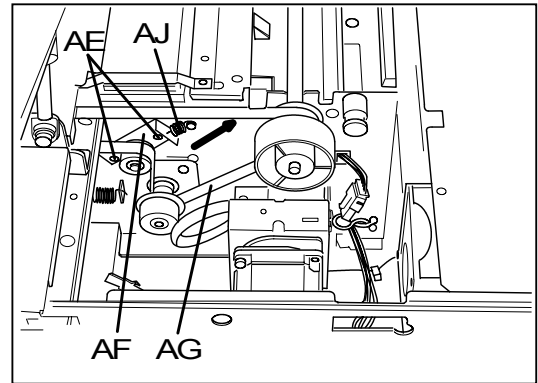
12) Install the new Drive Roller Timing Belt to the machine in the reversed order taking care of the following notes.

- (a) When you put back the Fulcrum Bracket Stand (AD), fit its Positioning Holes (AH) to Positioning Bosses on Base Unit side, and then fix it tightening screws.

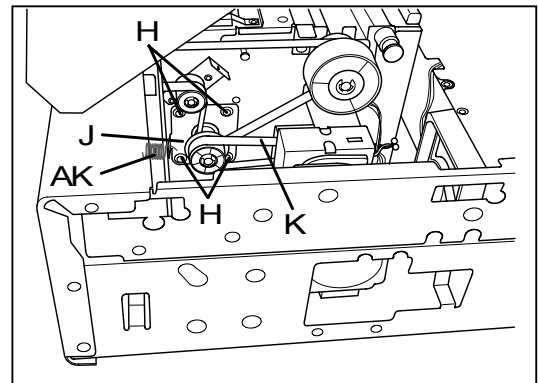


- (b) It is required to adjust the tension of each Drive Roller Timing Belt and Motor Timing Belt after putting back the Motor Assembly.  
Adjust the tension of Motor Timing Belt at first, then adjust that of Drive Roller Timing Belt as follows.

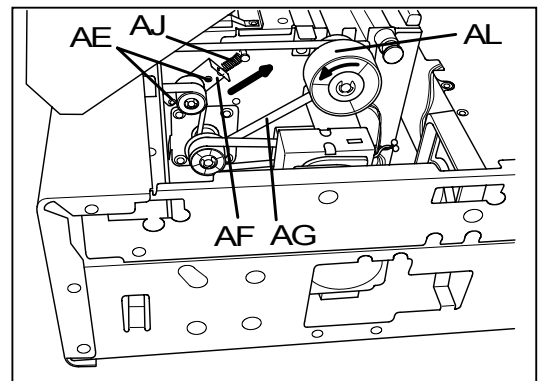
1. Loosen 2 screws (AE), move the Tension Plate B Assembly (AF) toward the arrow mark and remove the Tension Spring (AJ) to unfasten the Drive Roller Timing Belt (AG).



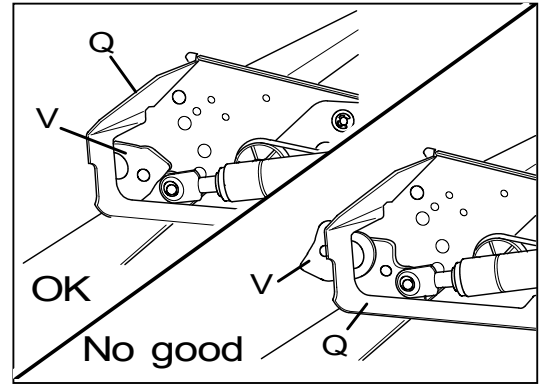
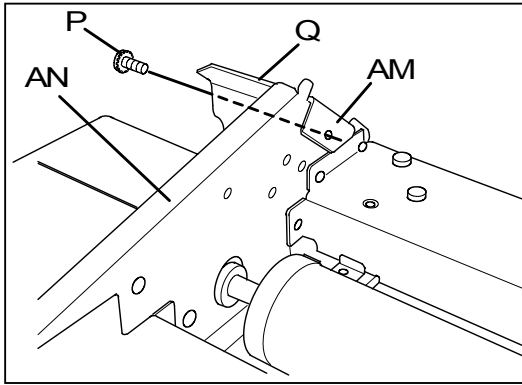
2. Stretch the Motor Timing Belt (K) to the Pulley of the Motor Tension Plate Assembly (J) while screws (H) are loosed.  
If you do so, the Motor Tension Plate Assembly (J) comes to a standstill being pulled by both Tension Spring (AK) and Motor Timing Belt (K).  
Since this position of Motor Tension Plate Assembly (J) is best for the tension of Motor Timing Belt (K), fix it tightening screws (H).



3. Put back the Tension Spring (AJ) pulling the Tension Plate B Assembly (AF) toward the arrow mark.  
Then, rotate the Coupling Roller (AL) a few revolutions counterclockwise.  
The Tension Plate B Assembly (AF) comes to a standstill being pulled by both Tension Spring (AJ) and Drive Roller Timing Belt (AG).  
Since this position of Tension Plate B Assembly (AF) is best for the tension of Drive Roller Timing Belt (AG), fix it tightening screws (AE).



- (c) When you put back the Damper Cover (Q), place its plate (AM) inside of the side plate (AN) of the Upper Unit and fix it with the screw (P) from the outside as the following left figure shows. And place the Damper Stopper (V) inside of the Damper Cover (Q).

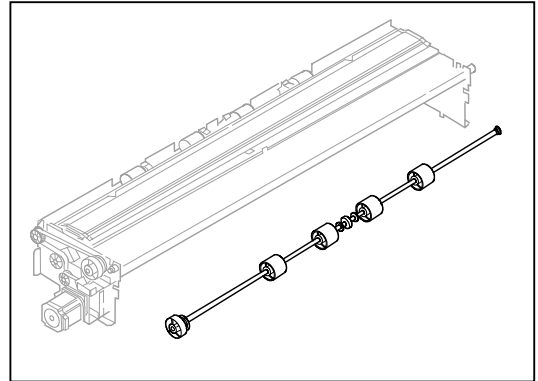
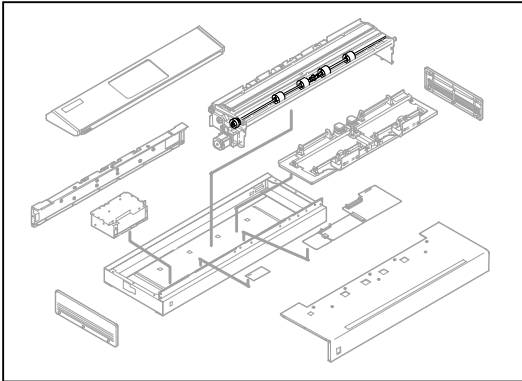


### 4.5.3 Replacing the Drive Roller Assembly

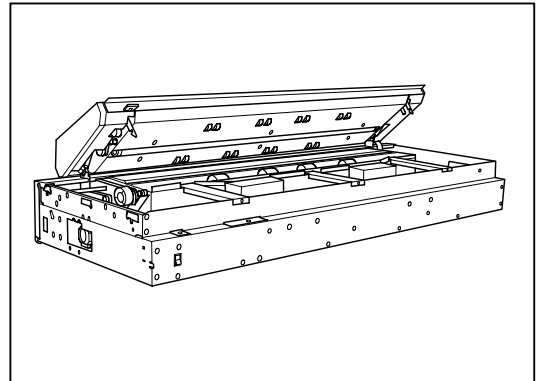
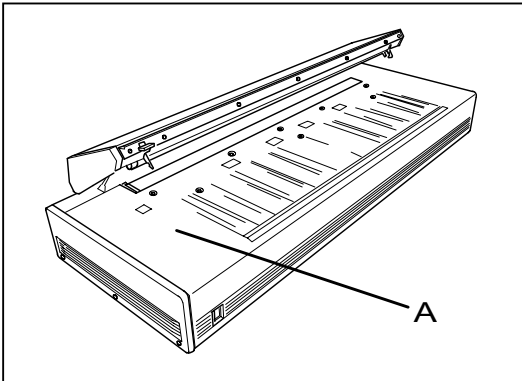


#### **WARNING**

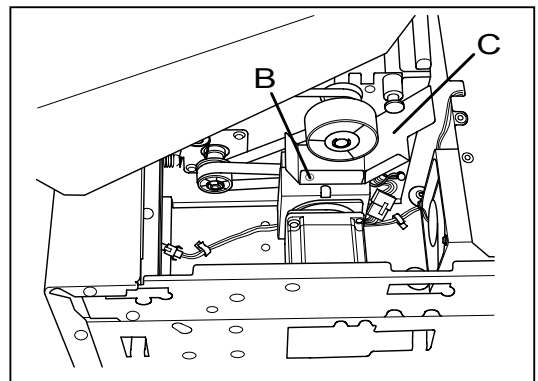
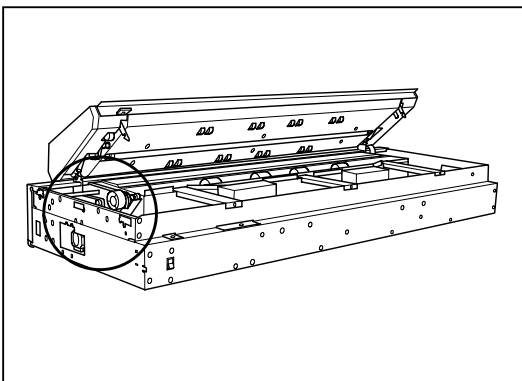
Make sure to disconnect the machine from the power source before disassembly. Otherwise, you may get an electric shock.



- 1) Making reference to “4.2.2 Removing the Original Table” on the page 4-4, remove the Original Table (A) from the Base Unit.

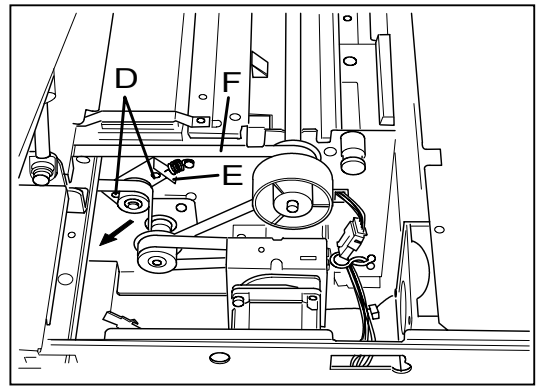


- 2) Remove the screw (B) to remove the Tray 1 (C).

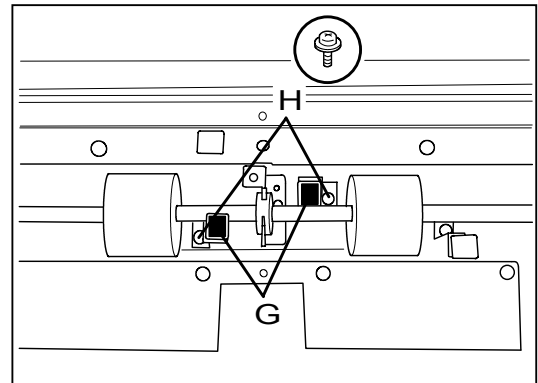
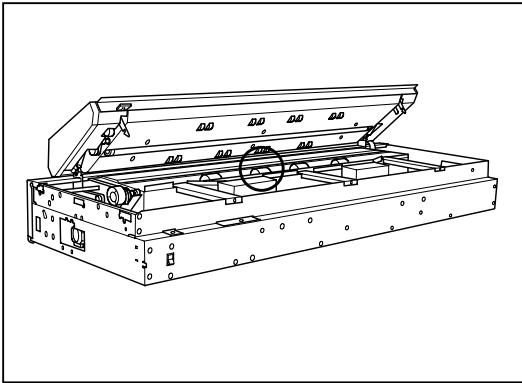




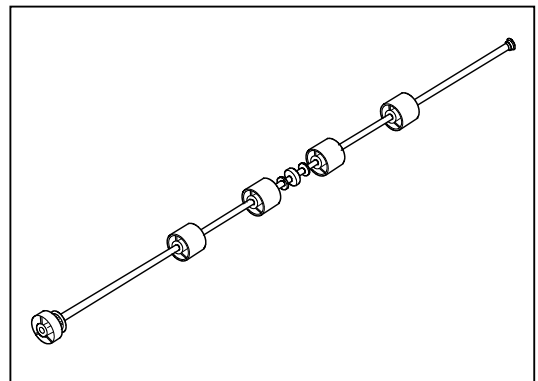
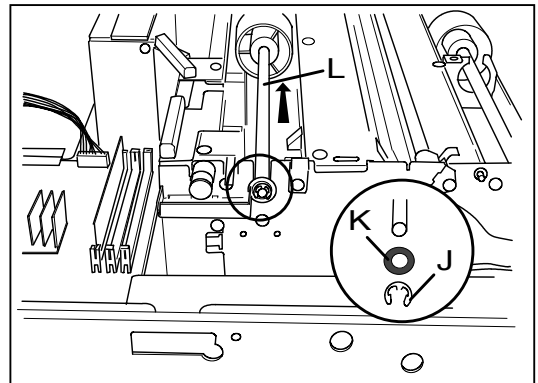
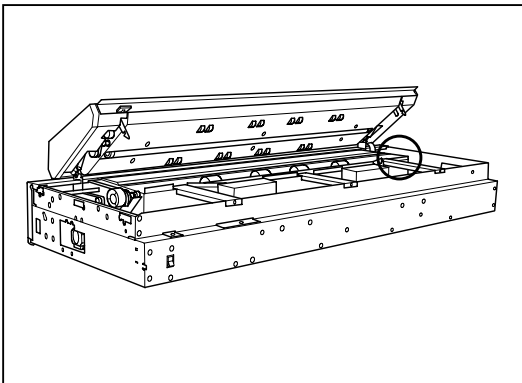
- 3) Loosen 2 screws (D), and then move the Tension Plate B Assembly (E) toward the arrow mark. Since the Drive Roller Timing Belt (F) is unfastened, make it be out of gear.



- 4) Remove 2 pieces of Black Sheet Bracket Assembly (G) removing each screw (H).

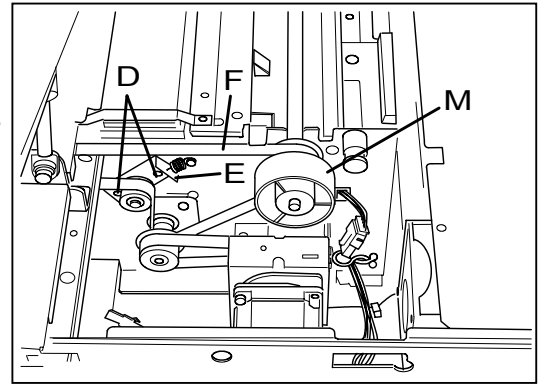


- 5) Remove E Ring (J) and Polyslider (K) at the right of the scanner, and then remove the Drive Roller Assembly (L) moving toward the arrow mark.



- 6) Install the new Drive Roller Assembly to the machine in the reversed order taking care of the following note.

When screws (D) are loosed, stretch the Drive Roller Timing Belt (F) to the Pulley of the Tension Plate B Assembly (E).  
Then, rotate the Coupling Roller (M) a few revolutions counterclockwise.  
The Tension Plate B Assembly (E) comes to a standstill being pulled by both Tension Spring and Drive Roller Timing Belt.  
Since this position of Tension Plate B Assembly (E) is best for the tension of Drive Roller Timing Belt (F), fix it tightening screws (D).

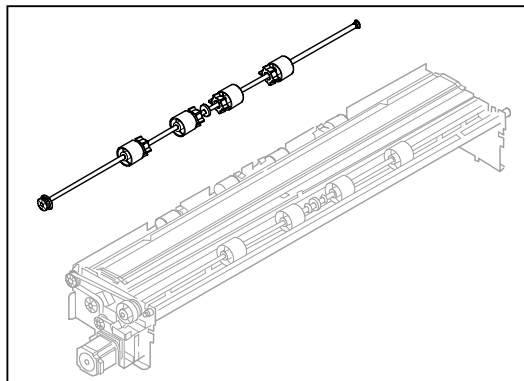
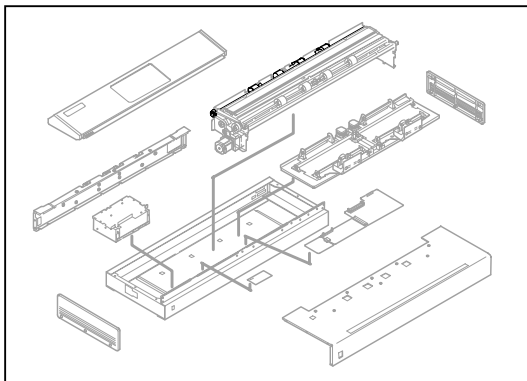


## 4.5.4 Replacing the Exit Roller Assembly

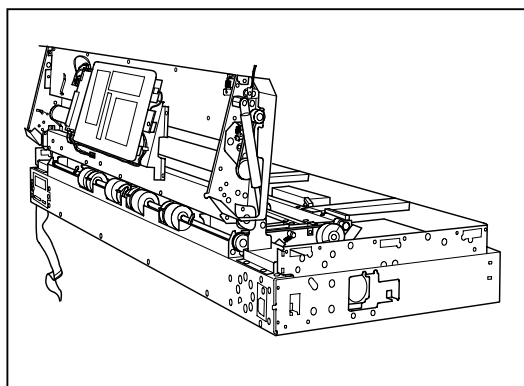
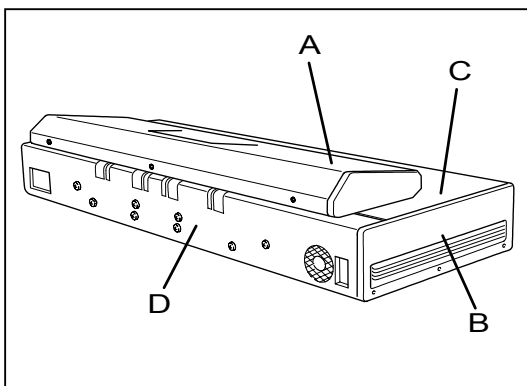


### WARNING

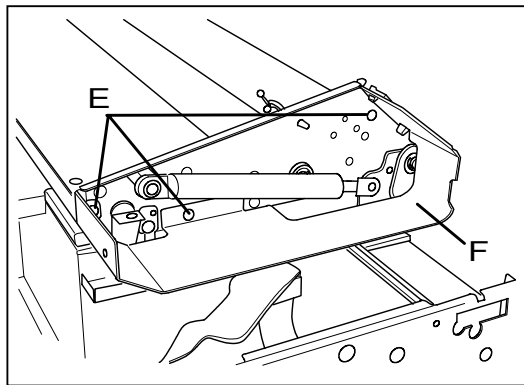
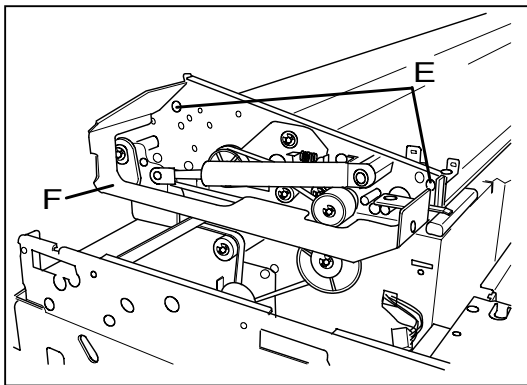
Make sure to disconnect the machine from the power source before disassembly. Otherwise, you may get an electric shock.



- 1) Making reference to “4.1 Outer Covers” (On pages from 4-2 to 4-9), take off all of Top Cover (A), Side Covers (B), Original Table (C) and Rear Cover (D).

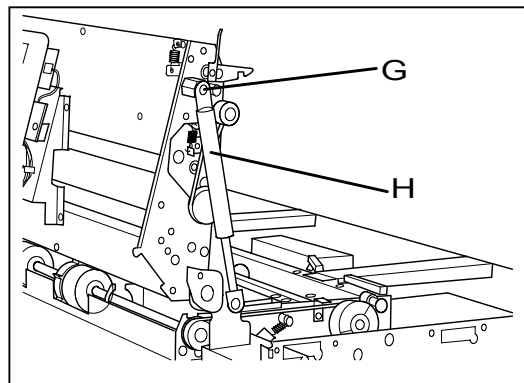


- 2) Close the Upper Unit.  
Remove 5 screws (E) to remove Damper Covers (F) at both sides.

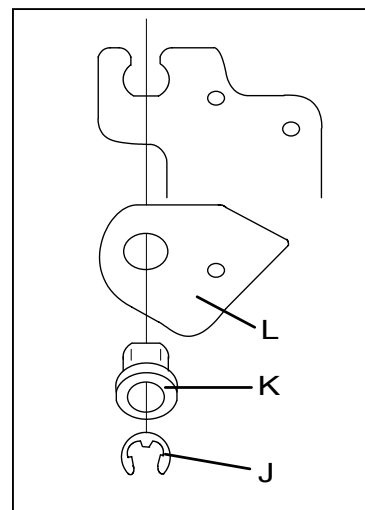
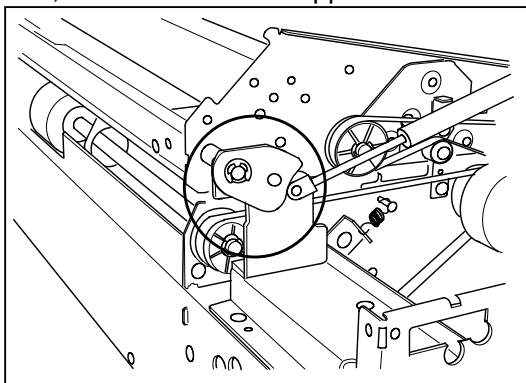


- 3) Remove screws (G) at both sides to make both Gas Springs (H) free.

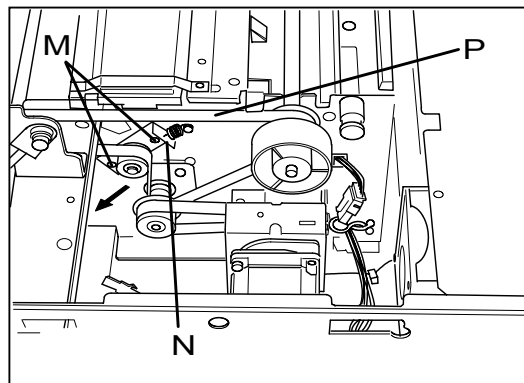
**Note : If you make both Gas Springs (H) free, the Upper Unit will fall down. Therefore, support the Upper Unit with one hand.**



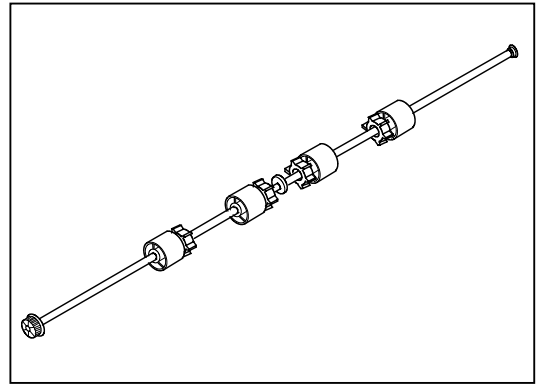
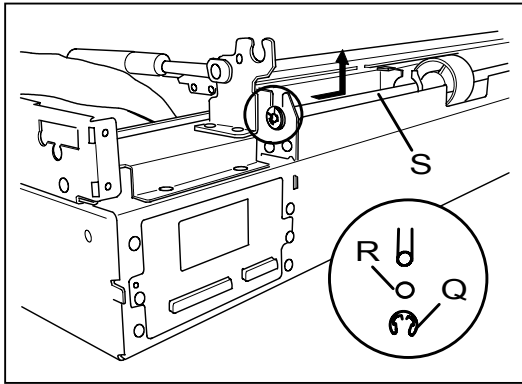
- 4) Remove E Rings (J) at both sides to remove Bearings (K) and Damper Stoppers (L). Then, remove the whole Upper Unit.



- 5) Loosen 2 screws (M), and then move the Tension Plate B Assembly (N) toward the arrow mark. Since the Drive Roller Timing Belt (P) is unfastened, make it be out gear.

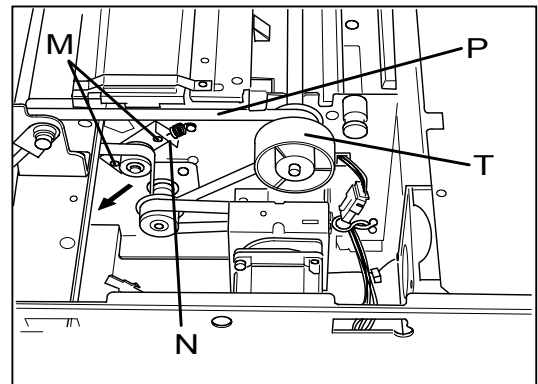


- 6) Remove both E Ring (Q) and Polyslider (R) at the right.  
Then, slide the Rear Drive Roller Assembly (S) toward the arrow mark to remove it.

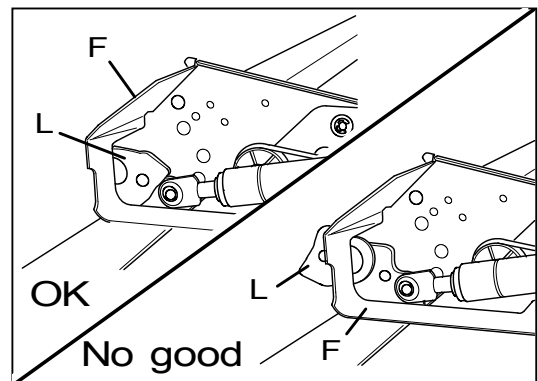
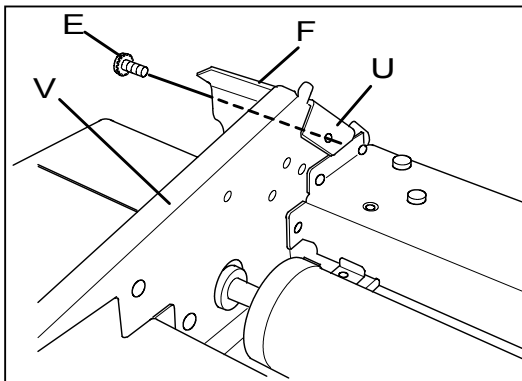


- 7) Install the new Drive Roller Timing Belt to the machine in the reversed order taking care of the following note.

- (a) When screws (M) are loosed, stretch the Drive Roller Timing Belt (P) to the Pulley of the Tension Plate B Assembly (N).  
Then, rotate the Coupling Roller (T) a few revolutions counterclockwise.  
The Tension Plate B Assembly (N) comes to a standstill being pulled by both Tension Spring and Drive Roller Timing Belt.  
Since this position of Tension Plate B Assembly (N) is best for the tension of Drive Roller Timing Belt (P), fix it tightening screws (M).



- (b) When you put back the Damper Cover (F), place its plate (U) inside of the side plate (V) of the Upper Unit and fix it with the screw (E) from the outside as the following left figure shows.  
And place the Damper Stopper (L) inside of the Damper Cover (F).



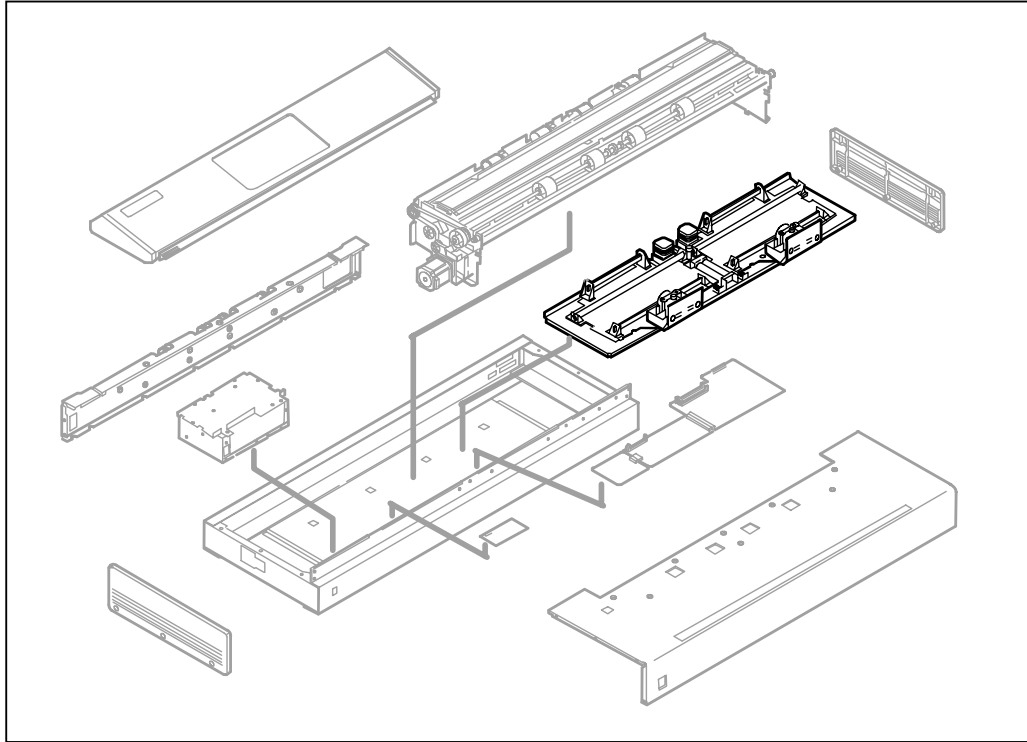
## 4.6 Optical Unit

### 4.6.1 Removing the Optical Unit

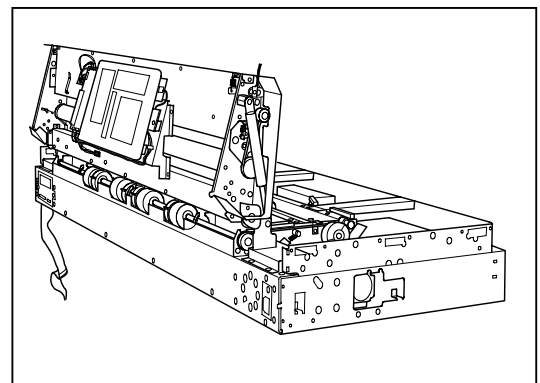
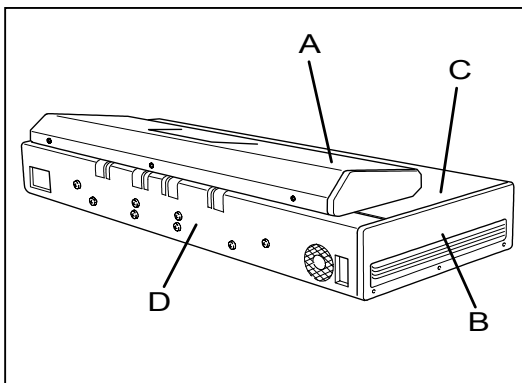


#### **WARNING**

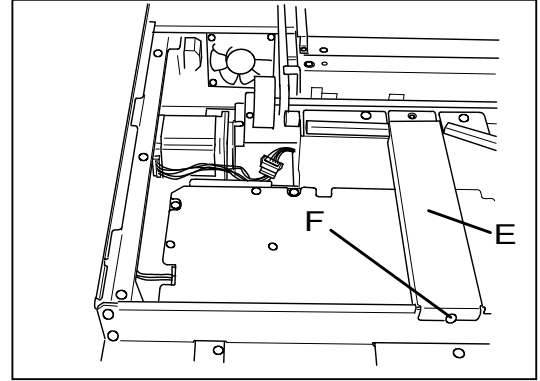
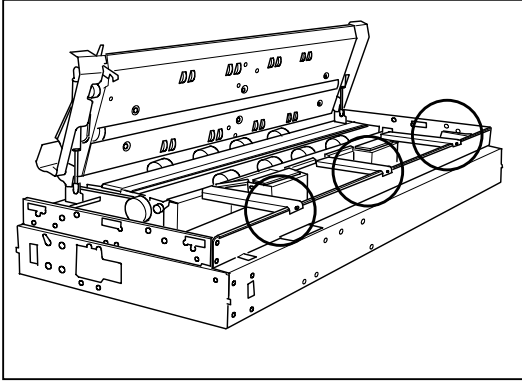
Make sure to disconnect the machine from the power source before disassembly. Otherwise, you may get an electric shock.



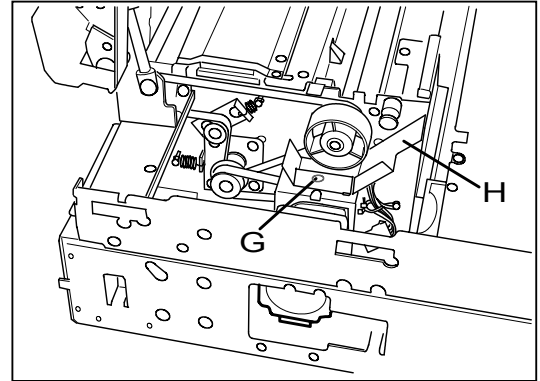
- 1) Making reference to “4.1 Outer Covers” (On pages from 4-2 to 4-9), take off all of Top Cover (A), Side Covers (B), Original Table (C) and Rear Cover (D).



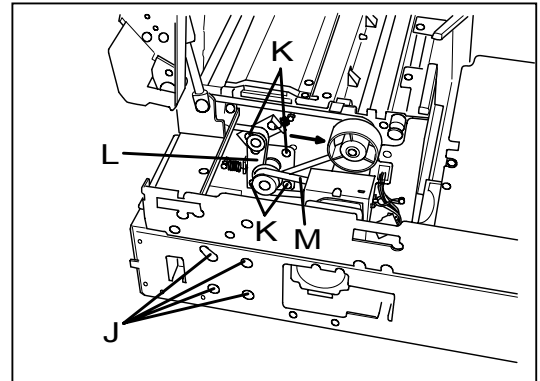
- 2) Remove 3 pieces of Reinforcement Plate (E) removing the screw (F) for each one.



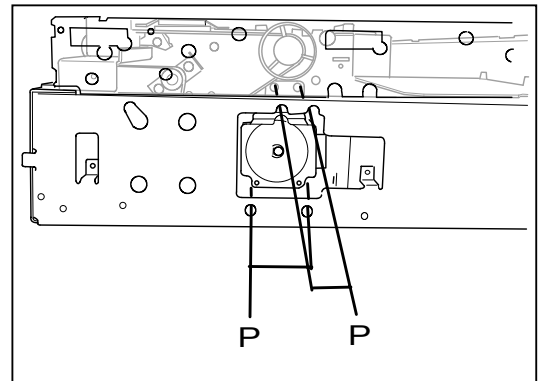
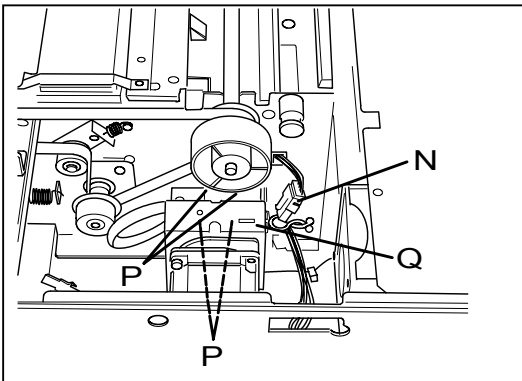
- 3) Remove one screw (G) to remove the Tray 1 (H).



- 4) Inserting a long screwdriver to the holes (J), loosen 4 screws (K) and then move the Motor Tension Plate Assembly (L) toward the arrow mark to unfasten the Motor Timing Belt (M). Make the Motor Timing Belt (M) be out of gear.

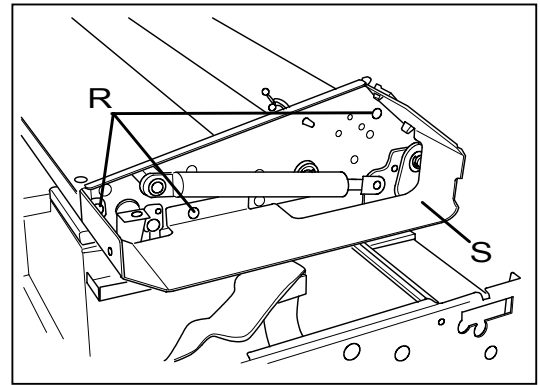
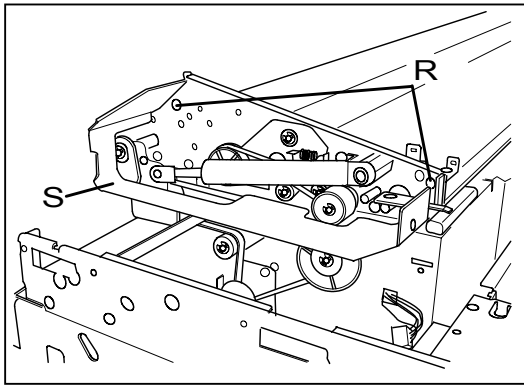


- 5) Disconnect the connector (N), remove 4 screws (P) with a long screwdriver, and then take out the Motor Assembly (Q).



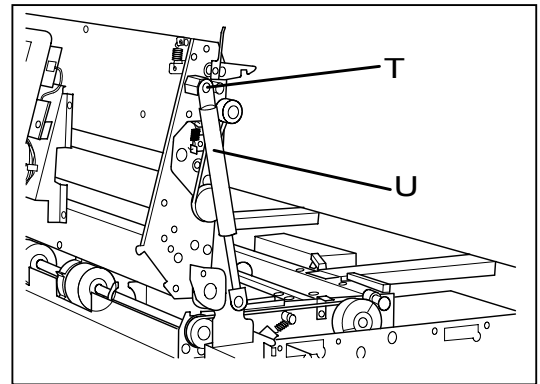
6) Close the Upper Unit.

Remove 5 screws (R) to remove Damper Covers (S) at both sides.

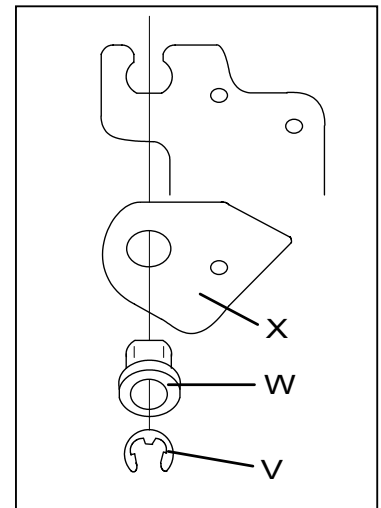
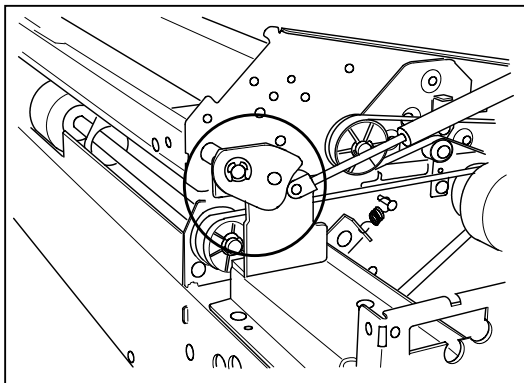


7) Remove screws (T) at both sides to make both Gas Springs (U) free.

**Note : If you make both Gas Springs (U) free,  
the Upper Unit will fall down.  
Therefore, support the Upper Unit with one  
hand.**

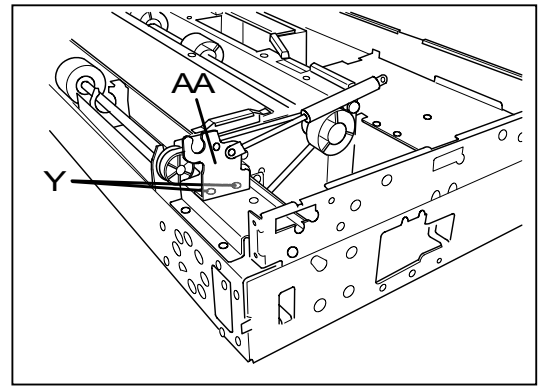


8) Remove E Rings (V) at both sides to remove Bearings (W) and Damper Stoppers (X).  
Then, remove the whole Upper Unit.

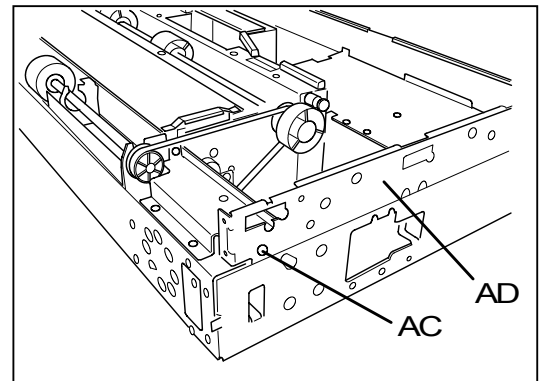
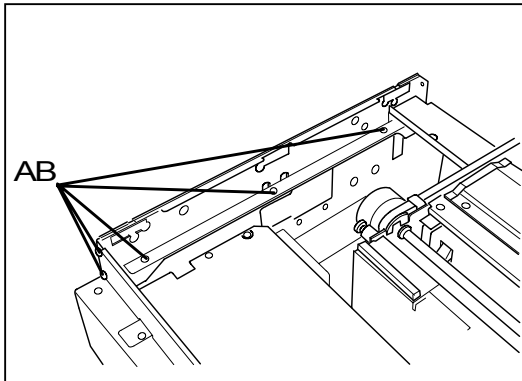




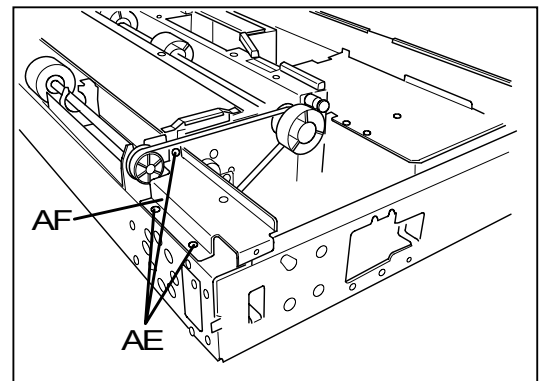
- 9) Remove 2 screws (Y) to remove each Fulcrum Bracket (AA) at both sides of the scanner.  
(Remove each Fulcrum Bracket together with the Gas Spring.)



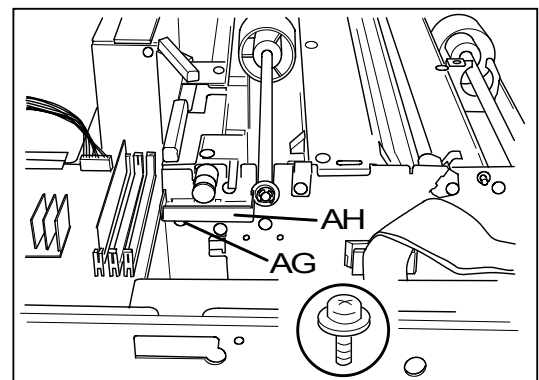
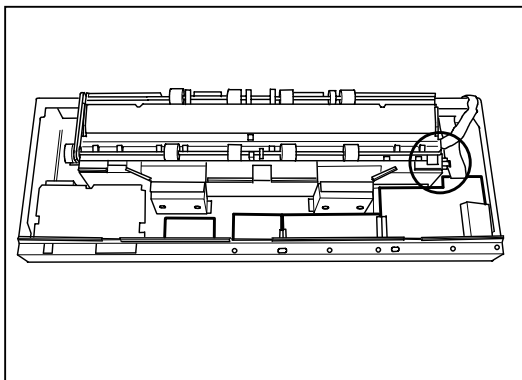
- 10) Remove 5 screws (AB) and one more screw (AC) outside to remove each Cover Plate (AD) at both sides of the scanner.



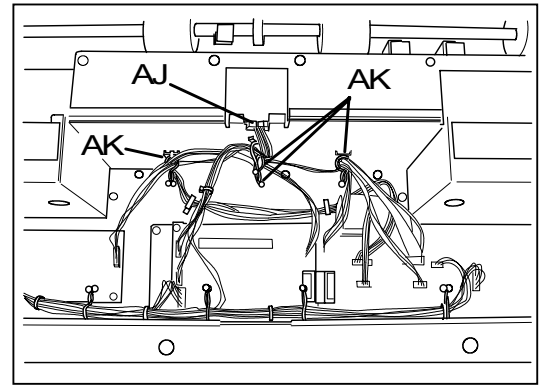
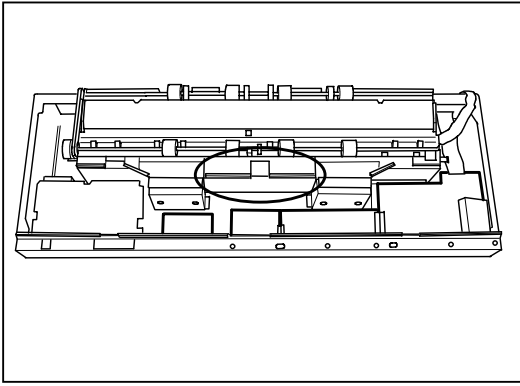
- 11) Remove 3 screws (AE) to remove each Fulcrum Bracket Stand (AF) at both sides of the scanner.



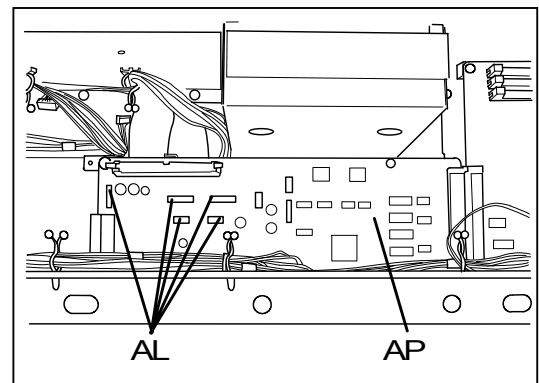
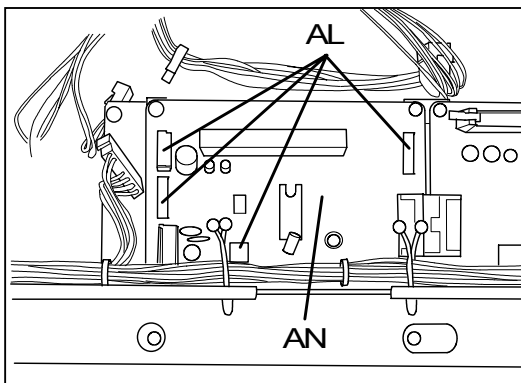
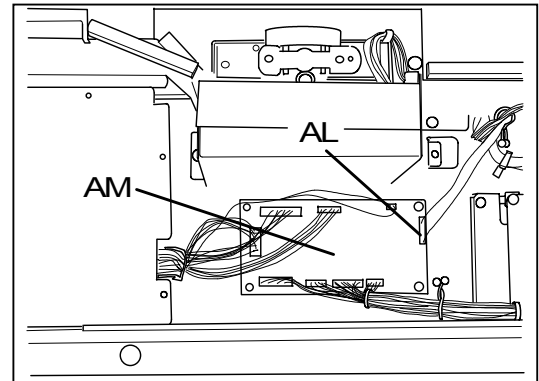
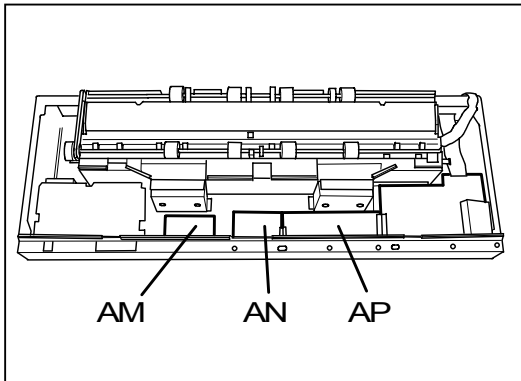
- 12) Remove the screw (AG) to remove the Tray 2 (AH) at the right of the scanner.



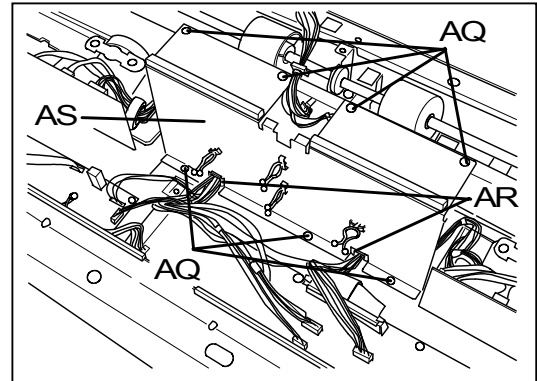
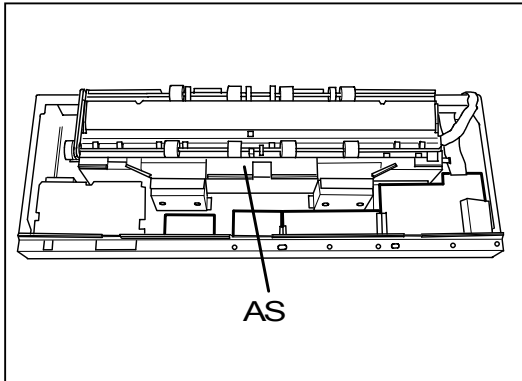
- 13) Remove the Edge Saddle (AJ) from the plate, and open 4 pieces of Tie Clamp (AK) to release all wires.



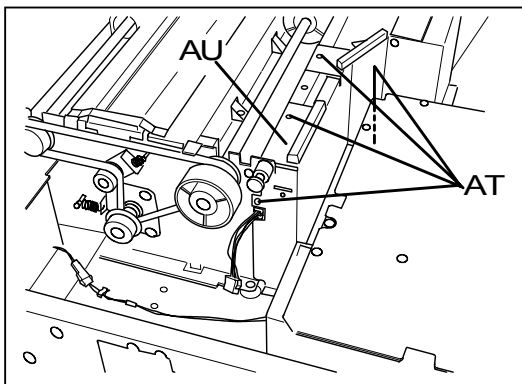
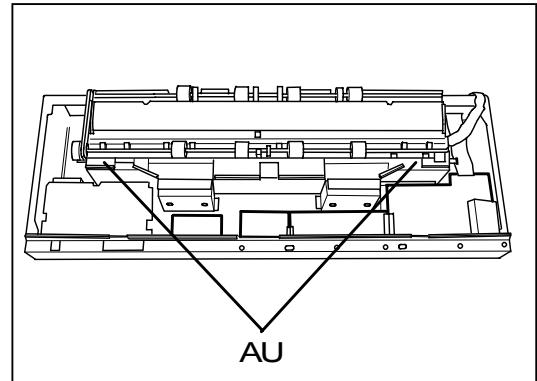
- 14) Disconnect 10 connectors (AL) from Power Terminal PCB (AM), Driver PCB (AN) and CPU PCB (AP).  
(Wires run from Feeder Assembly and Optical Unit.)



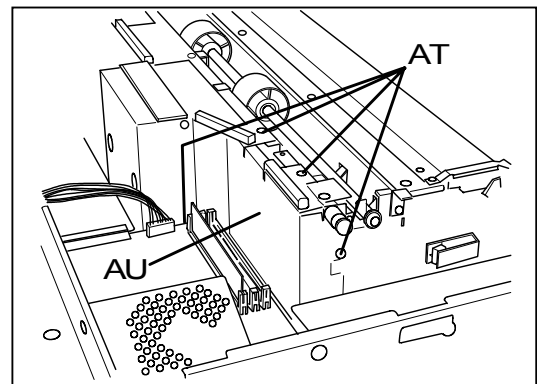
15) Remove 7 screws (AQ) and 2 Edge Saddles (AR) to remove the central Partition (AS).



16) Remove 4 screws (AT) to remove each Partition (AU) at both sides.

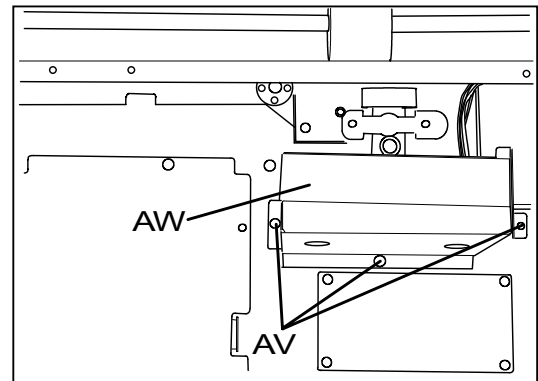
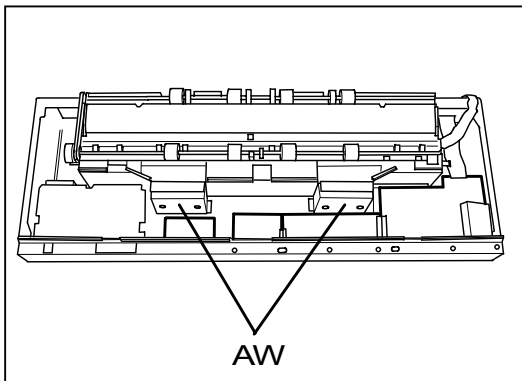


(Left side)

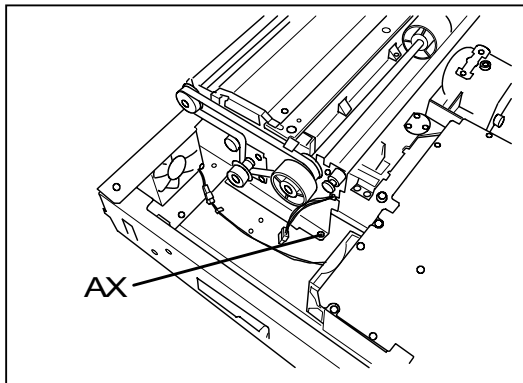


(Right side)

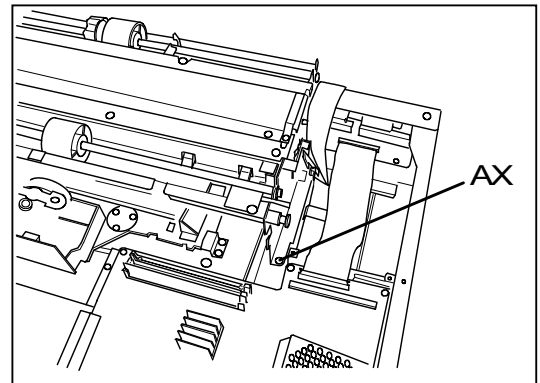
17) Remove 3 screws (AV) to remove each CCD Shield Case (AW).



18) Remove screws (AX) at both sides, which fix the Feeder Assembly.

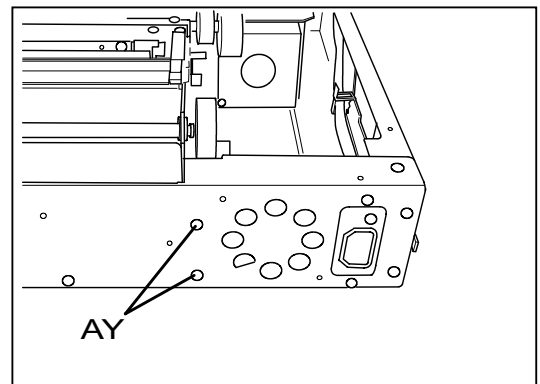
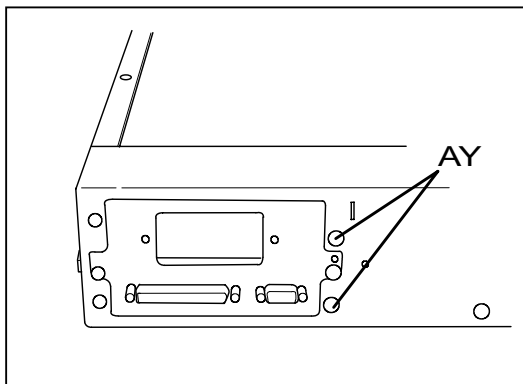


(Left side)

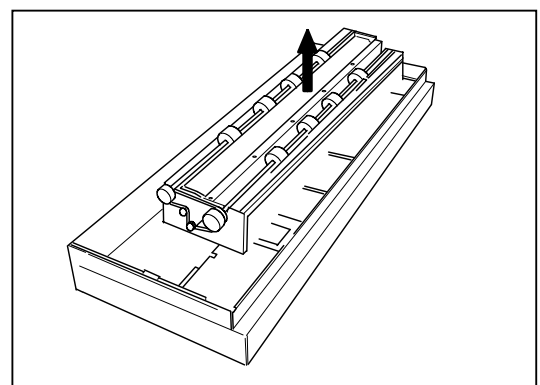
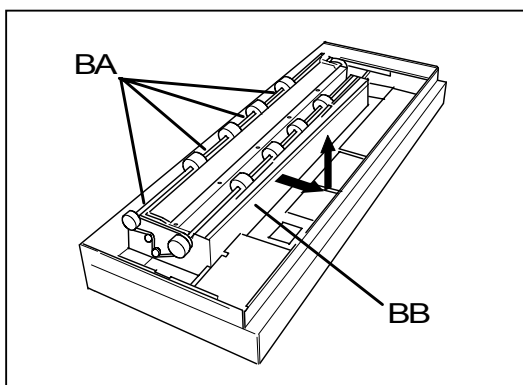


(Right side)

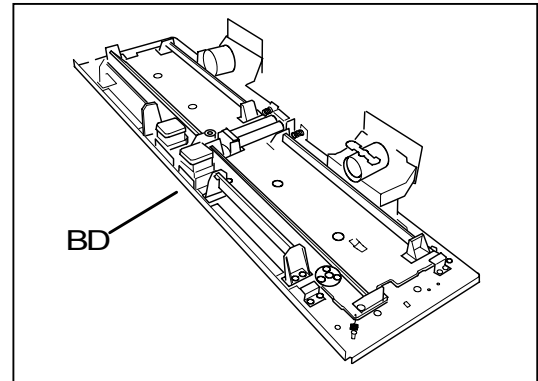
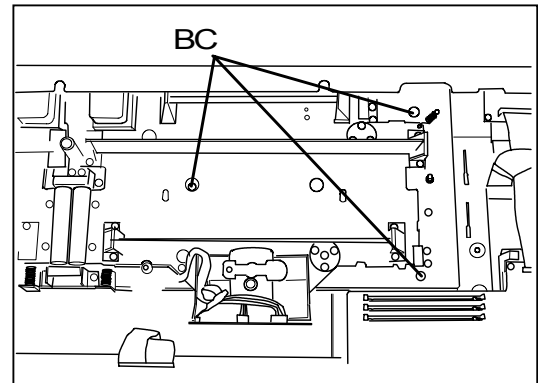
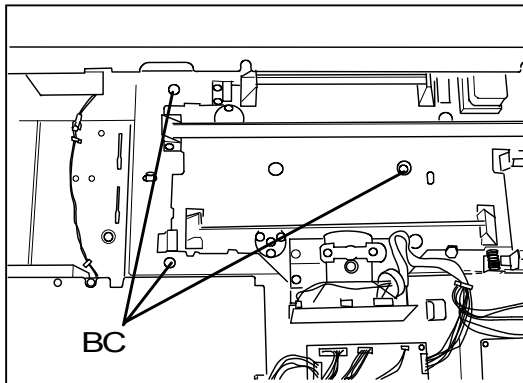
19) Remove 4 screws (AY) at the rear side of the machine, which fix the Feeder Assembly.



20) Remove 4 screws (BA) under the Rear Drive Roller, which fix the Feeder Assembly (BB). Slide the whole Feeder Assembly (BB) a little to the front side, and finally take out the Feeder Assembly (BB).

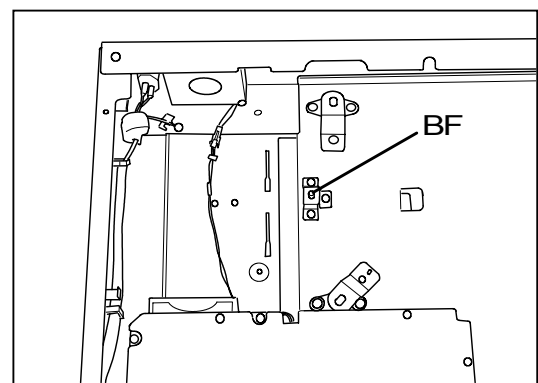
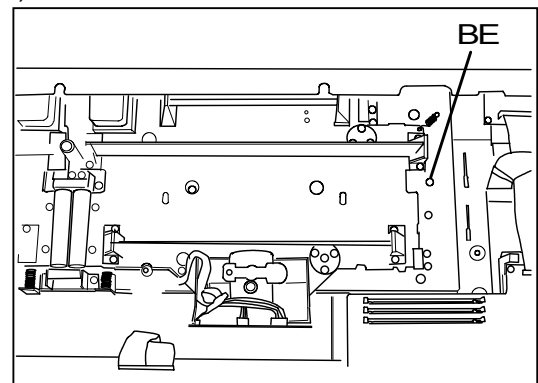
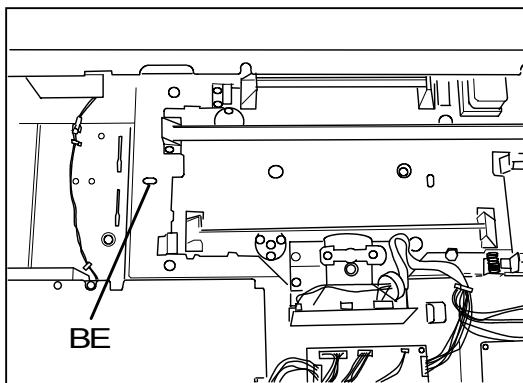


21) Remove 6 screws (BC) to remove the Optical Unit (BD) from the Base Unit.

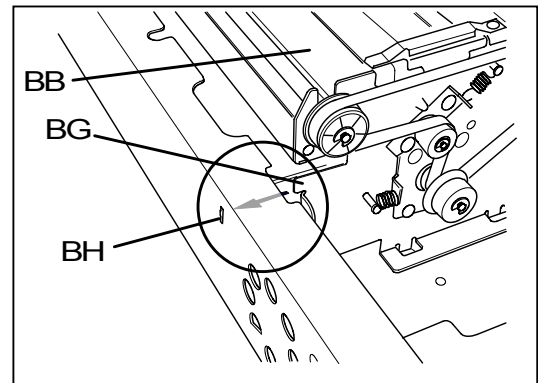
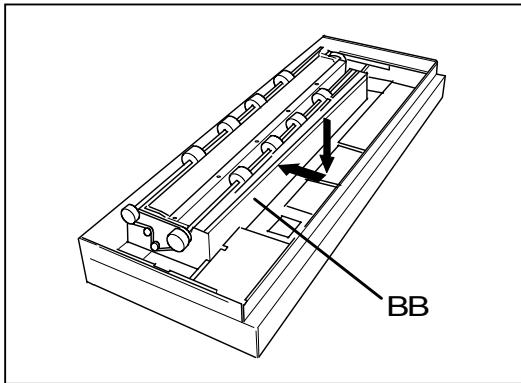


22) Install the new Optical Unit to the machine in the reversed order taking care of the following notes.

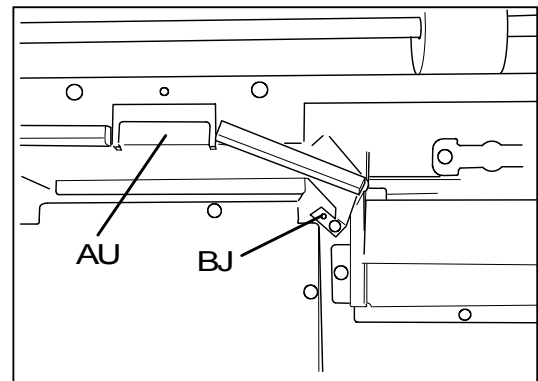
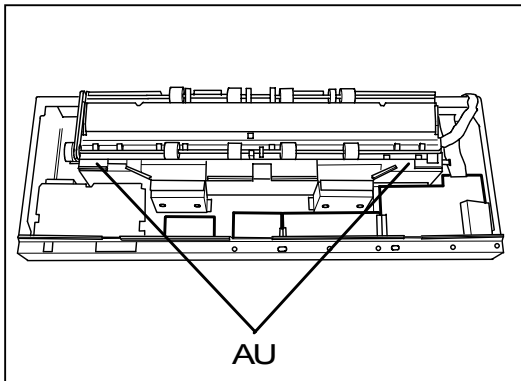
- (a) The Optical Unit has Positioning Holes (BE) at both sides.  
Make sure to fit these holes to Positioning Pins (BF) on Base Unit side.



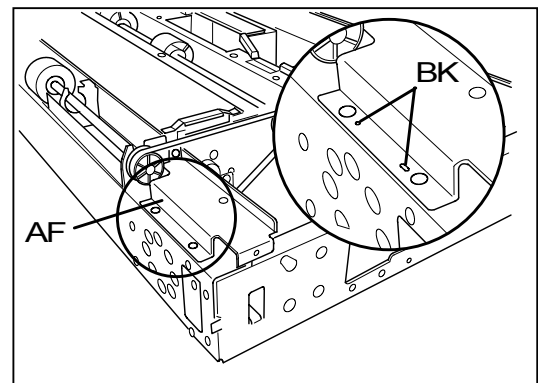
- (b) When you put back the Feeder Assembly (BB), insert its Positioning Projections (BG) to Positioning Slits (BH) on Base Unit side in order to place the Feeder Assembly properly.



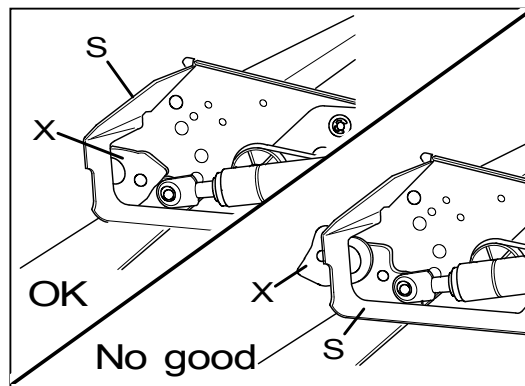
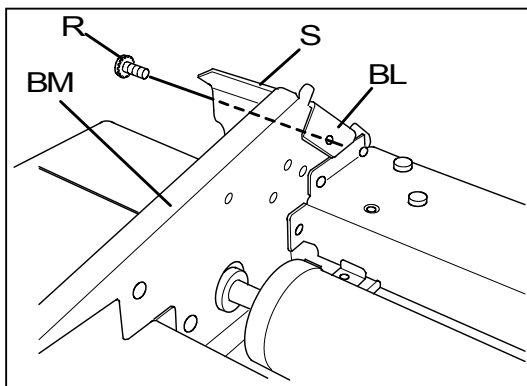
- (c) Each Partition (AU) has a Positioning Hole (BJ) near one screw hole. Make sure to fit this Positioning Hole to the Positioning Boss on Base Unit side.



- (d) When you put back the Fulcrum Bracket Stand (AF), fit its Positioning Holes (BK) to Positioning Bosses on Base Unit side, and then fix it tightening screws.

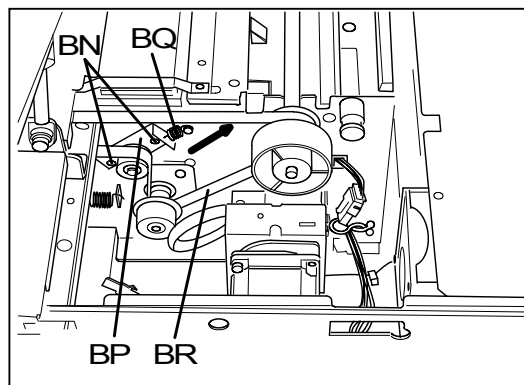


- (e) When you put back the Damper Cover (S), place its plate (BL) inside of the side plate (BM) of the Upper Unit and fix it with the screw (R) from the outside as the following left figure shows. And place the Damper Stopper (X) inside of the Damper Cover (S).



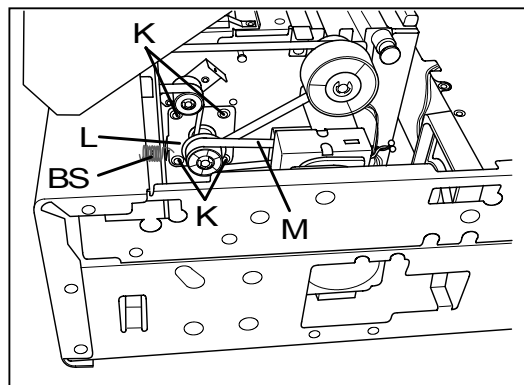
- (f) It is required to adjust the tension of each Drive Roller Timing Belt and Motor Timing Belt after putting back the Motor Assembly.  
Adjust the tension of Motor Timing Belt at first, then adjust that of Drive Roller Timing Belt as follows.

1. Loosen 2 screws (BN), move the Tension Plate B Assembly (BP) toward the arrow mark and remove the Tension Spring (BQ) to unfasten the Drive Roller Timing Belt (BR).



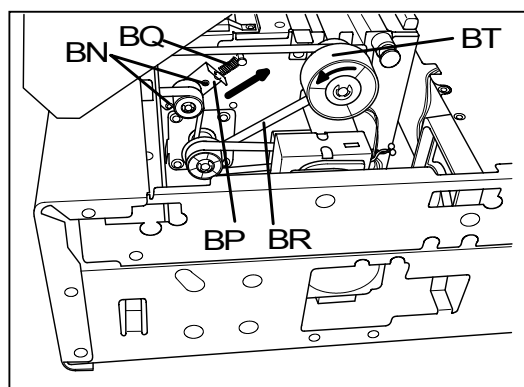
2. Stretch the Motor Timing Belt (M) to the Pulley of the Motor Tension Plate Assembly (L) while screws (K) are loosed.  
If you do so, the Motor Tension Plate Assembly (L) comes to a standstill being pulled by both Tension Spring (BS) and Motor Timing Belt (M).

Since this position of Motor Tension Plate Assembly (L) is best for the tension of Motor Timing Belt (M), fix it tightening screws (K).



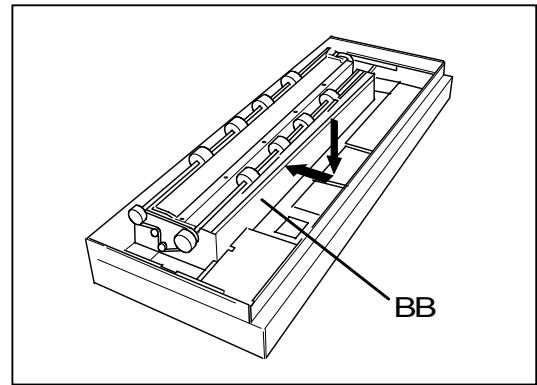
3. Put back the Tension Spring (BQ) pulling the Tension Plate B Assembly (BP) toward the arrow mark.  
Then, rotate the Coupling Roller (BT) a few revolutions counterclockwise.

The Tension Plate B Assembly (BP) comes to a standstill being pulled by both Tension Spring (BQ) and Drive Roller Timing Belt (BR). Since this position of Tension Plate B Assembly (BP) is best for the tension of Drive Roller Timing Belt (BR), fix it tightening screws (BN).



- (g) In case you have removed the Feeder Assembly (BB) in order to remove the Optical Unit, it is required to adjust the gap between White Roller and Original Glass properly. If you operate the machine without adjusting the gap, White Roller or Original Glass may be damaged.

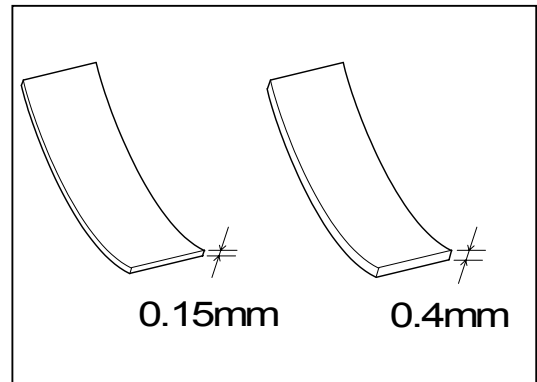
**So, make sure to adjust the gap in the following way whenever you remove the Feeder Assembly.**



1. Prepare 2 kinds of Gap Gauge. Mylar of 0.15mm thick and 0.4mm thick would be the best for the adjustment.

Note : Anything is available if the thickness is 0.15mm and 0.4mm.

But avoid the one made of hard material because you may scratch the White Roller or the Original Glass.



2. Remove both Top Cover and Rear Cover, and then measure the gap inserting each Gap Gauge between White Roller and Original Glass.

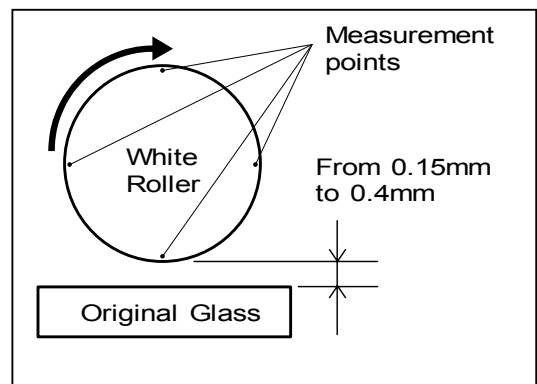
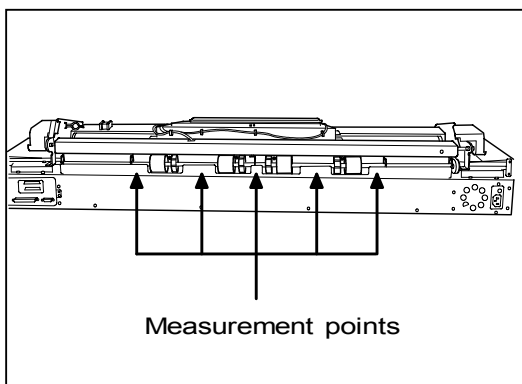
**The gap should be from 0.15mm to 0.4mm.**

So, the gap is too narrow if you can not insert the 0.15mm Mylar, and it is too wide if you can insert the 0.4mm one.

You have to make measurement at each of 5 measurement points which are shown in the following left figure.

And you also have to make measurement 4 times at each measurement point rotating the White Roller in a 90 degrees arc revolution because the White Roller may be bent.

If the proper gap is kept at every measurement point in every angle, you do not have to do adjustment.

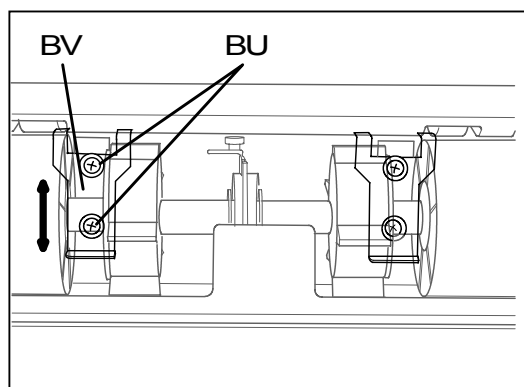
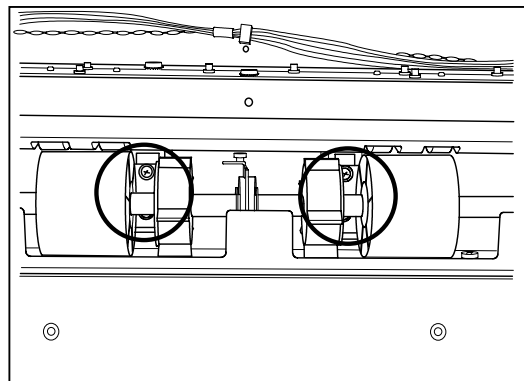
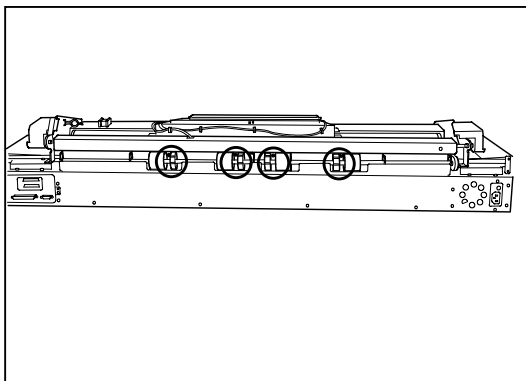




3. If the gap is not proper, adjust the gap moving 4 pieces of Original Glass Adjustment Bracket (BU).

Loosen 2 screws (BV), move each Original Glass Adjustment Bracket (BU) upward or downward, and then tighten screws (BV).

Note : Tighten the lower one of screws (BV) first.



- 23) When you have put back all parts to the machine, take copying and check the printed image. If the pixel is duplicating or lacking at the boundary part of both Reading Blocks, adjust Backup Data No.53 and No.54 to make the boundary part proper. As for this adjustment, refer to “Boundary setting (between Reading Blocks 1 and 2)” on the page 7-35.

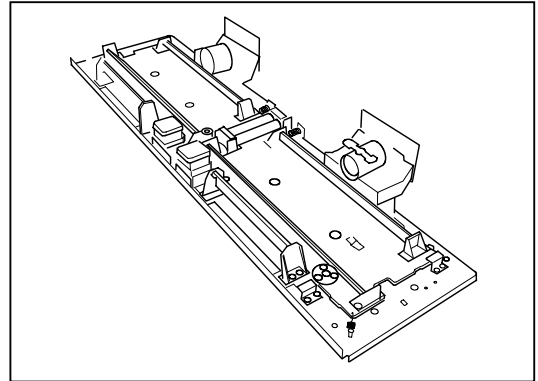
## 4.6.2 Replacing Optical Unit Drive Motor and Home Position Sensor PCB



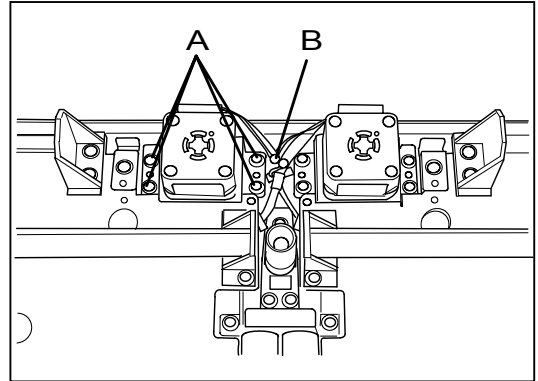
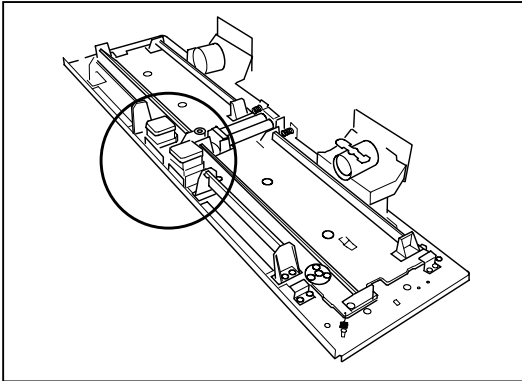
### WARNING

Make sure to disconnect the machine from the power source before disassembly. Otherwise, you may get an electric shock.

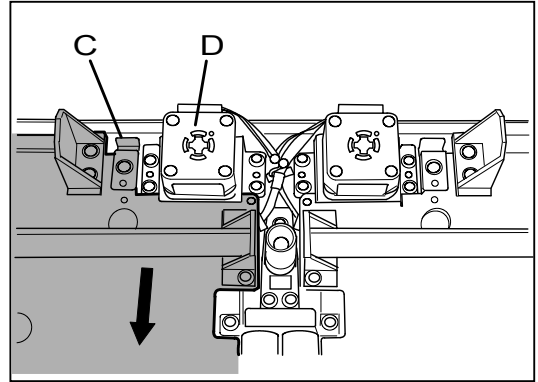
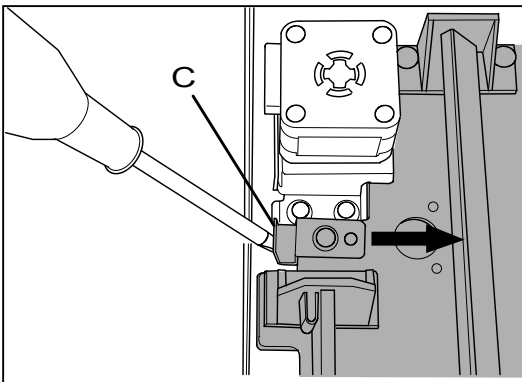
- 1) Take out the Optical Unit from the Base Unit making reference to “4.6.1 Removing the Optical Unit” on the page 4-90.



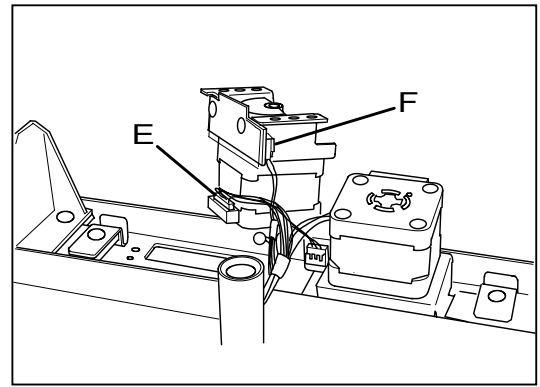
- 2) Remove 4 screws (A), and then release the wire from the Tie Clamp (B).



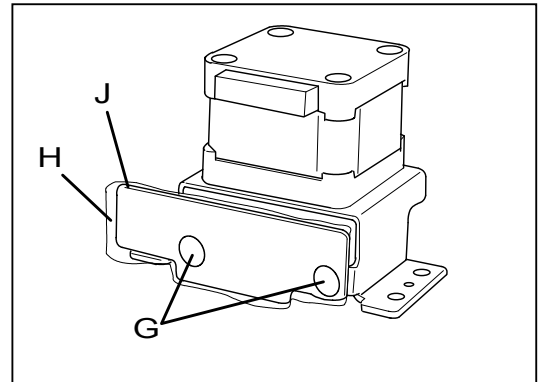
- 3) Slide each Optical Block (gray part in the figure) toward the arrow mark pressing the plate (C) with the screwdriver, and then remove each Optical Unit Drive Motor Assembly (D).



4) Disconnect both connectors (E) and (F).

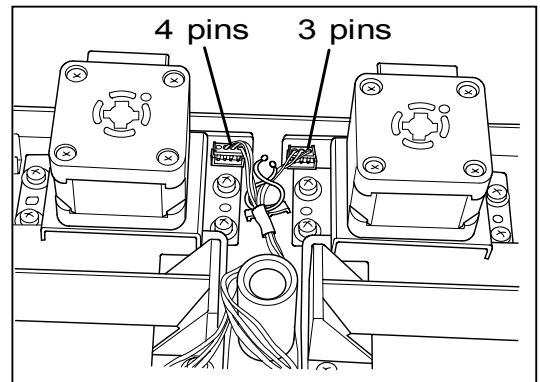


5) Remove 2 screws (G) to remove Insulation Mylar (H) and Home Position Sensor PCB (J).

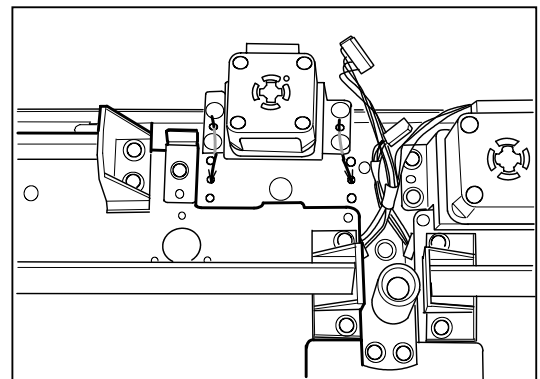
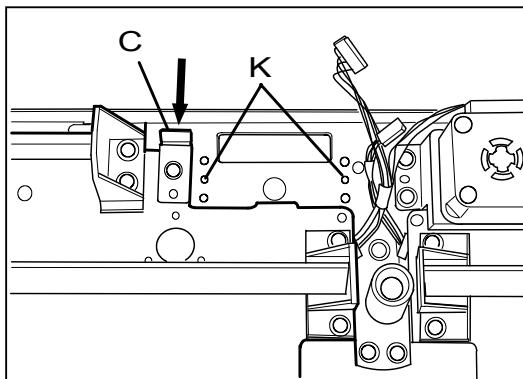


6) Install new Optical Unit Drive Motor and Home Position Sensor PCB in the reversed order taking care of the following note.

- (a) There are 2 kinds of Home Position Sensor PCB. One is Home Position Sensor 1 PCB (PW7581) which has a 3 pins connector, and the other is Home Position Sensor 2 PCB (PW7582) which has a 4 pins connector. Home Position Sensor 1 PCB (3 pins) must be right and Home Position Sensor 2 PCB (4 pins) must be left. Both connectors should be directed inward.

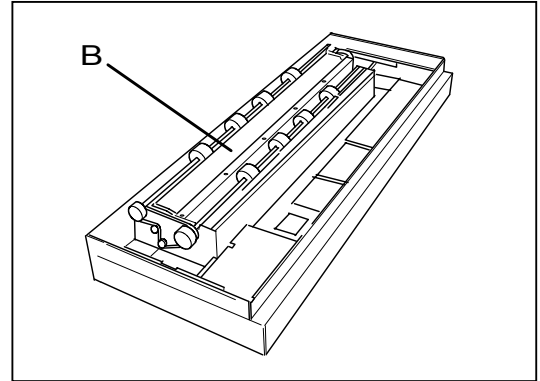
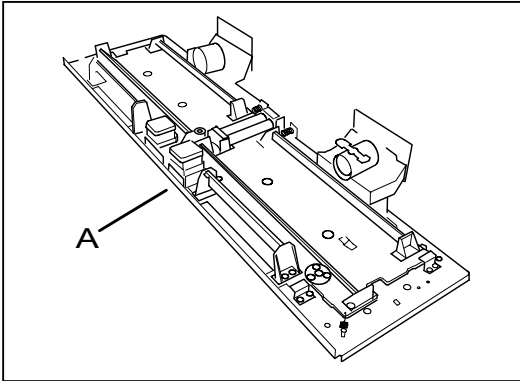


- (b) Slide the whole Optical Block toward the arrow mark pressing the plate (C) with the screwdriver, and then put back the Optical Unit Drive Motor Assembly fitting its positioning holes to positioning bosses (K) on Optical Unit side.

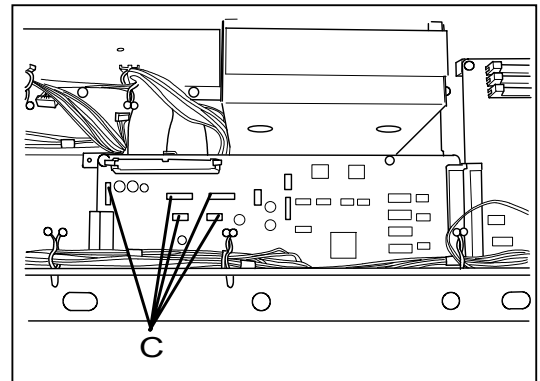
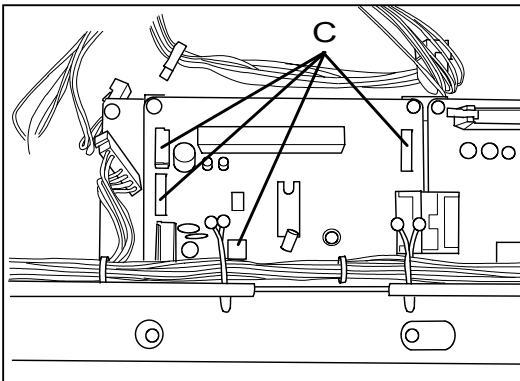
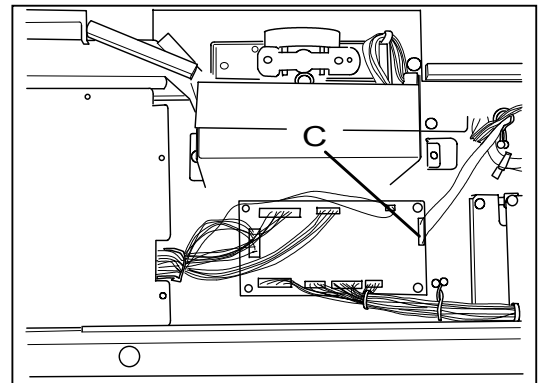
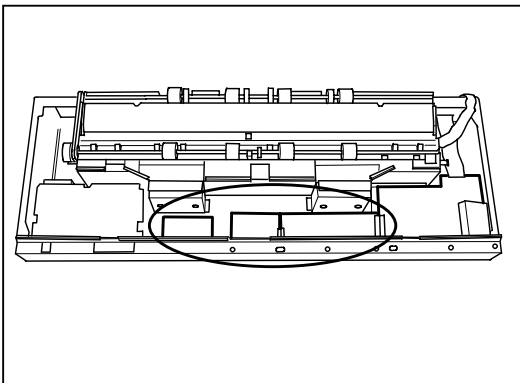


- (c) It is possible to check whether or not the Optical Unit Drive Motor works properly before re-assembling the machine completely.  
(If you find the motor does not work properly after re-assembling the machine completely, it will take a great time to find the cause.)

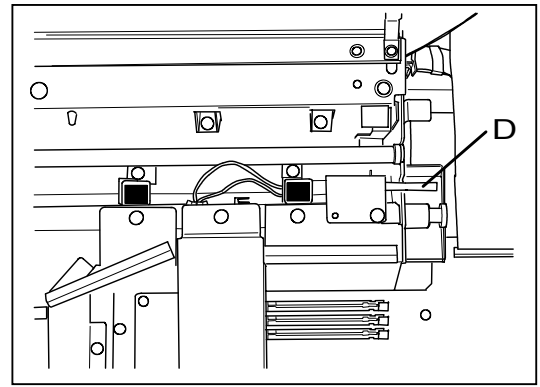
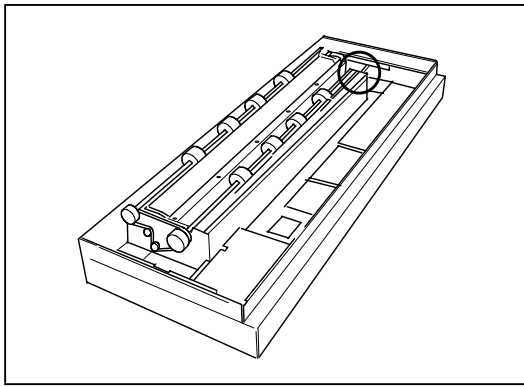
1. Put back both Optical Unit and Feeder Assembly.



2. Connect 10 connectors (C) coming from Optical Unit and Feeder Assembly.

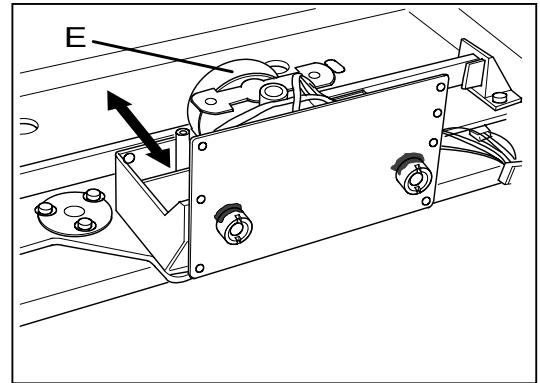


3. Connect the Power Cord to the machine.  
Press down and hold the Micro Switch (D), and then turn on the machine.



4. Both Lens Units (E) will move forward and backward, and then stay for a while. Then, they will go to the rear side. Finally, they will come back to the front side little by little.

If Lens Units move as the above, Optical Unit Drive Motors are working properly.



5. Disconnect the Power Cable from the machine, and then re-assembly the machine.

- 7) When you have put back all parts to the machine, take copying and check the printed image. If the pixel is duplicating or lacking at the boundary part of both Reading Blocks, adjust Backup Data No.53 and No.54 to make the boundary part proper. As for this adjustment, refer to "Boundary setting (between Reading Blocks 1 and 2)" on the page 7-35.

## 4.7 Replacement and Adjustment of CCD PCB



### CAUTION

After replacing the CCD PCB, you must adjust the positions of Lens and CCD PCB very finely using the oscilloscope.

If you do not have the oscilloscope or if you are not skillful in operating it, we do not allow you not only to replace the CCD PCB but also to loosen just one screw of the Optical Unit because you will spoil the factory adjustment and it will be impossible for you to recover it.

**Please send back the whole Optical Unit to the manufacturer for repair if you are not sure of the adjustment.**

### 4.7.1 Replacing the CCD PCB

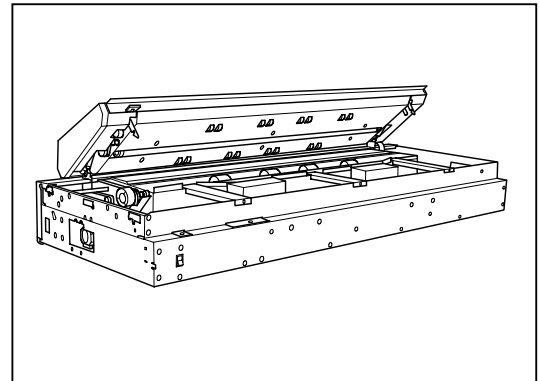
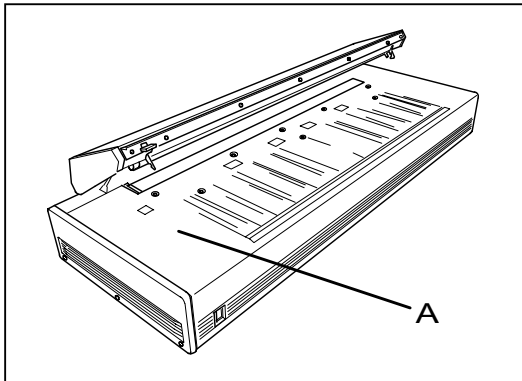


### WARNING

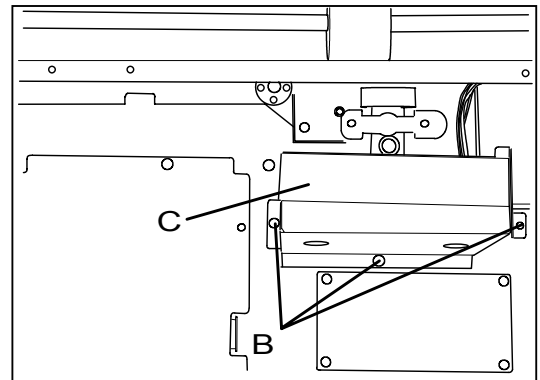
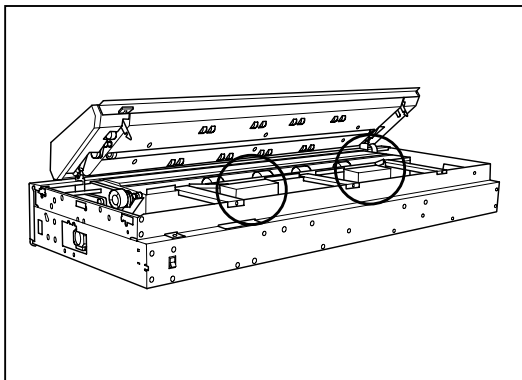
Make sure to disconnect the machine from the power source before disassembly. Otherwise, you may get an electric shock.

- 1) Take off the Original Table (A) making reference to “4.2.2 Removing the Original Table” on the page 4-4.

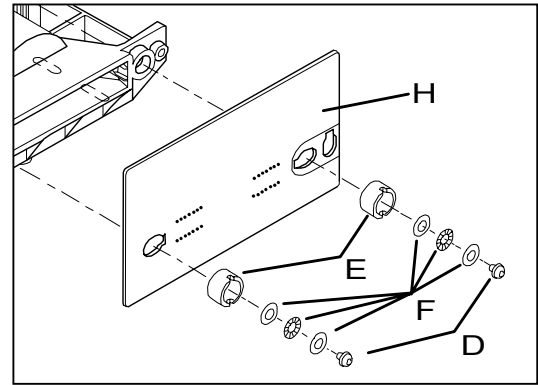
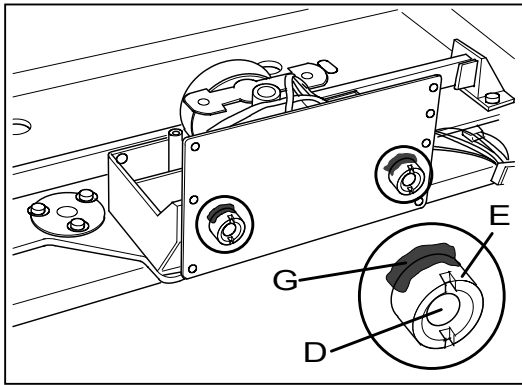
Note : It is possible to replace the CCD PCB without removing the whole Optical Unit.  
Therefore, you do not have to remove it from the Base Unit.



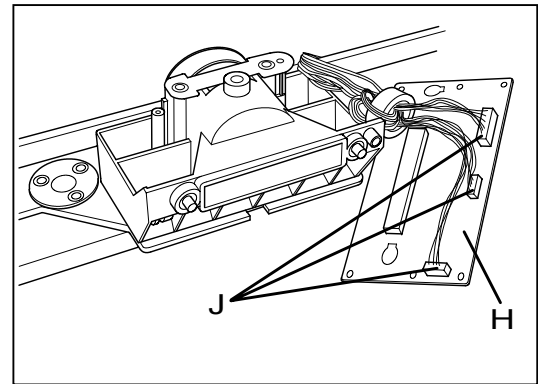
- 2) Remove 3 screws (B) to remove each CCD Shield Case (C) at both sides.



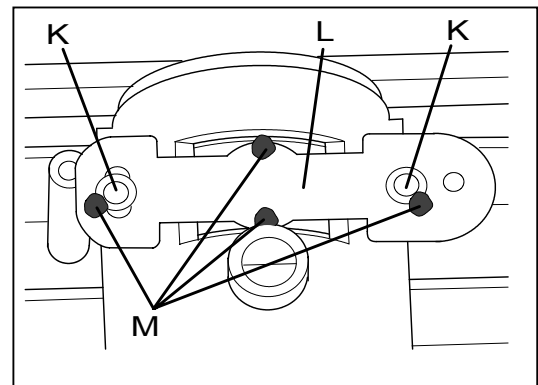
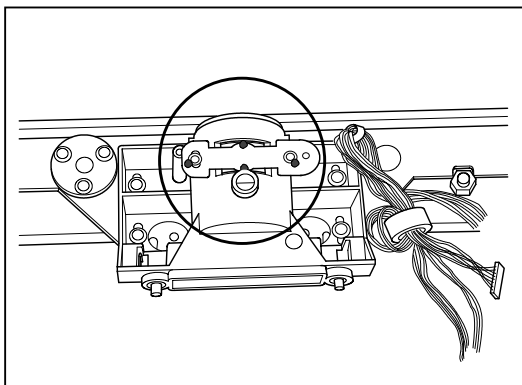
- 3) Remove screws (D) to remove 2 pieces of Eccentric Cam (E) and 6 pieces of Washer (F). Remove the old Locking Paint (G) from Eccentric Cams (E) and CCD PCB (H) at this time.



- 4) Disconnect 3 connectors (J) to remove the CCD PCB (H).

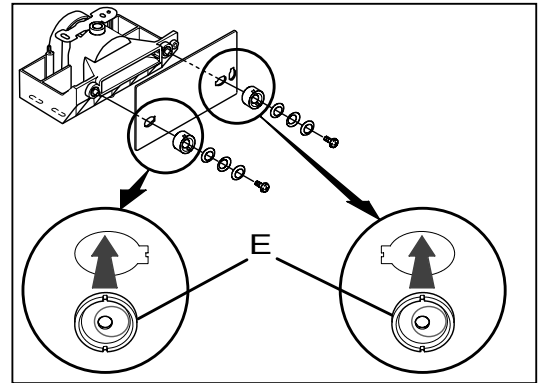
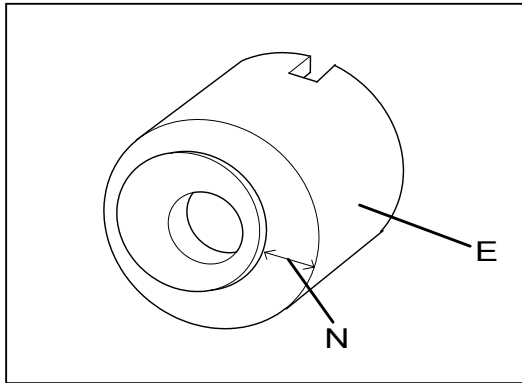


- 5) Remove 2 screws (K) to remove the Lens Holding Plate (L), and then remove the old Locking Paint (M). Put back the Lens Holding Plate (L) and fix it with screws (K) again after removing the Locking Paint (M).

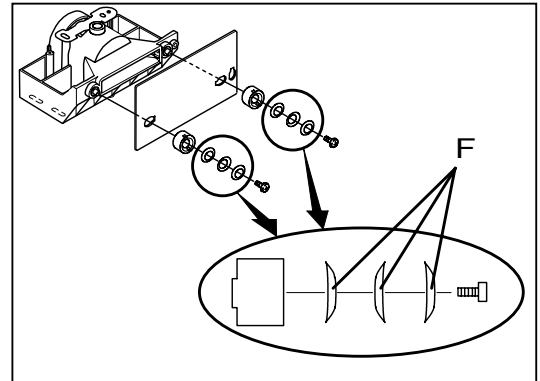


6) Install the new CCD PCB in the reversed order taking care of the following notes.

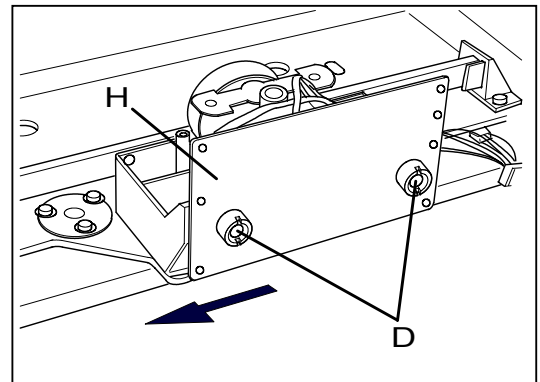
- (a) Be careful of the direction of Eccentric Cams (E).  
The wider side (N) must be directed to the left as the following figure.



- (b) Be careful of the directions of Washers (F).  
Only the central one has to be directed oppositely with the other ones.



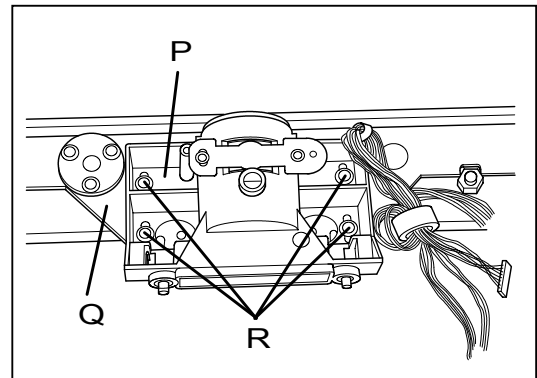
- (c) Slide the CCD PCB (H) fully to the left as the arrow mark, and then fix it tightening screws (D).



## CAUTION

The position of CCD Base (P) has been properly adjusted and fixed to the Aluminum Base (Q) with 4 pieces of screw (R) before shipment. If you move the position of CCD Base (P) loosening screws (R), it is impossible to re-adjust the position in the service field.

**Do not loosen screws (R) positively.**  
**Otherwise, you have to send back the whole Optical Unit to us for repair.**  
**Note that the repair is out of our guarantee.**



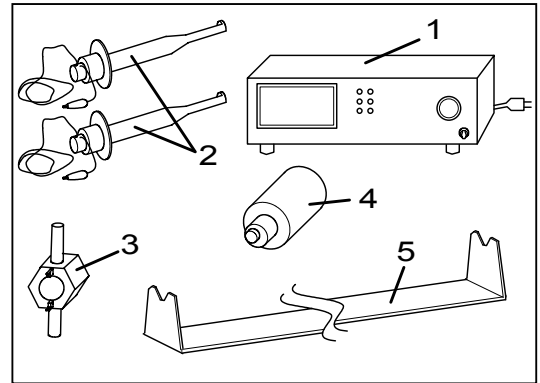


## 4.7.2 Adjusting the CCD PCB

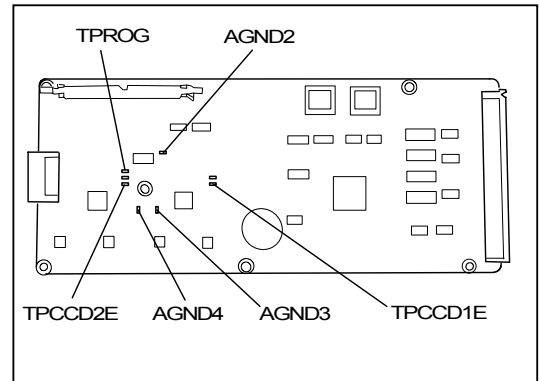
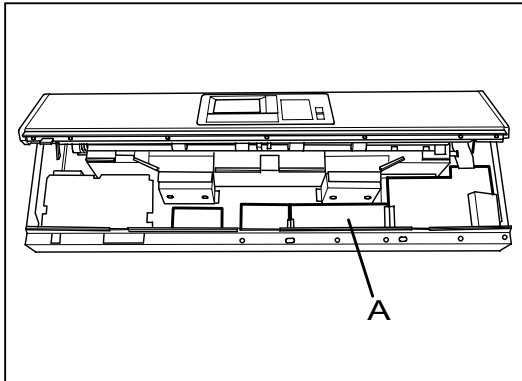
### A. Preparation for the adjustment

Prepare the following equipment and jigs for the adjustment.

- 1 : Oscilloscope
- 2 : Probe with ground picker (2 pieces)
- 3 : Cam Positioning Jig
- 4 : Eccentric Cam 2 Jig
- 5 : Adjustment Chart Jig



- 1) There are Test Pins "TPCCD1E", "TPCCD2E", "TPROG", "AGND2", "AGND3" and AGNG4" on the CPU PCB (A), which are used to adjust the CCD PCB.  
Confirm where they are before starting the adjustment.

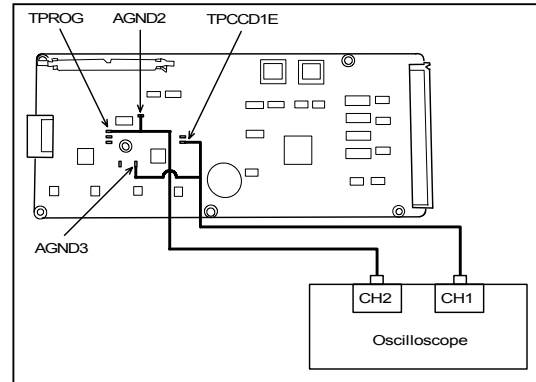
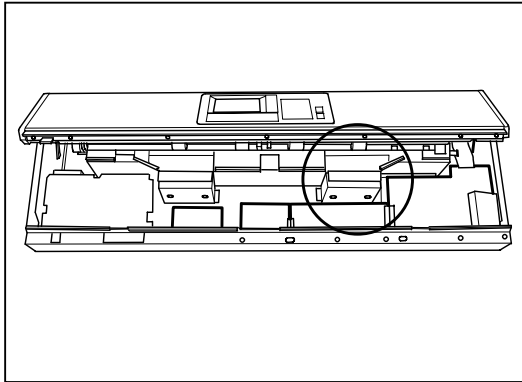


CPU PCB (A)

2) Connect the probes to the Test Pins according to the CCD PCB you will adjust.

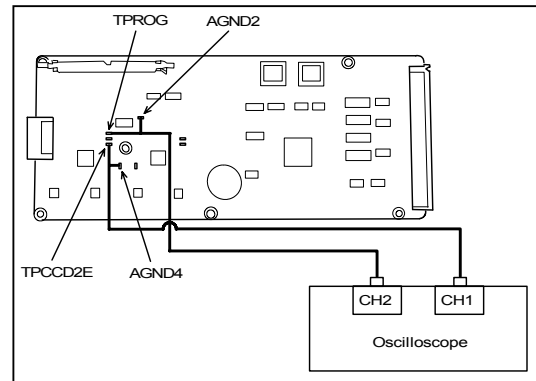
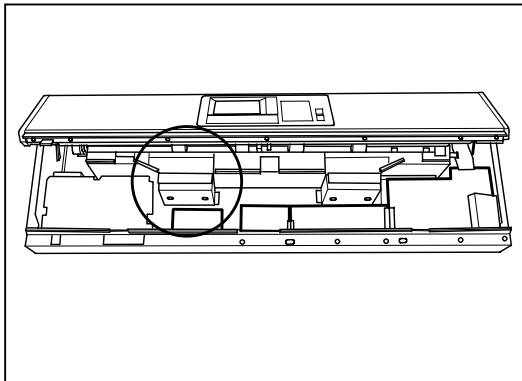
(a) When you will adjust the Right CCD PCB, connect probes and ground pickers as follows.

Probe CH1	—————	TPCCD1E
Ground Picker CH1	—————	AGND3
Probe CH2	—————	TPROG
Ground picker CH2	—————	AGND2



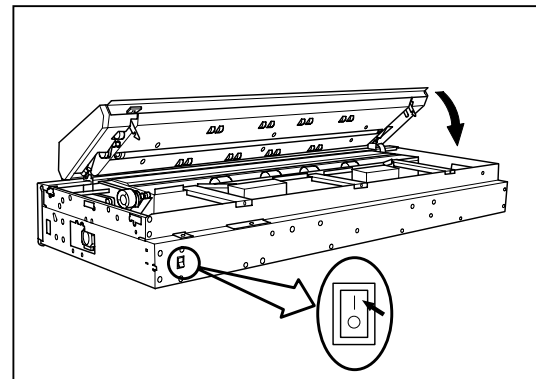
(b) When you will adjust the Left CCD PCB, , connect probes and ground pickers as follows.

Probe CH2	—————	TPCCD2E
Ground Picker CH2	—————	AGND4
Probe CH2	—————	TPROG
Ground picker CH2	—————	AGND2



3) Turn on the scanner while the Original Table is removed.

Note : If the Adjustment Chart Jig is on the Original Glass at the time you turn on the scanner, "An error occurred" will be indicated. Remove the Adjustment Chart Jig and then turn on the scanner again in this case.

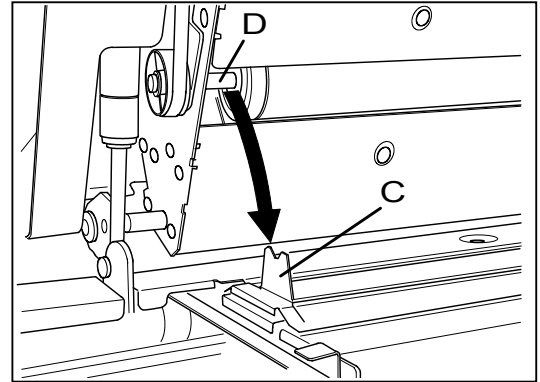
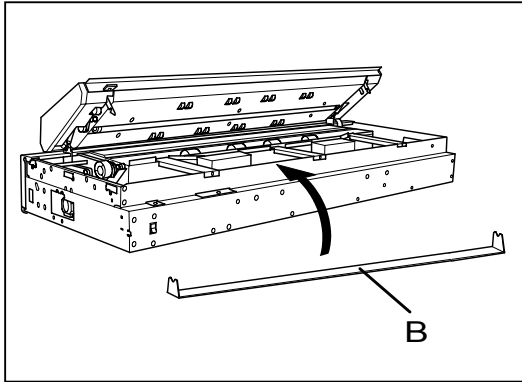


- 4) Wait until the scanner gets ready.

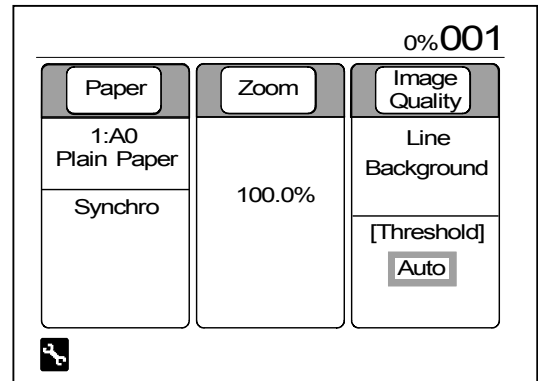
When it gets ready and the Basic Screen is indicated on the LCD, open the Upper Unit, put the Adjustment Chart Jig (B) at the horizontal center of the Original Glass, and then close the Upper Unit.

Note : If you close the Upper Unit, the plates (C) at both sides of the Adjustment Chart Jig catch the shaft (D) of the White Roller.

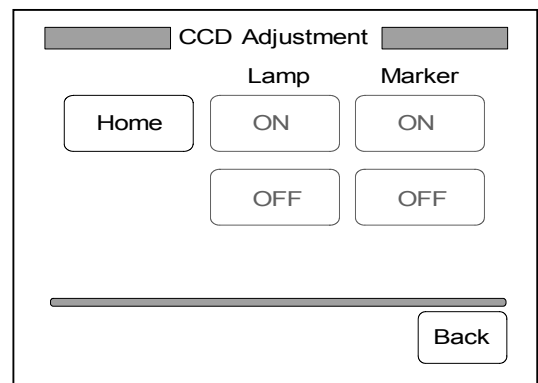
By this, the Adjustment Chart Jig is placed at the proper position.



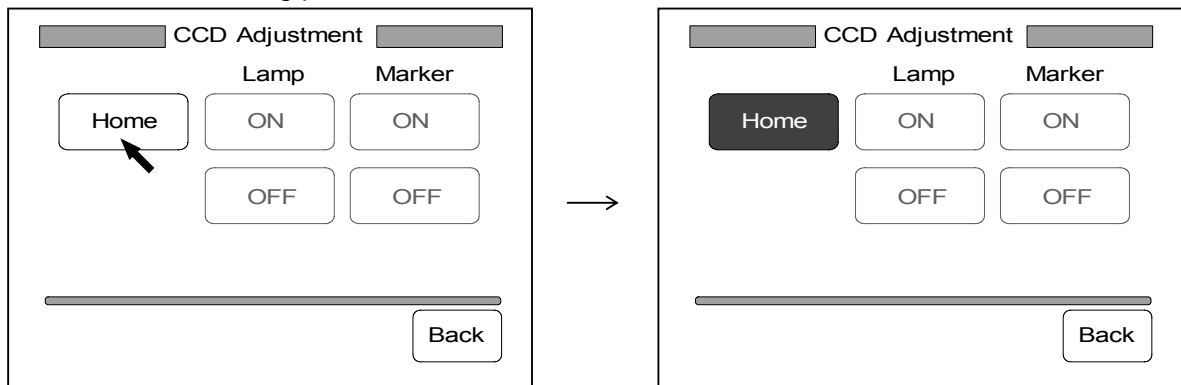
- 5) Enter the Service Mode making reference to "7.2 Entering the Service Mode" on the page 7-2.



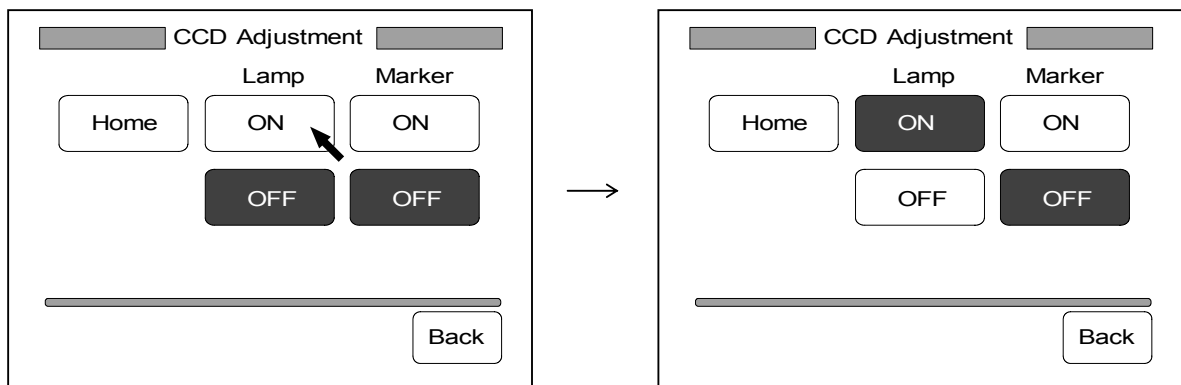
- 6) Select the CCD Adjustment Mode making reference to "7.8 CCD Adjustment Mode" on the page 7-103.



- 7) Press “Home” to place both Optical Blocks 1 and 2 of the Optical Unit at the Home Position.  
“Home” is colored during placement.



- 8) When both Optical Blocks have been placed at the Home position and Optical Unit Drive Motors have stopped rotating, “Home” on the LCD is not colored any longer.  
Since the indicators below “Lamp” and “Marker” become valid, press “ON” below “Lamp” to make lamps (Cold Cathode Ray Tubes) light up.  
“ON” is lighting up when lamps are lighting up.



- 9) Turn on the oscilloscope, and then change its observational settings properly according to your oscilloscope.

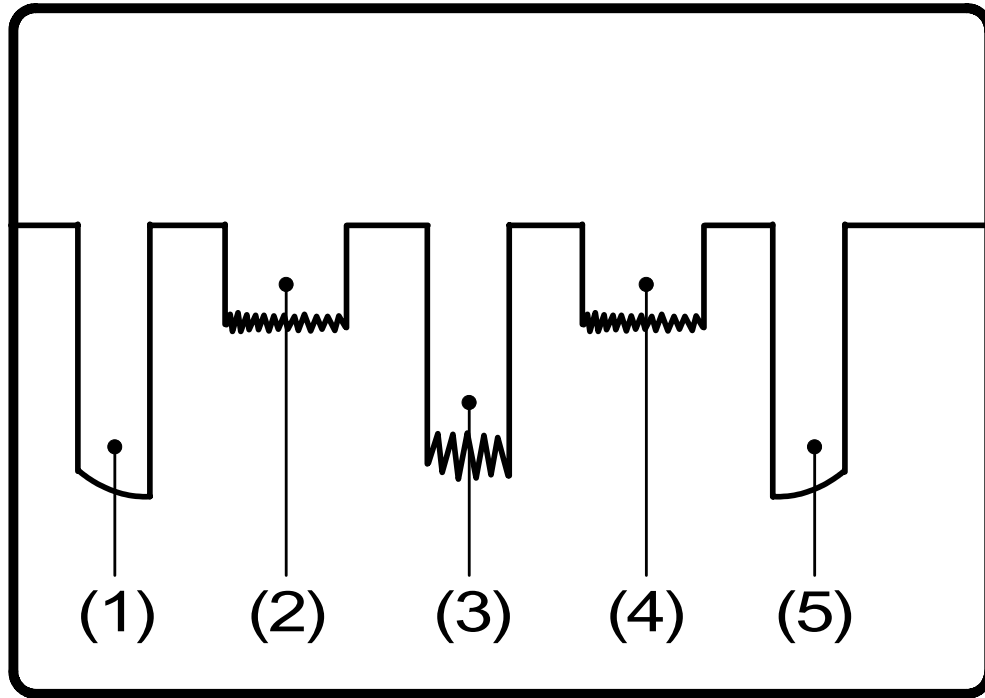
For your reference, we will introduce you the settings we usually select in the factory.

Please select the similar kind of setting condition.

CH1 ————— 200mV  
CH2 ————— 5V  
Time ————— 50 microseconds (“20 microseconds”, “x10” and “Delay” are used.)  
Trig ————— CH2

The following kind of signal pattern will be indicated with the above settings.

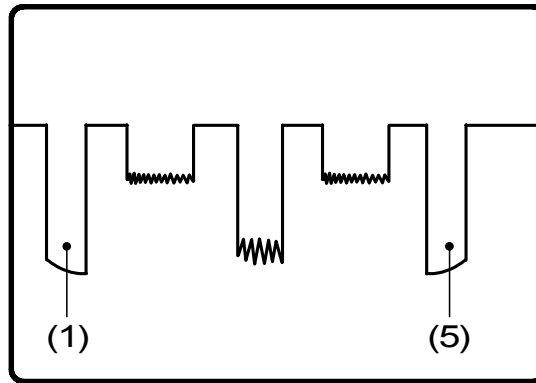
We will divide this signal pattern into 5 main parts as follows.



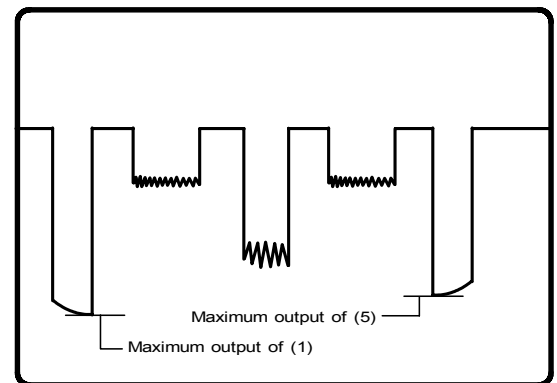
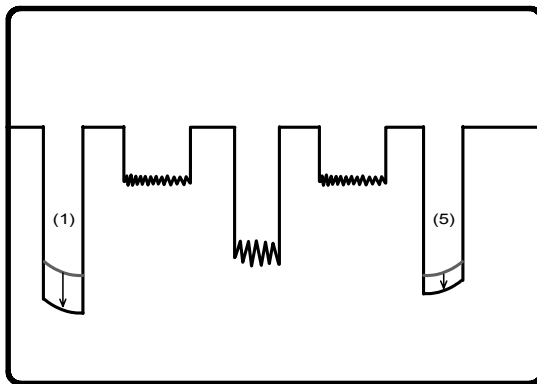
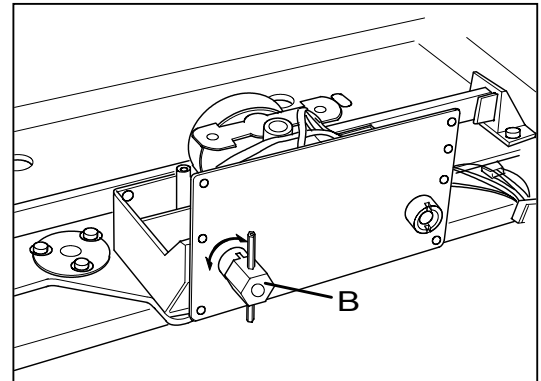
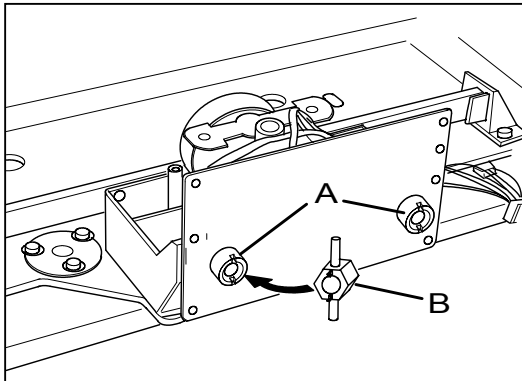
- 10) You have finished to prepare for the adjustment.  
Go on to the next page.

## **B. PCB position rough adjustment**

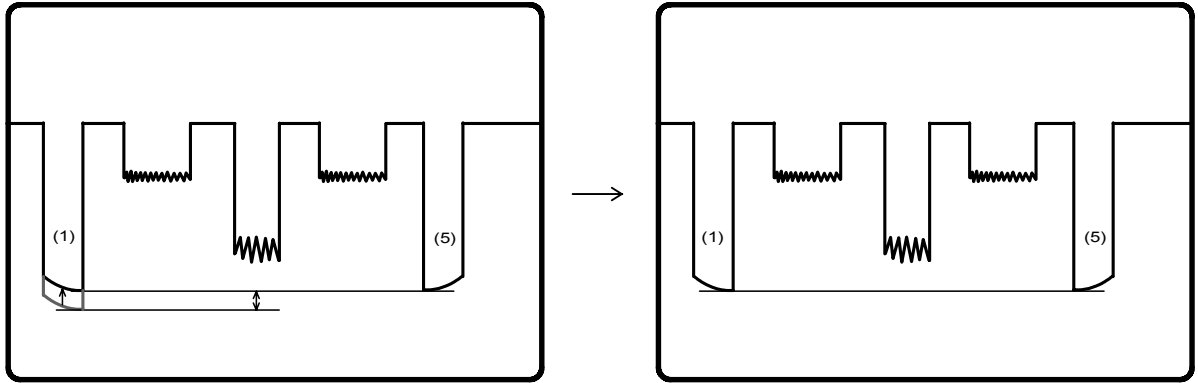
It is required to balance both (1) and (5) of the signal pattern at first in order to decide the position of CCD PCB roughly.



- 1) Outputs of both (1) and (5) are increased or decreased if you rotate Eccentric Cams (A) with the Cam Positioning Jig (B).  
Increase both outputs (1) and (5) up to the maximum level at first.

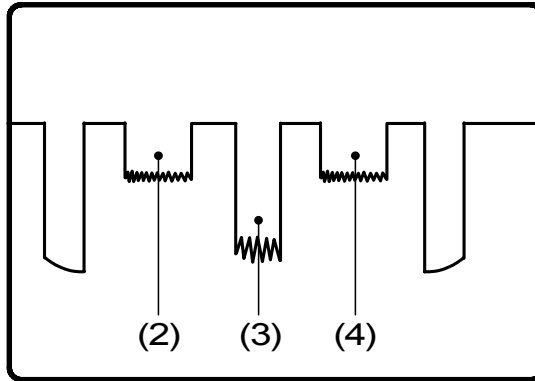


- 2) Decrease the output of higher side in order to balance with that of the lower side.  
In case of this example, decrease the output (1) down to the output (5) rotating the left one of Eccentric Cams (A).  
The position of CCD PCB has been decided roughly by this treatment.



### C. Lens focus adjustment

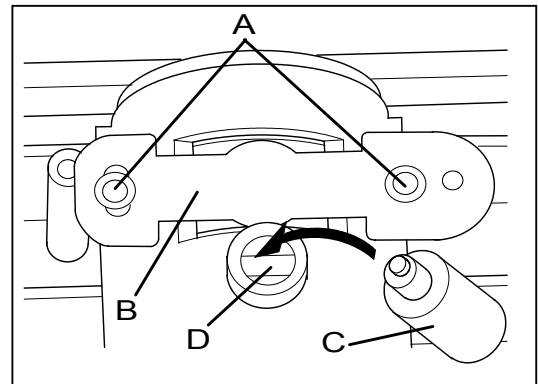
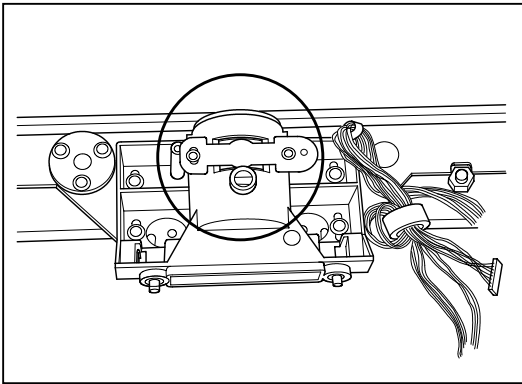
In order to adjust the best lens focus, it is required to move the lens monitoring (2), (3) and (4) of the signal pattern.



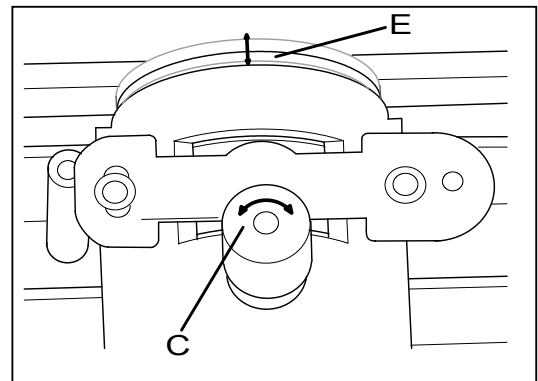
- 1) Rotate 2 screws (A) a little counterclockwise to unfasten the Lens Holding Plate (B). Then, fit the Eccentric Cam 2 Jig (C) firmly to the hole (D).

Note : Do not loosen screws (A) so much.

If you do so, the lens will be easily moved from the best position during the adjustment.



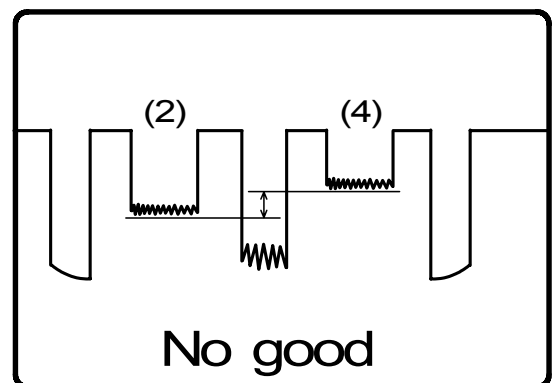
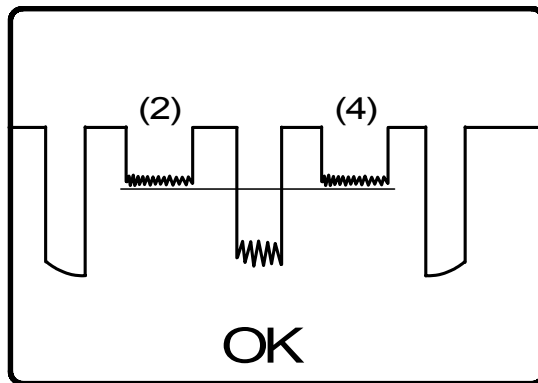
- 2) If you rotate the Eccentric Cam 2 Jig (C), the Lens (E) is moved forward and backward.



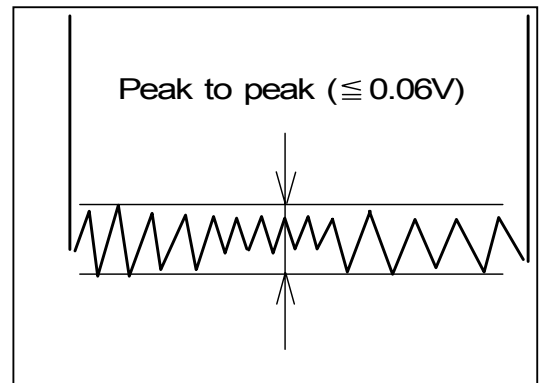
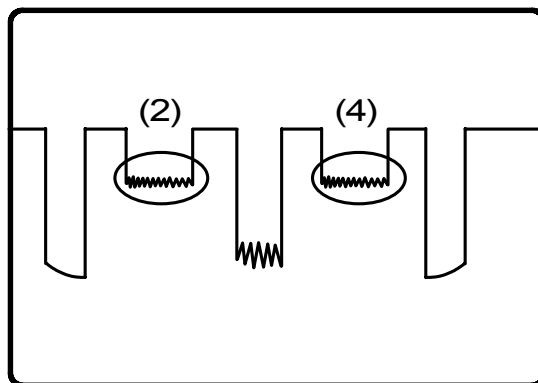


- 3) Monitor the signal pattern on the oscilloscope moving the Lens rotating the Eccentric Cam 2 Jig.  
Find the best lens position where all of the following 4 kinds of ideal condition are satisfied.  
When you find it, stop rotating the Eccentric Cam 2 Jig.

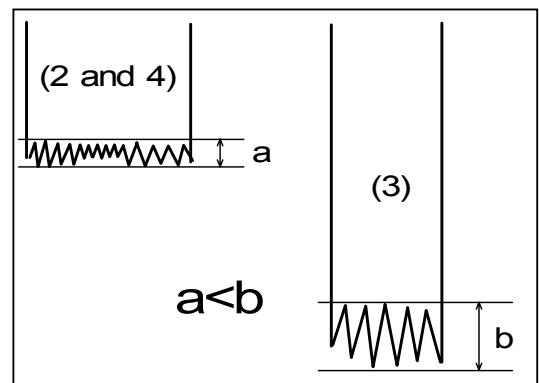
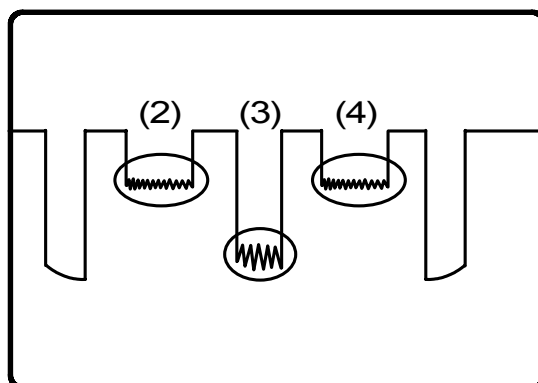
Condition 1 : Output levels of both (2) and (4) have to be balanced.



Condition 2 : The peak to peak voltage of (2) and (4) have to be almost 0.06V or larger.



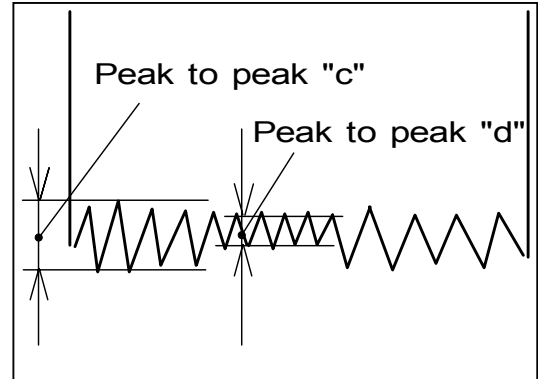
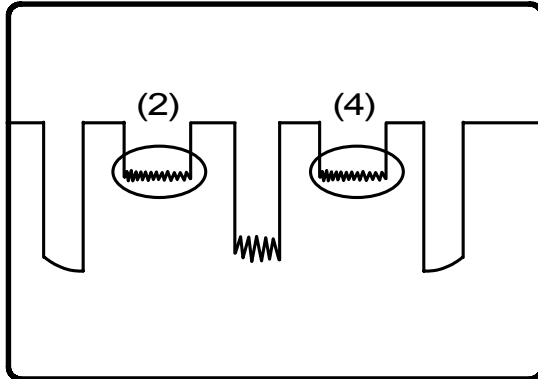
Condition 3 : The peak to peak voltage "b" of (3) has to be larger than the peak to peak voltage "a" of (2) and (4).



Condition 4 : Increase the zoom ratio of the oscilloscope to see both (2) and (4) more precisely, and then compare the peak to peak voltages “c” at side parts and “d” at the central part with each other.

The following formula has to be satisfied.

$$\frac{c-d}{c} \times 100 \leq \pm 30\%$$



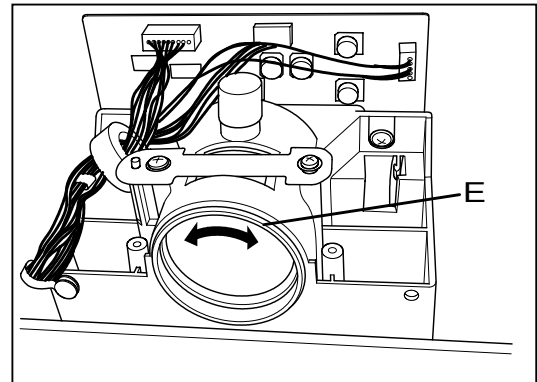
(Note)

When the above condition 4 is not satisfied, move the Lens (E) to the left or to the right little by little by hand.

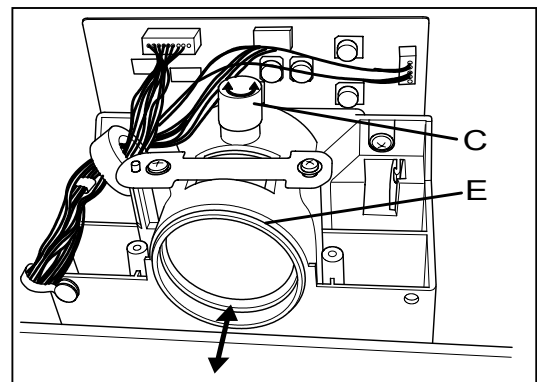
If you do so, the above condition 4 will be satisfied.

After satisfying the condition 4, move the Lens (E) forward or backward rotating the Eccentric Cam 2 Jig (C) so that the other conditions 1, 2 and 3 should be satisfied.

(Move the Lens to the left or to the right first.)

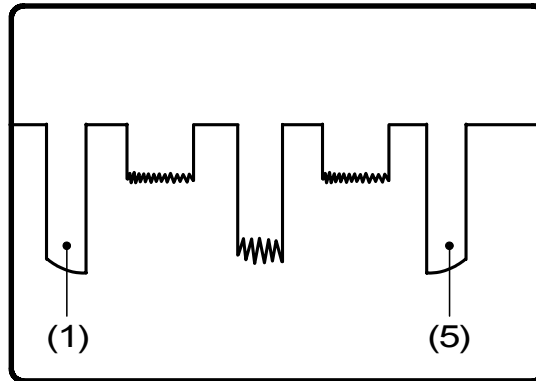


(Then, rotate the Eccentric Cam 2 Jig.)



#### D. PCB position precise adjustment

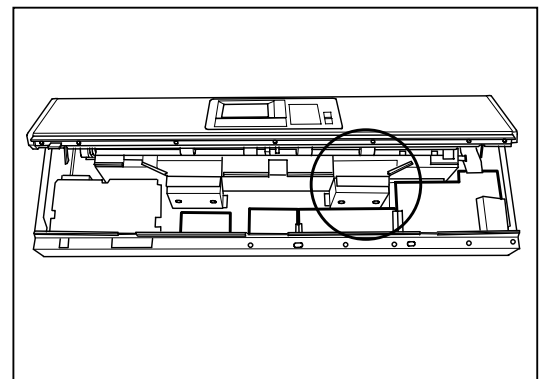
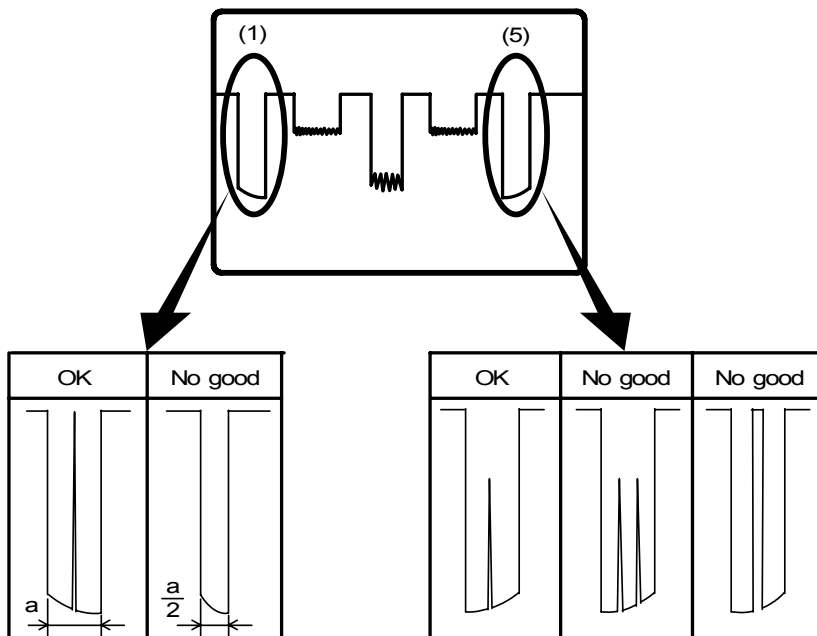
Each CCD PCB has to be placed at the best position horizontally monitoring the shape of (1) and (5) of the signal pattern.



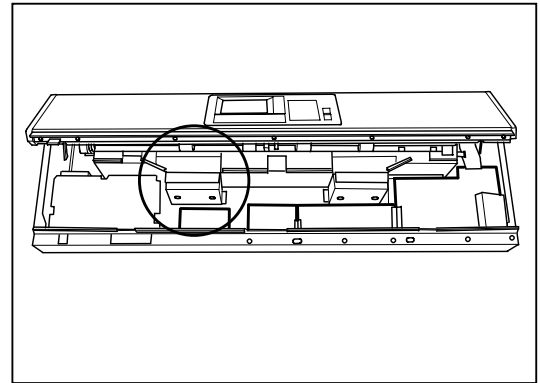
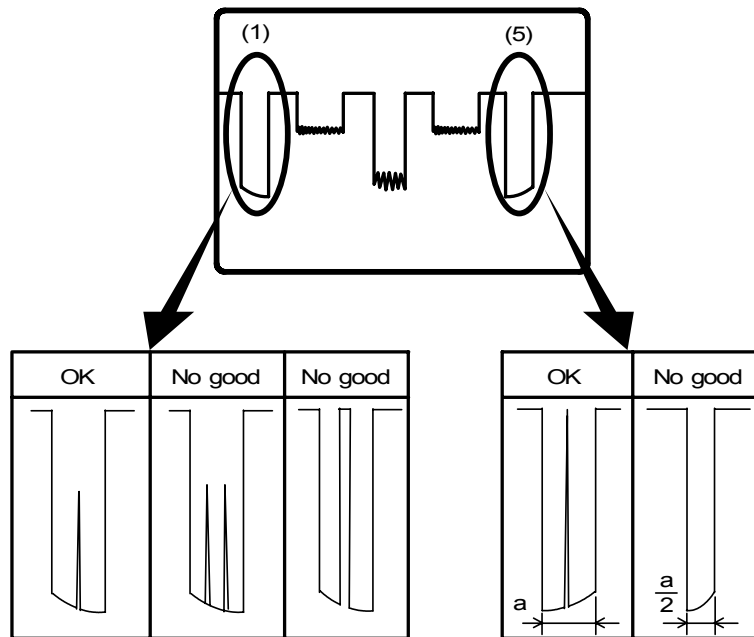
- 1) Increase the zoom ratio of the oscilloscope to see both (1) and (5) more precisely. Compare the shape of (1) and (5) with “OK” and “No good” conditions in the following figure. If they are not “OK” but are “No good”, you need to adjust the position of CCD PCB. In this case, go on to the next step 2).

**Note :** Be careful that the ideal signal pattern is different between left CCD PCB and right one.

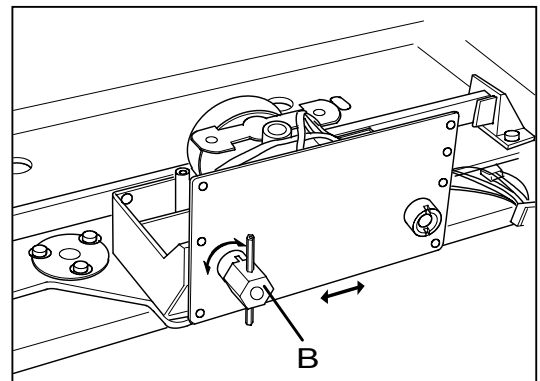
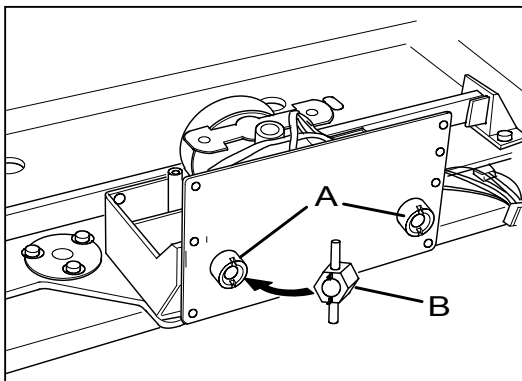
(In case of the right CCD PCB)



(In case of the left CCD PCB)



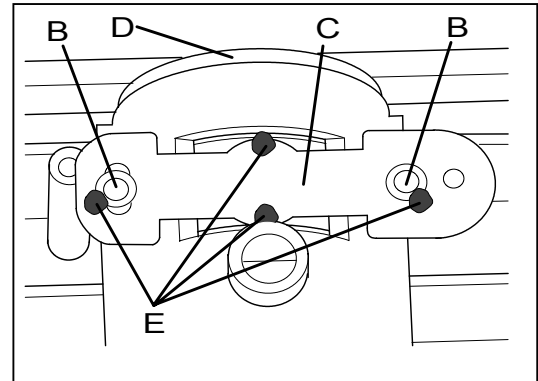
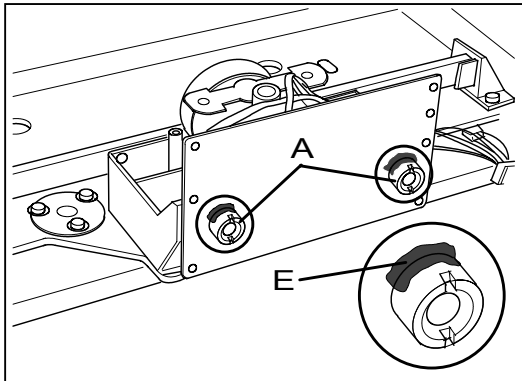
- 2) Move each CCD PCB horizontally rotating both Eccentric Cams (A) evenly little by little with the Cam Positioning Jig (B) so that each (1) and (5) of the signal pattern shows the "OK" condition.



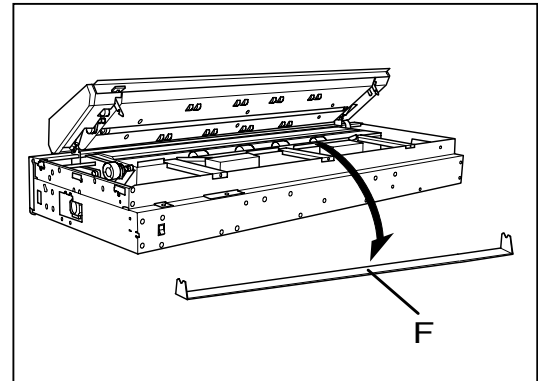
## **E. Treatments after the adjustment**

- 1) When you have finished to adjust the position of each lens and CCD PCB, lock Eccentric Cams (A), screws (B), CCD Holding Plate (C) and Lens (D) with the locking paint of alcohol type as (E) in the following figures.

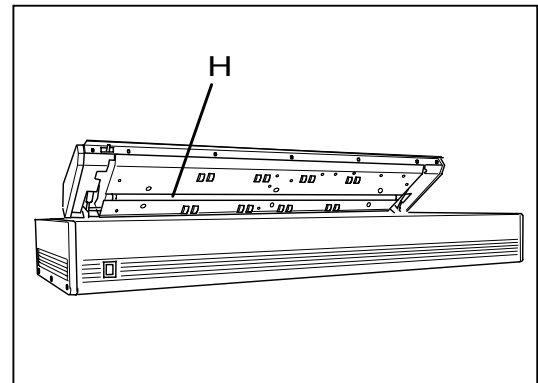
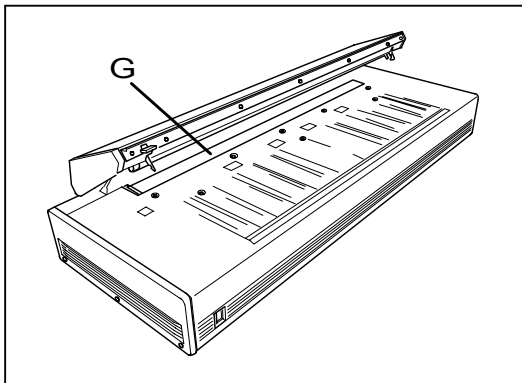
Recommended locking paint is TB-1401B or TB-1401C (Manufactured by 3M).



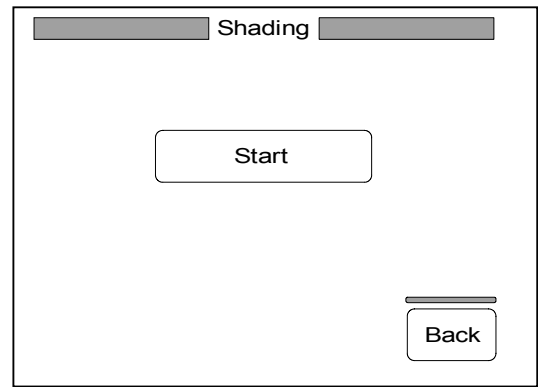
- 2) Cancel the CCD Adjustment Mode, and also cancel the Service Mode.
- 3) Open the Upper Unit, and then remove the Adjustment Chart Jig (F).



- 4) Turn off the scanner.  
Put back the Original Table.  
If Original Glass (G) and White Roller (H) are dirty, clean them.



- 5) Turn on the scanner.  
Enter the Service Mode, select the Shading  
Compensation Mode and carry out the Shading  
Compensation.  
(Refer to “7.6 Shading Compensation Mode” on the  
page 7-84.)



# Chapter 5

## Periodical Service

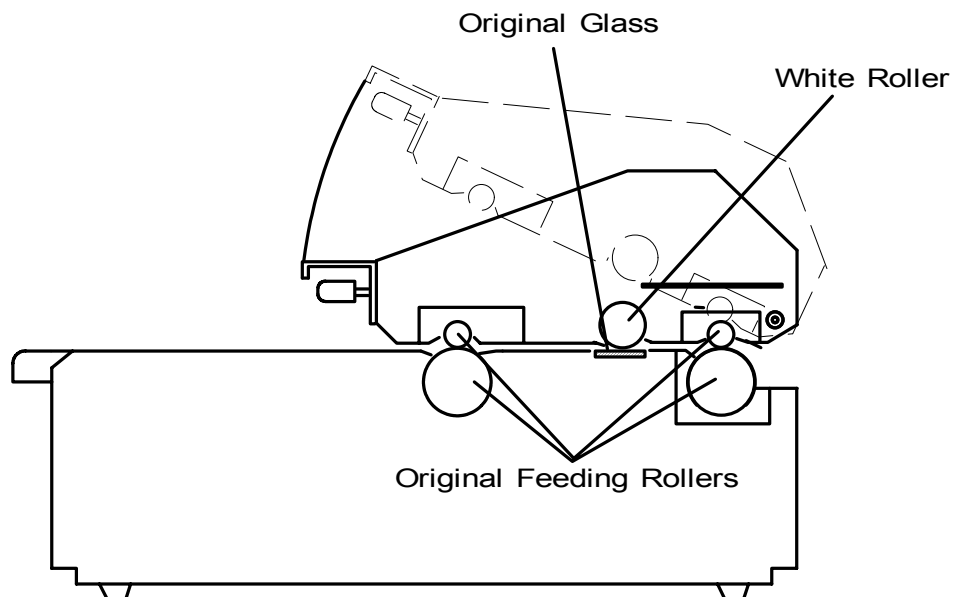
<b>5.1</b>	<b>Basic Procedure of Periodical Service</b>	Page 5- 1
<b>5.2</b>	<b>Checking Points</b>	5- 1

## 5.1 Basic Procedure of Periodical Service

Note : 1. Carry out the periodical service if required.  
2. Create a service notebook and check it periodically.

Order	Working procedure	Checking items	Remarks
1	Ask the manager of the present condition of the machine.	Understand the present condition of the machine.	
2	Record the present Scan Count (Number of originals and total length of scanned original).		
3	Carry out the Test Print.	a) Image density and unevenness of the density b) Dirt on the white area c) Leading Margin d) Abnormal acoustic noise	
4	Open the Upper Unit and clean the Original Glass.		Wipe it with a cloth impregnated with a little water or neutral detergent, and then wipe it with a dry cloth.
5	Clean the White Roller.		Wipe it with a cloth impregnated with the alcohol.
6	Clean Original Feeding Rollers.		Wipe it with a cloth impregnated with the alcohol.
7	Carry out the Test Print again.		
8	Keep test prints, and clear up around the machine.		
9	Record the Scan Count shown after the service.		
10	Record the result in the service notebook, and report it to the manager.		

## 5.2 Checking Points





# Chapter 6

## Troubleshooting

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6.1.2 Treatments against trouble	6- 2
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(2) Black speckle images	6- 8
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(4) Vertical line (black or white)	6- 9
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## 6.1 Troubleshooting

Defective images are caused by either the defect of scanner to scan or that of printer to create the image.

Therefore, it is important to attribute the defective image to either of them.

In case of printer's defect, refer to printer's Service Manual.

### 6.1.1 Basic checking points at the time of trouble

1. Defect of printer to create the image
  - (a) Follow the instruction mentioned in printer's manual.
2. Defect of scanner to scan the original
  - (a) Check whether or not the Original Glass is dirty or scratched.
  - (b) Check whether or not the White Roller above the Original Glass is dirty.
  - (c) Check the Image Processor Circuit.
  - (d) Check the Memory. Take "DIMM Test" (Refer to page 7-99) and "SRAM Test" (Page 7-101).
3. Defect of scanner to transport the original
  - (a) Check the Motor Circuit.
4. Error
  - (a) Check the contents of Error Message.

## 6.1.2 Treatments against trouble

Each of the following lists shows the method to fix the trouble.

When you wish to know the cause of trouble, refer to the section "Cause" in the list.

Following the "Order", answer the question in the "Checking item" by either "Yes" or "No".

If your answer is same with the "Result", do as mentioned in the "Treatment".

If your answer is different from the "Result", go on to the next "Cause".

Since there are many cases to do suggested treatments and checks in the Service Mode, refer to the concerning pages in the chapter 7.

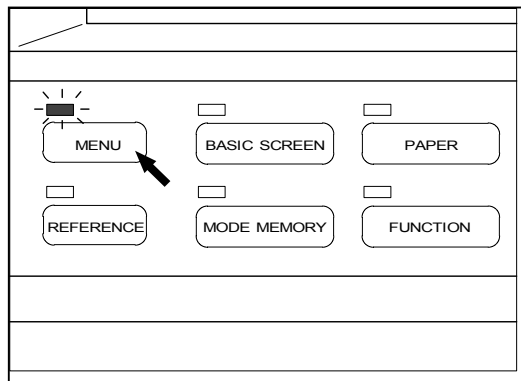
### A. Defect of LCD (Touch Panel)

#### (1) No LCD indication

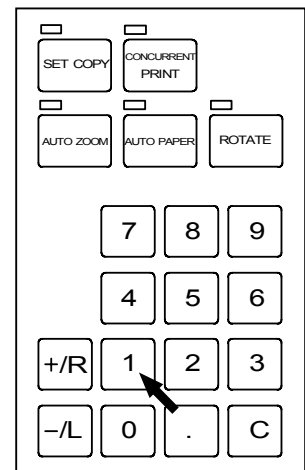
Cause	Order	Checking item	Result	Treatment
Adjustment of LCD contrast	1	Is the contrast of LCD proper?	No	Adjust it in the LCD Contrast Adjustment Mode. (Do the work shown below this list.)
Connector	2	Are all connectors connected to the LCD firmly?	No	Connect them firmly.
Panel PCB	3	Can you fix the problem if you replace the Panel PCB with the new one?	Yes	OK.
LCD Inverter PCB	4	Can you fix the problem if you replace the LCD Inverter PCB with the new one?	Yes	OK.
LCD Module	5	Can you fix the problem if you replace the LCD Module with the new one?	Yes	OK.
CPU PCB	6	<b>Make sure to print out the list of present Back Up Data settings, and then replace the CPU PCB with the new one.</b> Can you fix the problem? (As for the way to print out the list, refer to "7.4.1 How to print out the Backup Data List" on the page 7-4.)	Yes	OK. Make sure to recover the former setting value to each Back Up Data making reference to the printed list.

[LCD contrast Adjustment]

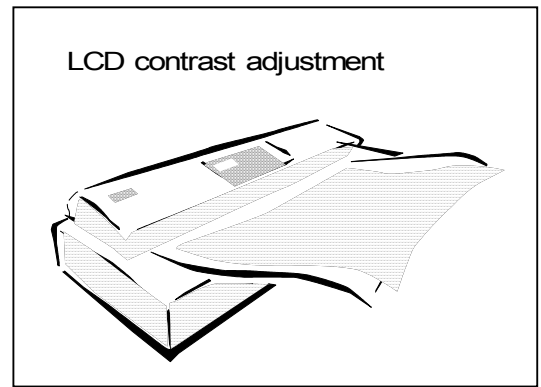
- 1) Press and hold the Menu Key, and then push "1" of Ten Keys to enter the LCD Contrast Adjustment Mode.



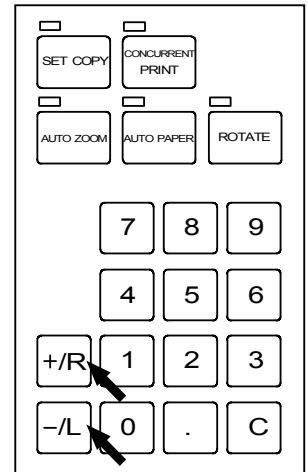
(Menu Key)



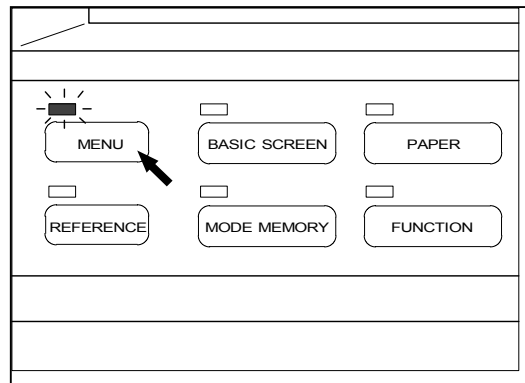
2) The LCD indicates “LCD contrast adjustment”.



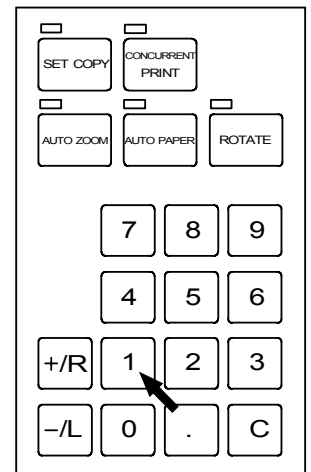
3) Pushing either “+/R” Key or “-/L” Key, adjust the contrast.



4) When you have finished to adjust, press and hold the Menu Key, and then push “1” of Ten Keys to cancel the LCD Contrast Adjustment Mode.



(Menu Key)

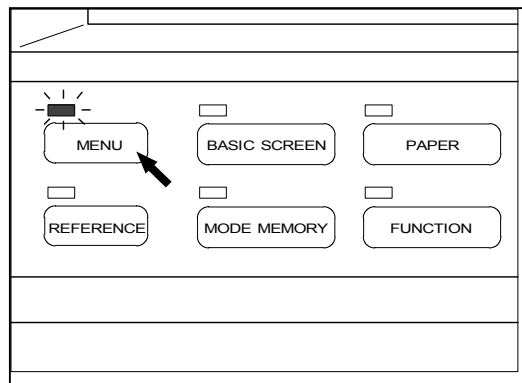


(2) Touch Panel does not react to the touch

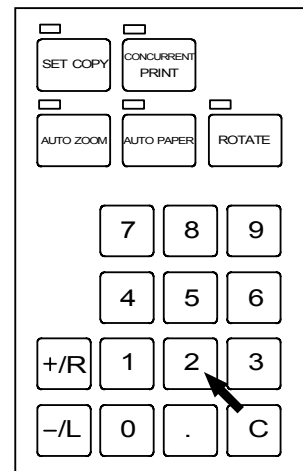
Cause	Order	Checking item	Result	Treatment
Touch Panel positioning	1	Is the Touch Panel adjusted well in the Touch Panel Position Adjustment Mode?	No	Adjust the Touch Panel position. (Do the work shown below this list.)
Connector	2	Are all connectors connected to the LCD firmly?	No	Connect them firmly.
LCD Module	3	Can you fix the problem if you replace the LCD Module with the new one?	Yes	OK.
Panel PCB	4	Can you fix the problem if you replace the Panel PCB with the new one?	Yes	OK.
Touch Panel Terminal 1 PCB	5	Can you fix the problem if you replace the Touch Panel Terminal 1 PCB with the new one?	Yes	OK.
Touch Panel Terminal 2 PCB	6	Can you fix the problem if you replace the Touch Panel Terminal 2 PCB with the new one?	Yes	OK.
CPU PCB	7	<b>Make sure to print out the list of present Back Up Data settings, and then replace the CPU PCB with the new one.</b> Can you fix the problem? (As for the way to print out the list, refer to "7.4.1 How to print out the Backup Data List" on the page 7-4.	Yes	OK. Make sure to recover the former setting value to each Back Up Data making reference to the printed list.

[Touch panel positioning]

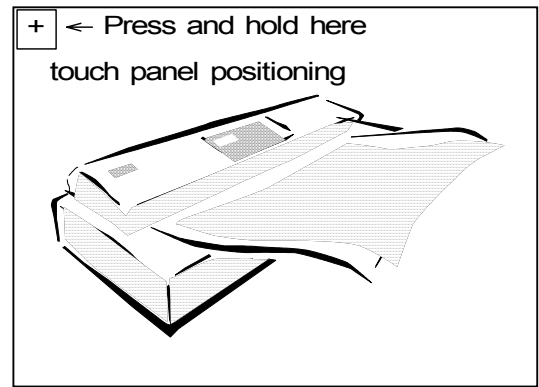
- 1) Press and hold the Menu Key, and then push "2" of Ten Keys to enter the Touch Panel Position Adjustment Mode.



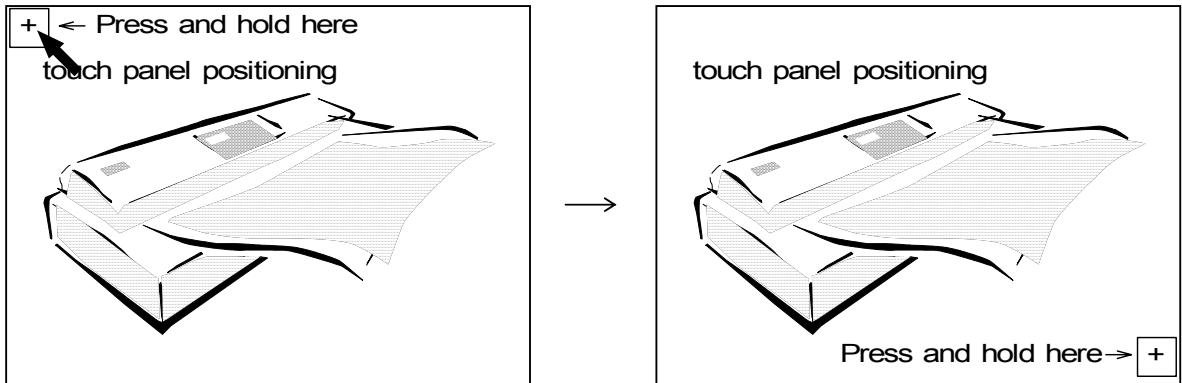
(Menu Key)



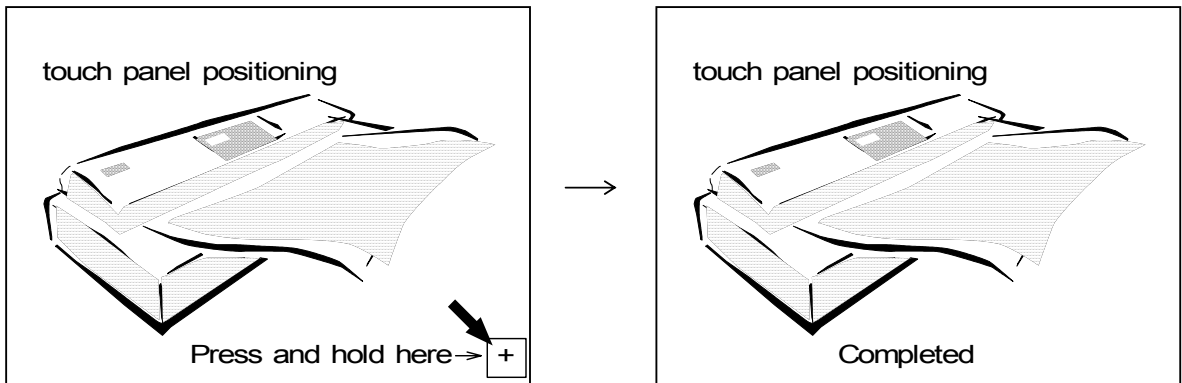
2) The LCD indicates “touch panel positioning”.



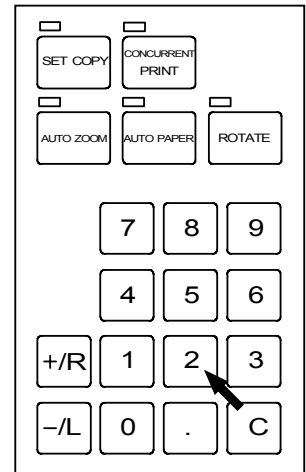
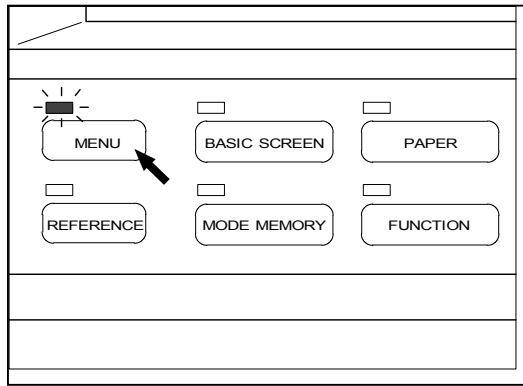
3) Press and hold the “+” mark on the LCD until the indication is changed.



4) Press and hold the “+” mark on the LCD until “Completed” is indicated.



- 5) When you have finished to adjust, press and hold the Menu Key, and then push “2” of Ten Keys to cancel the Touch Panel Position Adjustment Mode.



## **B. Defect of scan**

**Note :** If it is impossible to fix each of the following kinds of trouble although you have done everything suggested in the list, the connected printer (or monitor in case of the Scan Mode) may have the cause of trouble.  
**Check the printer (or monitor) also in this case.**

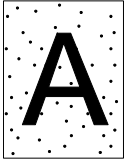
(1) Copy is totally black or white



Cause	Order	Checking item	Result	Treatment
Threshold Level	1	Is the selected Threshold Level proper?	No	Select a proper Threshold Level.
Original Glass	2	Is the Original Glass dirty?	Yes	Clean it.
White Roller	3	Is the White Roller dirty?	Yes	Clean it.
Lamp	4	Does each Lamp light up?	No	Replace the defective Lamp with the new one.
Pointer LED	5	Does the Pointer LED light up?	No	Replace the Optical Unit with the new one.
Shading Compensation	6	Can you fix the problem if you do Shading Compensation?	Yes	OK.
Memory (DIMM)	7	Can you fix the problem if you replace the memory with the new one?	Yes	OK.
Image Processor PCB	8	Can you fix the problem if you replace the Image Processor PCB with the new one?	Yes	OK.
CPU PCB	9	<b>Make sure to print out the list of present Back Up Data settings, and then replace the CPU PCB with the new one.</b> Can you fix the problem? (As for the way to print out the list, refer to "7.4.1 How to print out the Backup Data List" on the page 7-4.	Yes	OK. Make sure to recover the former setting value to each Back Up Data making reference to the printed list.
CCD PCB	10	Can you fix the problem if you replace the CCD PCB with the new one? (Refer to "4.7 Replacement and Adjustment of CCD PCB" on the page 4-106.)	Yes	OK.

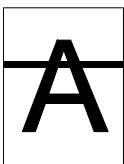


(2) Black speckle images



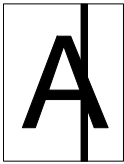
Cause	Order	Checking item	Result	Treatment
Sharpness Level	1	Is the selected Sharpness Level proper?	No	Select a proper Sharpness Level.
Original Glass	2	Is the Original Glass dirty?	Yes	Clean it.
White Roller	3	Is the White Roller dirty?	Yes	Clean it.
Memory (DIMM)	4	Can you fix the problem if you replace the memory with the new one?	Yes	OK.
Image Processor PCB	5	Can you fix the problem if you replace the Image Processor PCB with the new one?	Yes	OK.
CPU PCB	6	<b>Make sure to print out the list of present Back Up Data settings, and then replace the CPU PCB with the new one.</b> Can you fix the problem? (As for the way to print out the list, refer to "7.4.1 How to print out the Backup Data List" on the page 7-4.)	Yes	OK. Make sure to recover the former setting value to each Back Up Data making reference to the printed list.
CCD PCB	7	Can you fix the problem if you replace the CCD PCB with the new one? (Refer to "4.7 Replacement and Adjustment of CCD PCB" on the page 4-106.)	Yes	OK.

(3) Horizontal line (black or white)



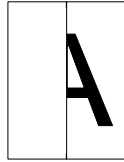
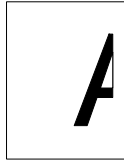
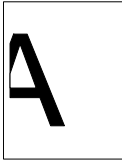
Cause	Order	Checking item	Result	Treatment
Original Glass	1	Is the Original Glass dirty?	Yes	Clean it.
White Roller	2	Is the White Roller dirty?	Yes	Clean it.
Image Processor PCB	3	Can you fix the problem if you replace the Image Processor PCB with the new one?	Yes	OK.

(4) Vertical line (black or white)



Cause	Order	Checking item	Result	Treatment
Original Glass	1	Is the Original Glass dirty?	Yes	Clean it.
White Roller	2	Is the White Roller dirty?	Yes	Clean it.
Shading Compensation	3	Can you fix the problem if you do Shading Compensation?	Yes	OK.
Image Processor PCB	4	Can you fix the problem if you replace the Image Processor PCB with the new one?	Yes	OK.
CPU PCB	5	<b>Make sure to print out the list of present Back Up Data settings, and then replace the CPU PCB with the new one.</b> Can you fix the problem? (As for the way to print out the list, refer to "7.4.1 How to print out the Backup Data List" on the page 7-4.	Yes	OK. Make sure to recover the former setting value to each Back Up Data making reference to the printed list.
CCD PCB	6	Can you fix the problem if you replace the CCD PCB with the new one? (Refer to "4.7 Replacement and Adjustment of CCD PCB" on the page 4-106.)	Yes	OK.

(5) Part of image is lost



Cause	Order	Checking item	Result	Treatment
Original Size Sensor	1	Carry out Sensor Test making reference to "7.7.5 Sensor Test" on the page 7-95. Is some Original Size Sensor broken?	Yes	Replace that sensor.
Shading Compensation	2	Can you fix the problem if you do Shading Compensation?	Yes	OK. Make sure to save the compensated value.
Pointer LED	3	Does the Pointer LED light up?	No	Replace the Optical Unit with the new one.
Image Processor PCB	4	Can you fix the problem if you replace the Image Processor PCB with the new one?	Yes	OK.
CPU PCB	5	<b>Make sure to print out the list of present Back Up Data settings, and then replace the CPU PCB with the new one.</b> Can you fix the problem? (As for the way to print out the list, refer to "7.4.1 How to print out the Backup Data List" on the page 7-4.)	Yes	OK. Make sure to recover the former setting value to each Back Up Data making reference to the printed list.
CCD PCB	6	Can you fix the problem if you replace the CCD PCB with the new one? (Refer to "4.7 Replacement and Adjustment of CCD PCB" on the page 4-106.)	Yes	OK.

### C. Defect of transportation

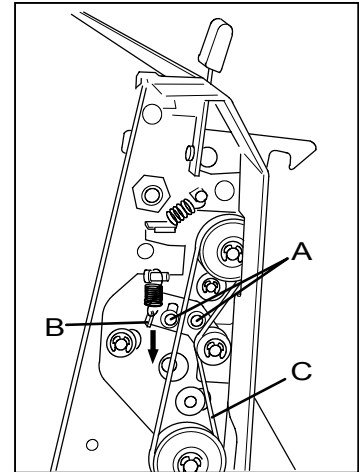
If the original is transported defectively, in most cases the copy image is expanded vertically.

Cause	Order	Checking item	Result	Treatment
Motor Control Circuit	1	Does the Original Feeding Motor rotate?	No	Carry out the following treatments orderly.  1. Check whether or not the connector of the Stepping Motor is connected. 2. Replace the Stepping Motor with the new one. 3. Replace the Driver PCB with the new one. 4. <b>Make sure to print out the list of present Back Up Data settings, and then replace the CPU PCB with the new one.</b> (As for the way to print out the list, refer to "7.4.1 How to print out the Backup Data List" on the page 7-4.
White Roller	2	Can you rotate the White Roller easily by hand?	No	Check the rotary part of White Roller.
Rollers (Counter Rollers on the bottom of the Upper Unit)	3	Can you rotate each Roller easily by hand?	No	Check the rotary part of Roller.
Pulleys	4	Is each Pulley fixed firmly?	No	Fit it firmly.
Timing Belt	5	Is the tension of Timing Belt proper?	No	Adjust the tension properly doing the work shown on the next page.

### White Roller Timing Belt

You need no special adjustment to have the proper tension of White Roller Timing Belt but the proper tension is automatically kept by just doing the following work.

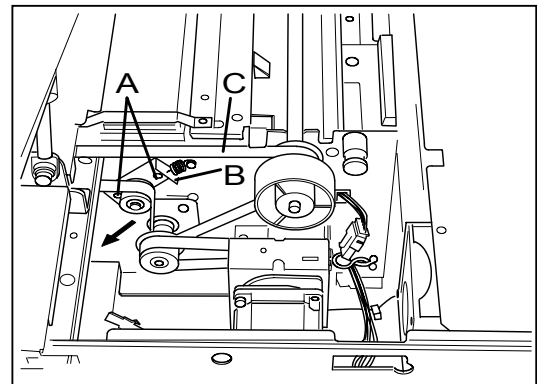
- 1) Loosen 2 screws (A).
- 2) Move the Tension Plate A Assembly (B) toward the arrow mark to unfasten the White Roller Timing Belt (C) and to make it be out of gear.
- 3) Stretch the White Roller Timing Belt (C) to the Tension Roller of the Tension Plate A Assembly (B).
- 4) The Tension Plate A Assembly (B) comes to a standstill being pulled by both White Roller Timing Belt and Tension Spring. Since this position of Tension Plate A Assembly (B) is best for the tension of White Roller Timing Belt, fix it tightening screws (A).



### Drive Roller Timing Belt

You need no special adjustment to have the proper tension of Drive Roller Timing Belt but the proper tension is automatically kept by just doing the following work.

- 1) Loosen 2 screws (A).
- 2) Move the Tension Plate B Assembly (B) toward the arrow mark to unfasten the Drive Roller Timing Belt (C) and to make it be out of gear.
- 3) Stretch the Drive Roller Timing Belt (C) to the Pulley of the Tension Plate B Assembly (B).
- 4) The Tension Plate B Assembly (B) comes to a standstill being pulled by both Drive Roller Timing Belt and Tension Spring. Since this position of Tension Plate B Assembly (B) is best for the tension of Drive Roller Timing Belt, fix it tightening screws (A).

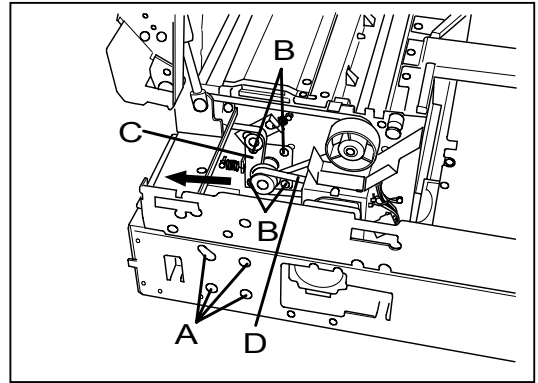


## Motor Timing Belt

You need no special adjustment to have the proper tension of Motor Timing Belt but the proper tension is automatically kept by just doing the following work.

- 1) Inserting a long screwdriver from the holes (A), loosen 4 screws (B).
- 2) Move the Motor Tension Plate Assembly (C) toward the arrow mark to unfasten the Motor Timing Belt (D) and to make it be out of gear.
- 3) Stretch the Motor Timing Belt (D) to the Pulley of the Motor Tension Plate Assembly (C).
- 4) The Motor Tension Plate Assembly (C) comes to a standstill being pulled by both Tension Spring and Motor Timing Belt.

Since this position of Motor Tension Plate Assembly is best for the tension of Motor Timing Belt, fix it tightening screws (A).



**Note :** After adjusting the tension of Motor Timing Belt, adjust also the tension of the Drive Roller Timing Belt making reference to the former page.

## **D. Others**

Since the scanner has the diagnosis function, it is possible to check whether or not the following parts are broken.

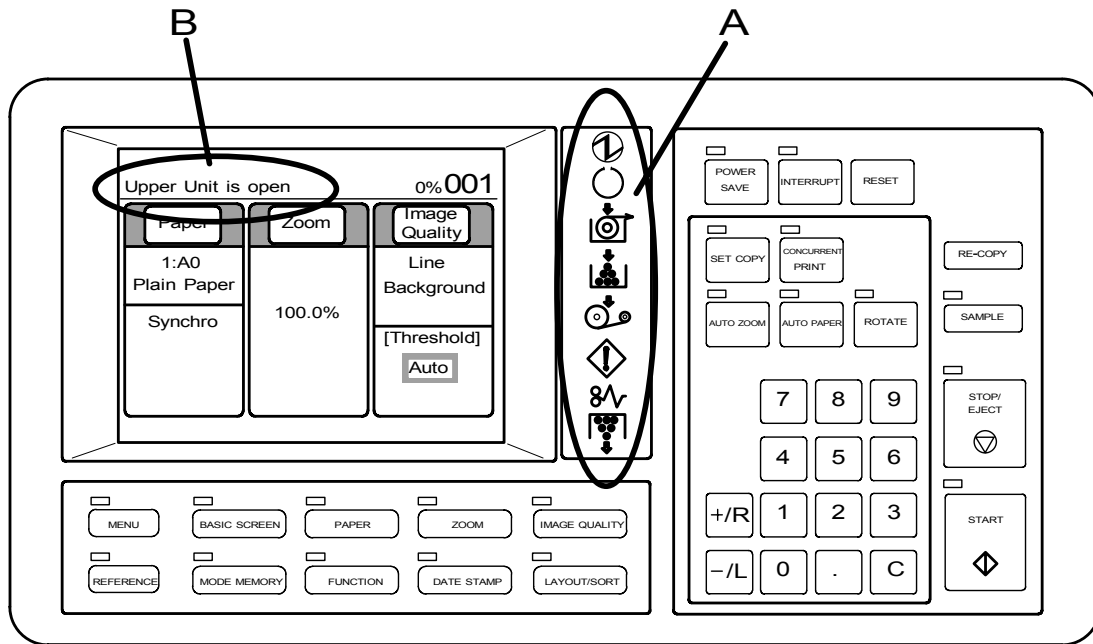
Checking is done in the corresponding test.

- |                           |       |                                    |
|---------------------------|-------|------------------------------------|
| 1. Operation Panel        | _____ | LED All Lighting Test (Page 7-89.) |
| (Keys and LED lamps)      | _____ | LED Shift Test (Page 7-91)         |
|                           | _____ | Panel Key Test (Page 7-93)         |
| 2. Sensors                | _____ | Sensor Test (Page 7-95)            |
| 3. Original Feeding Motor | _____ | Motor Test (Page 7-97)             |
| 4. Memory                 | _____ | DIMM Test (Page 7-99)              |
| (DIMM and SRAM)           | _____ | SRAM Test (Page 7-101)             |

## 6.2 Error Indications

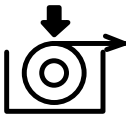
When some error occurs, it is shown by either of the following ways.

1. Any of Warning Indicators (A in the following figure) lights.
2. LCD indicates some Error Message (B).



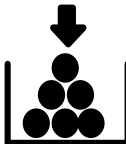
### 6.2.1 Warning Indicators

#### Roll Empty Indicator



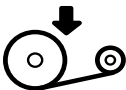
The Roll Empty Indicator lights red when the selected roll media is emptied. Making reference to printer's manual, load a new roll media to the Roll Deck.

#### Toner Low Indicator



The Toner Low Indicator lights red when the toner is emptied on printer's side. Making reference to printer's manual, supply the toner to the printer.

#### Web Empty Indicator



1. The Web Empty Indicator lights red when the Web in the printer is near empty, while it is still possible to copy some more.
2. If the printer has consumed all of the Web completely, Web Empty Indicator turns off and the Error Indicator lights. (LCD indicates Error Message "Web is empty" at this time.)  
It is impossible to copy any more.

If the connected printer is not equipped with the Web, the Web Empty Indicator does not work.



### Error Indicator



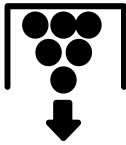
The Error Indicator lights red when the connected printer has some error.  
Some Error Message is indicated on the LCD at this time.

### Mis-feed Indicator



The Mis-feed Indicator lights red at the time of media mis-feed in printer.  
Remove the copying media.

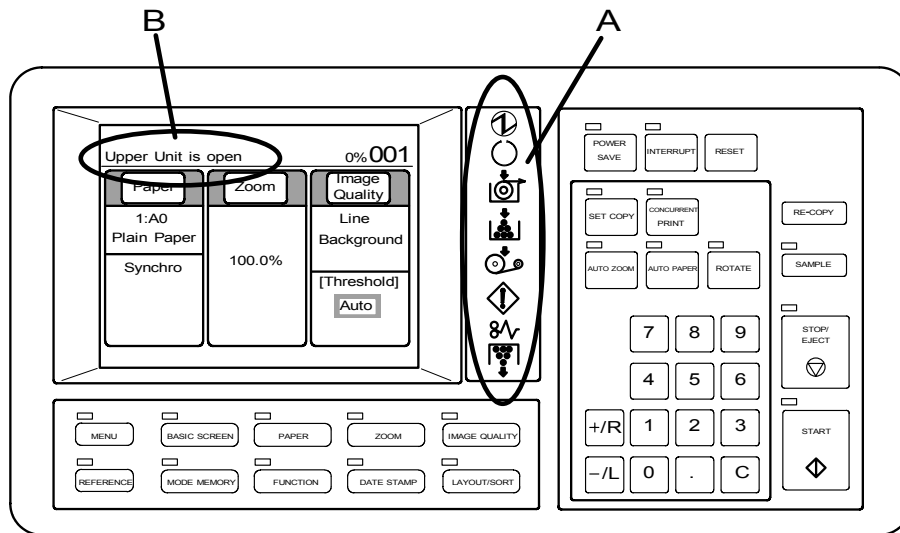
### Waste Toner Full Indicator

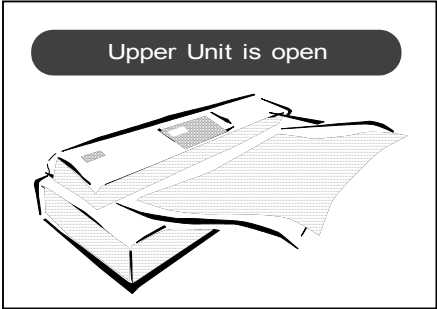
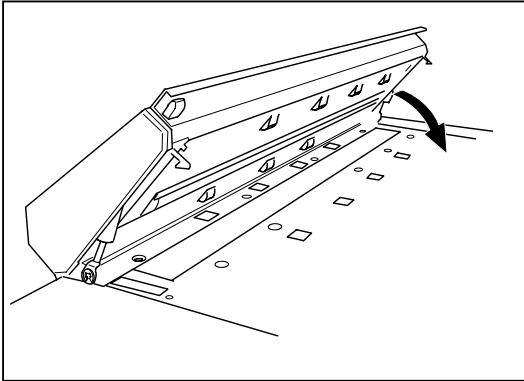
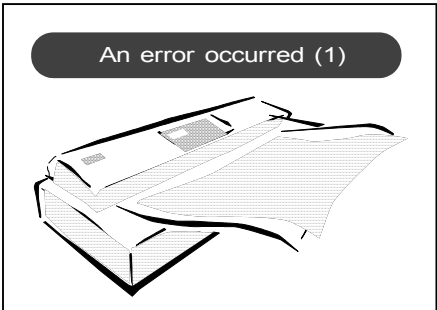


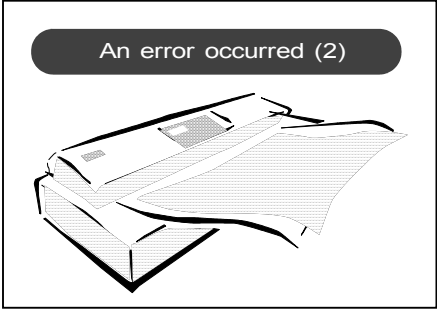
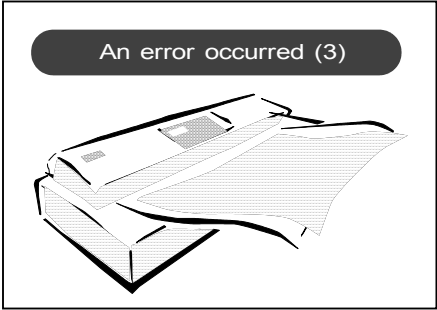
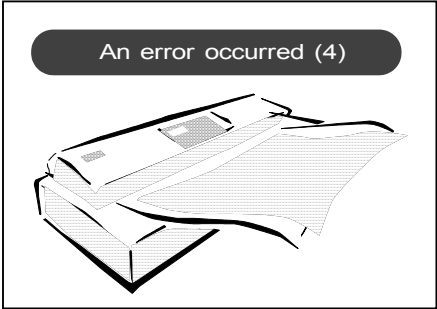
The Waste Toner Full Indicator lights red when the Waste Toner Bottle of the printer is filled with the toner.  
Making reference to printer's manual, replace the bottle with the new one.  
If the printer is not equipped with the sensor to detect the quantity of toner in the bottle, the Waste Toner Full Indicator does not work.

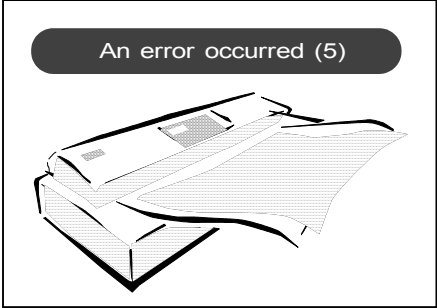
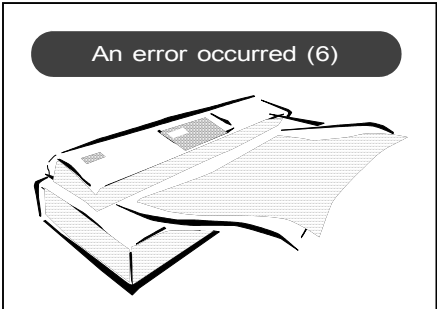
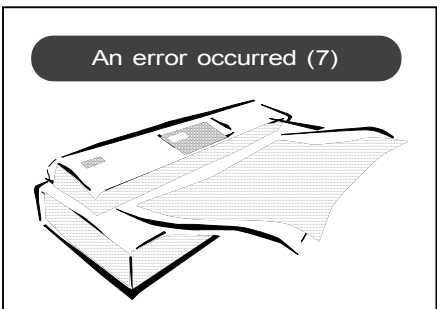
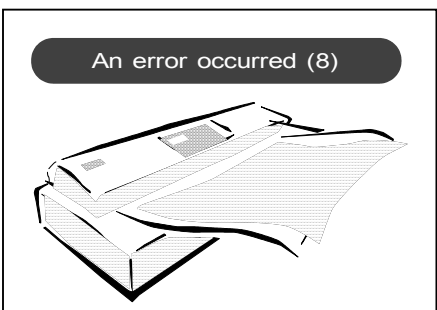
## 6.2.2 Error Message List

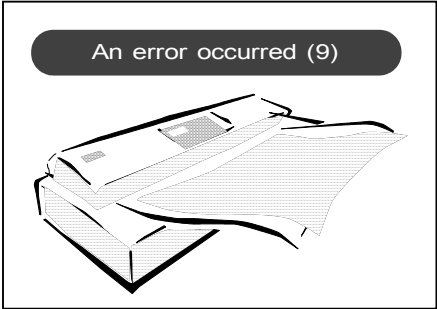
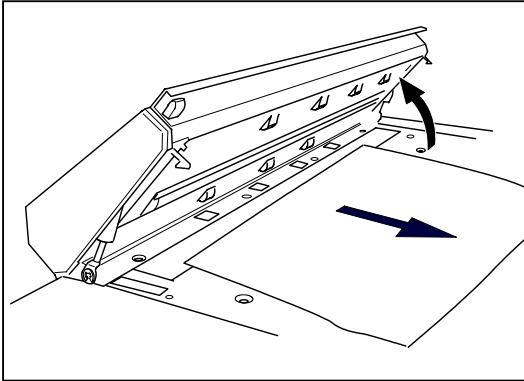
The Error Message is indicated on the LCD as (B) in the following figure.  
The corresponding Warning Indicator (A) lights also.

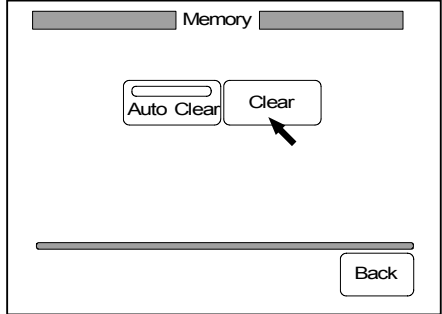
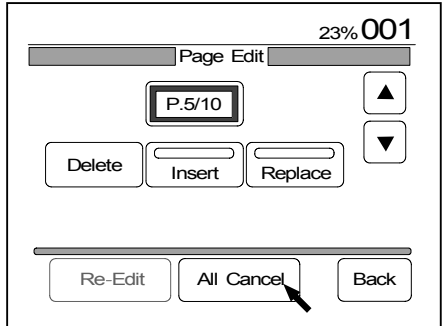


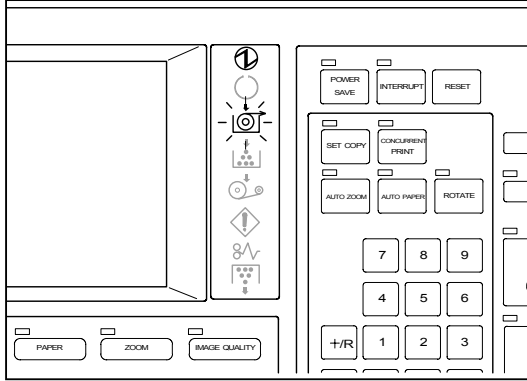
Error message	Treatments
<p>Upper Unit is open</p> 	<p>Close the Upper Unit.</p> 
<p>An error occurred (1)</p> 	<ol style="list-style-type: none"> <li>1. No memory is installed to the Image Processor PCB. Install the memory.</li> <li>2. Memory is not installed properly to the memory socket. Install it properly.</li> <li>3. It is impossible for the scanner to find the type of memory presently installed. Replace it with the specified memory making reference to "A. Specifications for the Memory Module" on the page 2-11.</li> </ol>

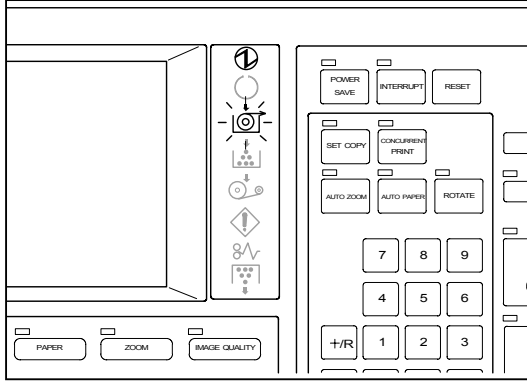
Error message	Treatments
<p>An error occurred (2)</p> 	<ol style="list-style-type: none"> <li>1. Some cable coming from the sensor is not connected properly to the CPU PCB. Connect it properly.</li> <li>2. The cable coming from the Optical Unit Drive Motor is not connected properly to the Driver PCB. Connect it properly.</li> <li>3. Home Position Sensor in the Optical Unit is defective. Replace the whole Optical Unit with the new one.</li> <li>4. Optical Unit Drive Motor does not rotate. Replace the whole Optical Unit with the new one.</li> </ol>
<p>An error occurred (3)</p> 	<ol style="list-style-type: none"> <li>1. Optical Unit is fixed because M4x25 Black Screws on the Rear Cover are tightened. Loosen these screws.</li> <li>2. Pointer LED PCB is defective. Check whether or not its cable is connected to the CPU PCB properly. In case the cable is connected properly but you still have the problem, replace the whole Optical Unit with the new one.</li> <li>3. CCD Unit is defective. Replace the whole Optical Unit with the new one.</li> <li>4. Image Processor PCB is defective. Check whether or not the Image Processor PCB is connected with the cables or with the other boards. In case there is no connection problem, replace the Image Processor PCB with the new one.</li> </ol>
<p>An error occurred (4)</p> 	<p>Pointer LED PCB is defective. Replace the whole Optical Unit with the new one.</p>

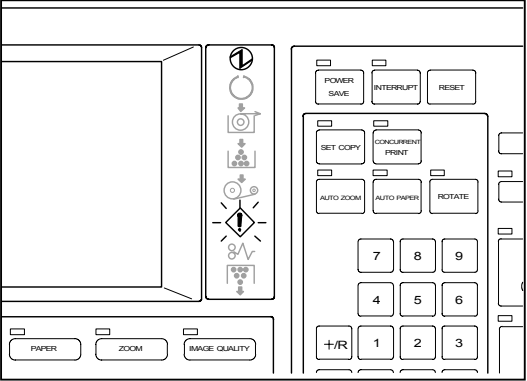
Error message	Treatments
<p>An error occurred (5)</p> 	<ol style="list-style-type: none"> <li>1. Original Glass is dirty. Clean it.</li> <li>2. White Roller is dirty. Clean it.</li> <li>3. Image Processor PCB is defective. Check whether or not the Image Processor PCB is connected with the cables or with the other boards. In case there is no connection problem, replace the Image Processor PCB with the new one.</li> </ol>
<p>An error occurred (6)</p> 	<p>Something is sticking on the central part of the White Roller where the Pointer LED throws light. Clean it off.</p>
<p>An error occurred (7)</p> 	<ol style="list-style-type: none"> <li>1. Something is sticking on the central part of the Original Glass where the Pointer LED throws light. Clean it off.</li> <li>2. Something is sticking on the central part of the White Roller where the Pointer LED throws light. Clean it off.</li> </ol>
<p>An error occurred (8)</p> 	<ol style="list-style-type: none"> <li>1. Something is sticking on the central part of the Original Glass where the Pointer LED throws light. Clean it off.</li> <li>2. Something is sticking on the central part of the White Roller where the Pointer LED throws light. Clean it off.</li> </ol>

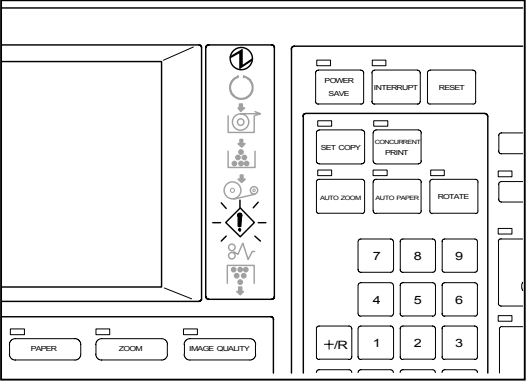
Error message	Treatments
<p>An error occurred (9)</p> 	<p>Scanner failed in resetting the Optical Unit because of the following causes. (Reset of Optical Unit is done for every 3 degrees of temperature rise. If scanner failed 4 times continuously, "An error occurred (9)" is indicated.)</p> <ol style="list-style-type: none"> <li>1. Something is sticking on the central part of the Original Glass where the Pointer LED throws light. Clean it off.</li> <li>2. Something is sticking on the central part of the White Roller where the Pointer LED throws light. Clean it off.</li> </ol>
<p>Skew error</p>	<p>Open the Upper Unit and remove the original.</p> 
<p>Printer is offline</p>	<p>Turn off both scanner and printer. Check whether or not they are connected each other with the cable. If not, connect them and then turn them on again.</p>
<p>There is no suitable roll</p>	<p>This is indicated when you do copying in the Auto Paper Mode but no roll media matches the output image size because the selected zoom ratio is not proper. Do either of the following treatments.</p> <ol style="list-style-type: none"> <li>1. Load another roll media to the Roll Deck, which matches the output image size.</li> <li>2. Change the zoom ratio so that the output image size should match any of roll media in the printer.</li> </ol>

Error message	Treatments
Memory is full	<p>This is indicated in any of the following cases.</p> <ol style="list-style-type: none"> <li> <p><b>The memory is fully occupied with the image data during scanning since the original has too much image data.</b></p> <p>Making reference to “Memory” on the page 3-161 of the <u><b>User’s Manual</b></u>, delete the image data from the memory by “Clear”.</p>  <p>Note : Although “Memory is full” is indicated, the memory stores the partial image data which have been scanned before “Memory is full” was indicated. If you wish to print out that partial image, push the Re-copy Key before doing “Clear”.</p> </li> <li> <p><b>Quantity of image data of the Set Copy Job exceeds the capacity of memory.</b></p> <p>Making reference to “Memory” on the page 3-161 or “All Cancel” on the page 3-141 of the <u><b>User’s Manual</b></u>, delete the Set Copy Job from the memory.</p>  <p>Note : Although “Memory is full” is indicated, the memory stores the Set Copy Job containing image data of originals which have been scanned before “Memory is full” was indicated. If you would like to print out that Set Copy Job, push the Start Key before doing “Clear” or “All Cancel”. However, note that it is impossible to add more image to the Set Copy Job by scanning.</p> </li> </ol>

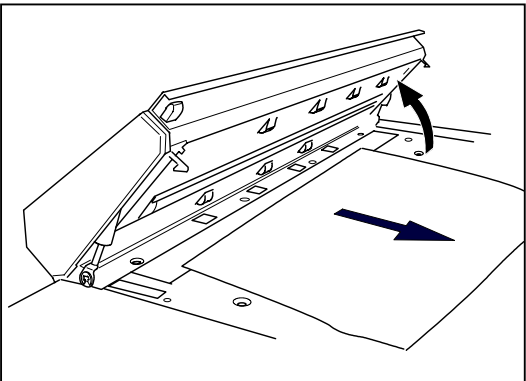
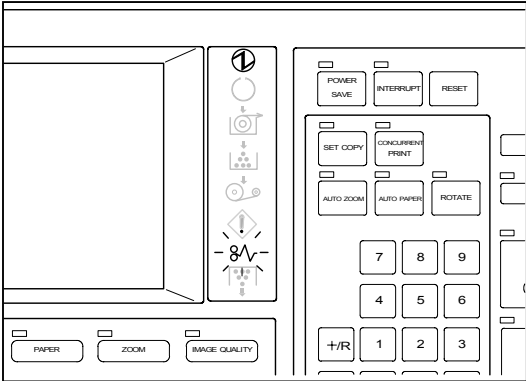
Error message	Treatments
Door open	Any door of printer is opened. Close it.
Inner Feed Unit is open	Inner Feed Unit in the printer is opened. Close it making reference to printer's manual.
Remove the media	This is indicated when the media is remaining in the printer after Initial Cut. Remove it making reference to printer's manual.
Set a sheet on the printer	Set the sheet media to the connected printer.
Remove the sheet media	Remove the sheet media from the printer.
Roll 1 is empty	The Roll Empty Indicator lights at this time. Load a new roll media to the corresponding Roll Deck making reference to printer's manual. 
Roll 2 is empty	
Roll 3 is empty	
Roll 4 is empty	
Roll Deck 1 is open	Close the corresponding Roll Deck.  <b>Note : If “Roll Deck 3 is open” is indicated when the printer KIP2720E is connected, it means the Cutter Hatch is opened.</b>
Roll Deck 2 is open	
Roll Deck 3 is open	
Roll Deck 4 is open	



Error message	Treatments
Original feeding motor error	<p>Connected printer has some error. The Error Indicator on the Operation Panel lights at this time. Fix the problem making reference to printer's Service Manual.</p> 
Web is empty	
Web feeding error	
Cutter Unit error	
Wire cleaning motor error	
Exposure lamp error	
Copy number counter error	
Length counter error	
Key counter error	
Fuser temperature is too low	
Fuser temperature is too high	
Thermostat open	
Fuser motor error	
Process motor error	
Main motor error	
Developer motor error	
Paper feeding motor error	





Error message	Treatments
Original mis-feed	<p>Open the Upper Unit and remove the original.</p> 
Printer mis-feed (Roll Deck)	<p>Mis-feed of copying media occurs in the printer. Mis-feed Indicator on the Operation Panel lights at this time. Remove it making reference to printer's manual.</p> 
Pr. mis-feed (Inner Feed Unit)	
Printer mis-feed (Drum Area)	
Printer mis-feed (Fuser)	
Printer mis-feed (Bypass)	

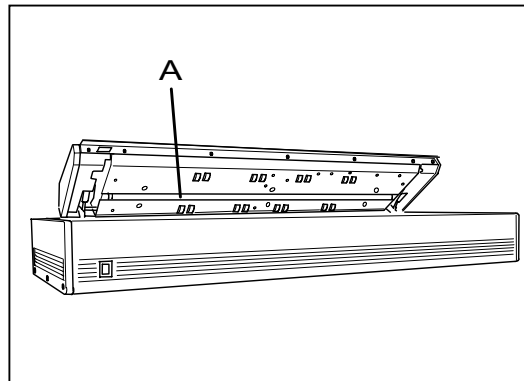
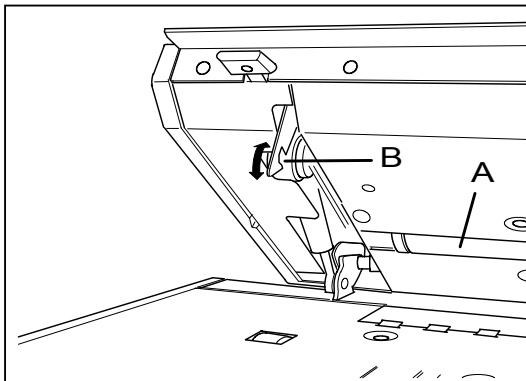
## 6.3 Shading Compensation

Make sure to do Shading Compensation in the following cases.

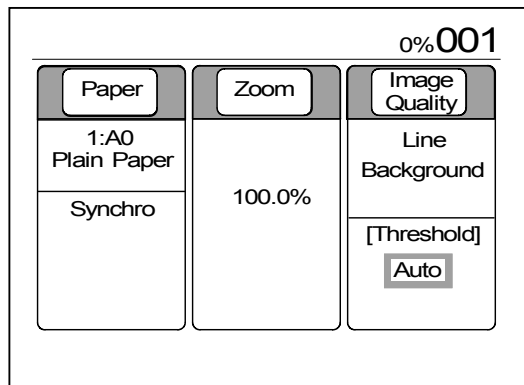
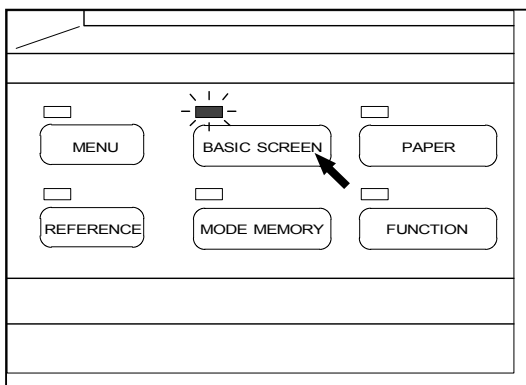
- (1) After replacing the CPU PCB with the new one
- (2) After replacing the CCD PCB with the new one
- (3) After replacing the Lamp with the new one
- (4) After replacing the Lamp Driver PCB with the new one
- (5) When some abnormal image is printed out

[Operation]

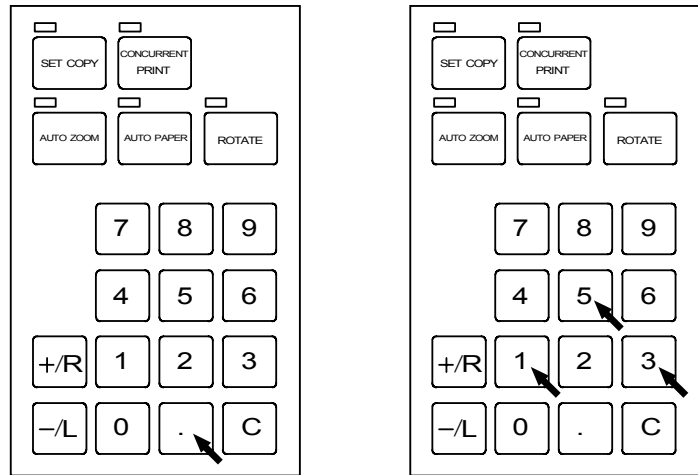
- 1) Wipe all the surface of White Roller (A) rotating the Roller (B).



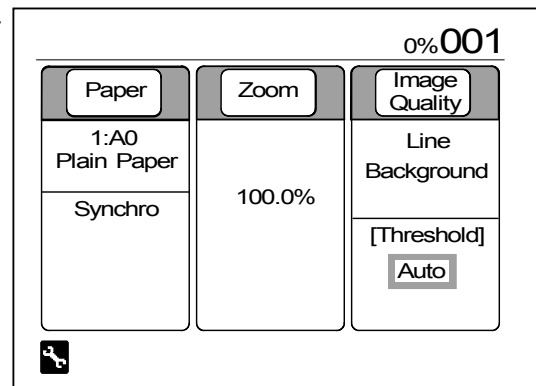
- 2) Push the Basic Screen Key to indicate the Basic Screen on the LCD.



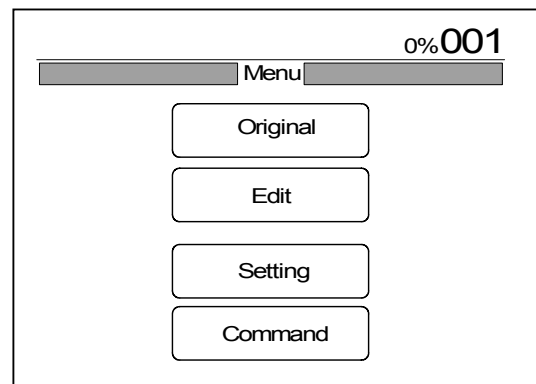
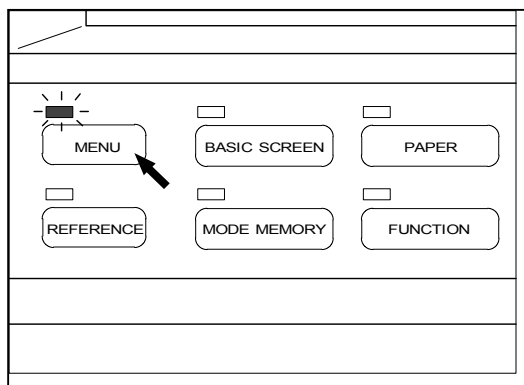
- 3) Press and hold the [ . ] Key, and then push keys in the order as [1], [3] and [5] to enter the Service Mode.



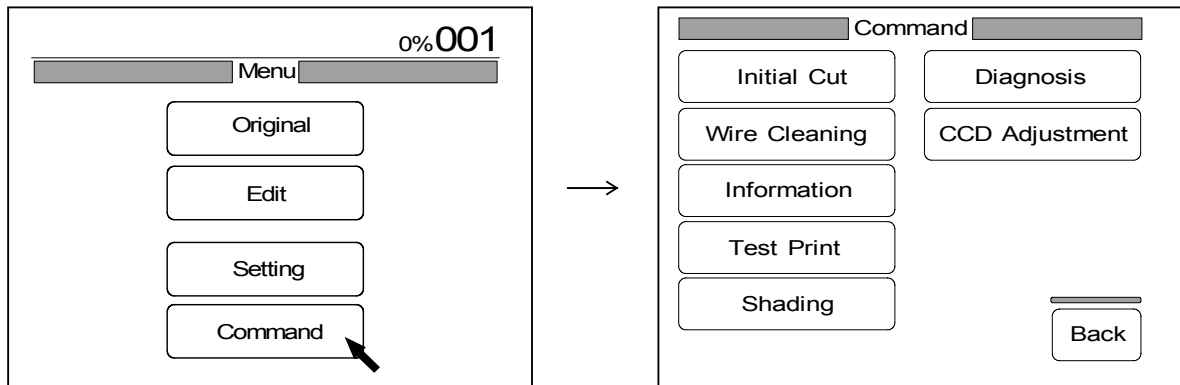
- 4) A mark of wrench is indicated on the LCD if you enter the Service Mode.



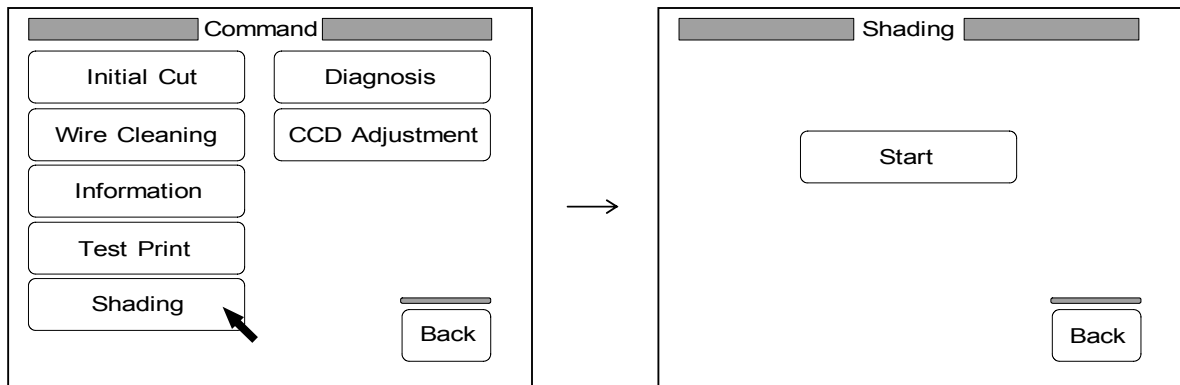
- 5) Push the Menu Key to indicate the Menu Screen on the LCD.



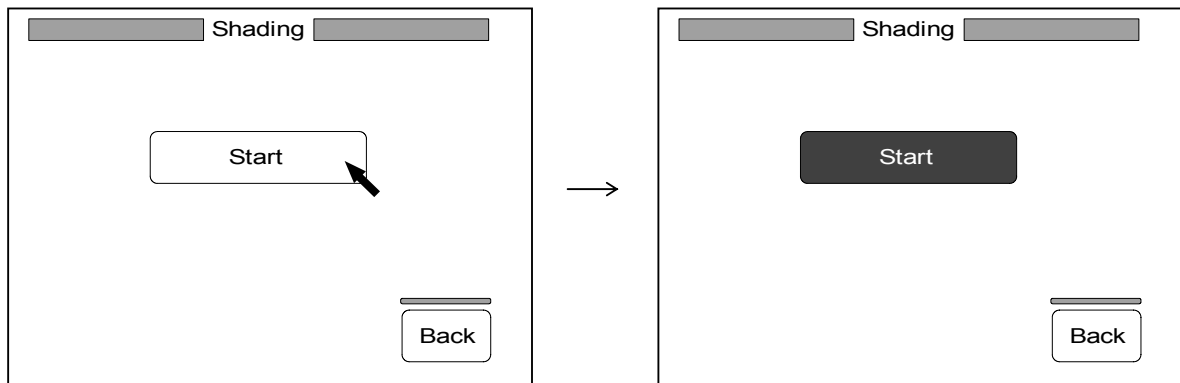
6) Press “Command” to indicate the Command Screen.



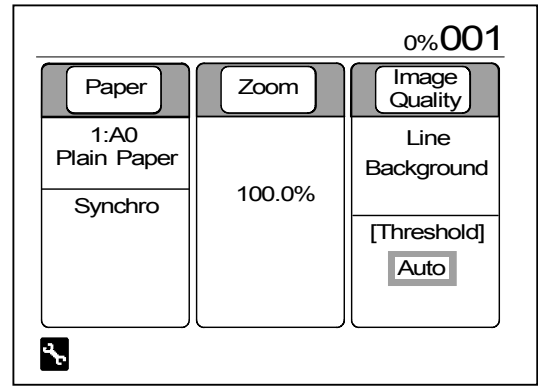
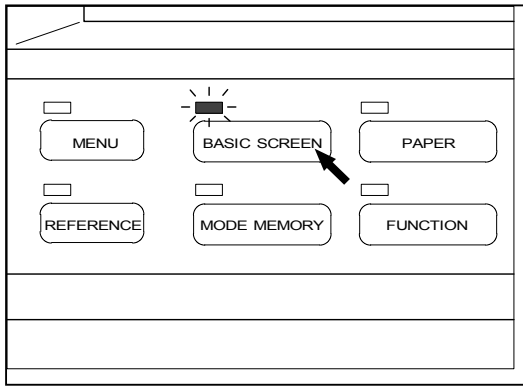
7) Press “Shading” to indicate the Shading Screen on the LCD.



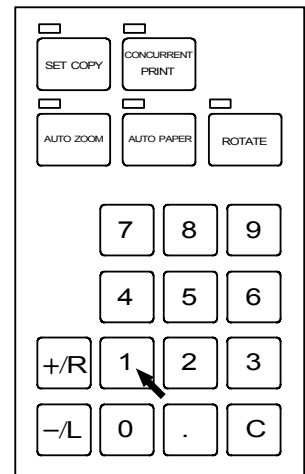
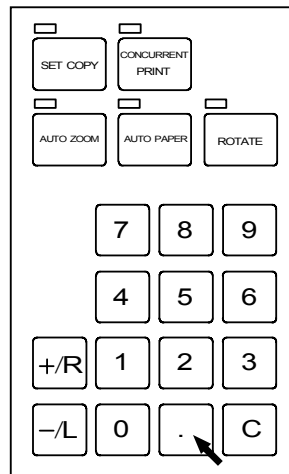
8) Press “Start” to start Shading Compensation.  
“Start” is colored during Shading Compensation.  
When it is finished, “Start” is no longer colored.



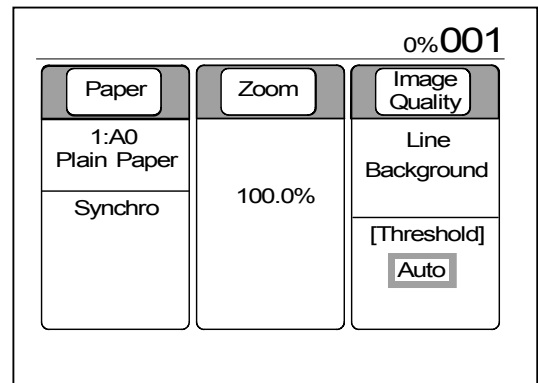
9) Push the Basic Screen Key to indicate the Basic Screen on the LCD.



10) Press and hold the [ . ] Key, and then push the [1] Key to cancel the Service Mode.



11) The mark of wrench on the LCD disappears when you cancel the Service Mode.



# Chapter 7

## Service Mode

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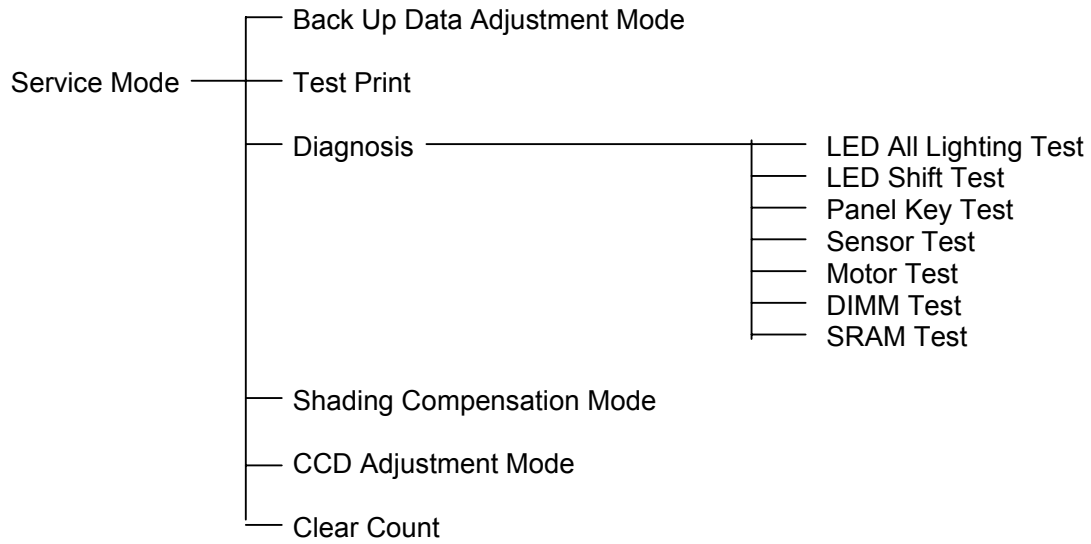
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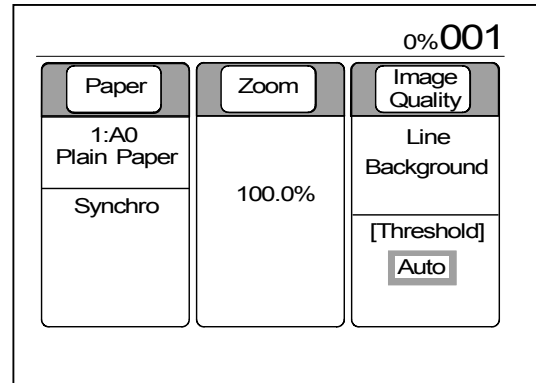
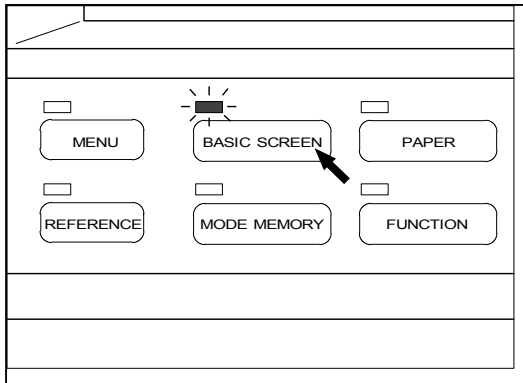
## 7.1 Construction of Service Mode

The Service Mode is constructed as follows.

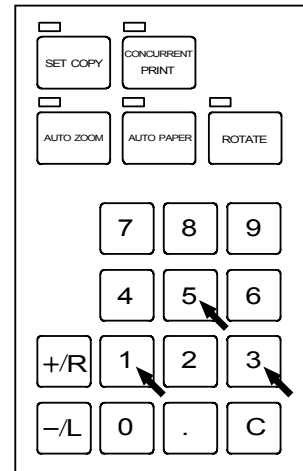
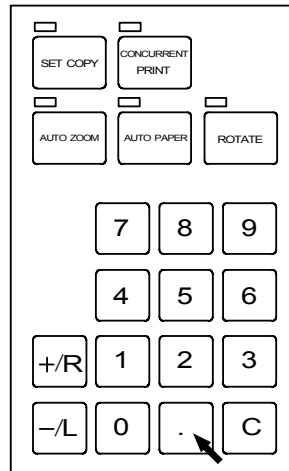


## 7.2 Entering the Service Mode

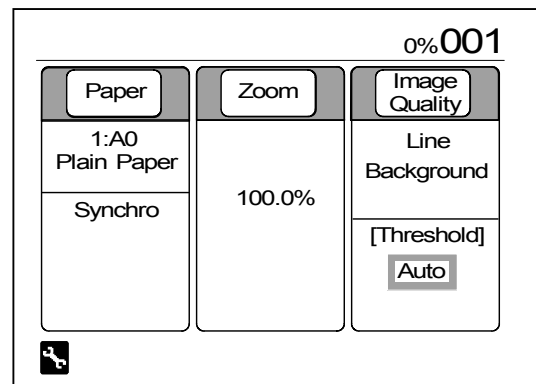
- 1) Push the Basic Screen Key to indicate the Basic Screen on the LCD.  
Note that it is possible to enter the Service Mode only in the Basic Screen.



- 2) Press and hold the [ . ] Key, and then push keys in the order as [1], [3] and [5] to enter the Service Mode.

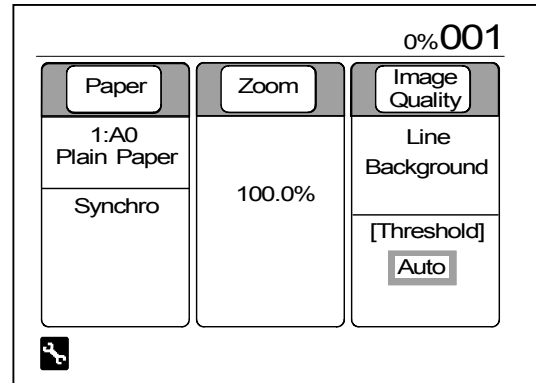
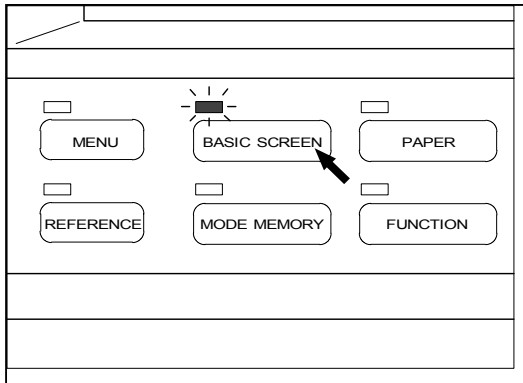


- 3) A mark of wrench is indicated in the Basic Screen when you enter the Service Mode.

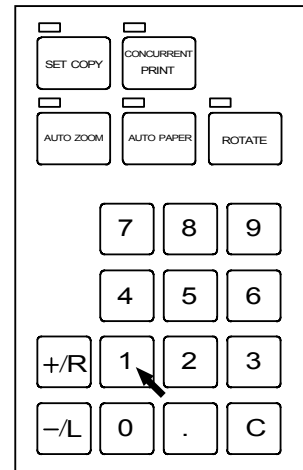
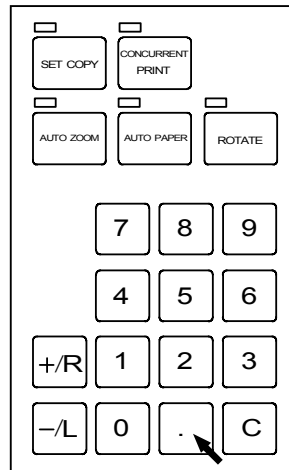


## 7.3 Canceling the Service Mode

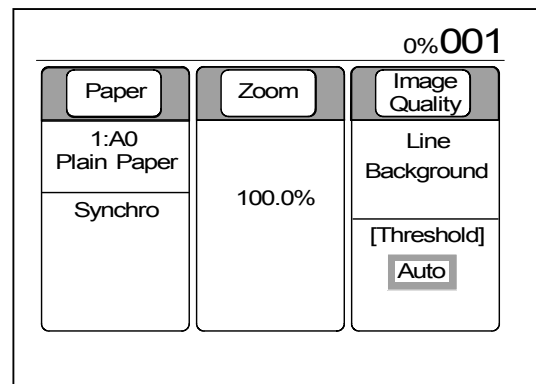
- 1) Push the Basic Screen Key to indicate the Basic Screen on the LCD.  
Note that it is possible to cancel the Service Mode only in the Basic Screen.



- 2) Press and hold the [ . ] Key, and then push the [1] Key to cancel the Service Mode.



- 3) The mark of wrench on the LCD disappears when you cancel the Service Mode.



## 7.4 Back Up Data Adjustment Mode

It is possible to change several Back Up Data settings in the Back Up Data Adjustment Mode.

### 7.4.1 How to print out the Back Up Data List

[Function]

It is possible to print out the Back Up Data List which lists all present setting values. This list also has the information indicated in Information Screen and SCSI Setting Screen.

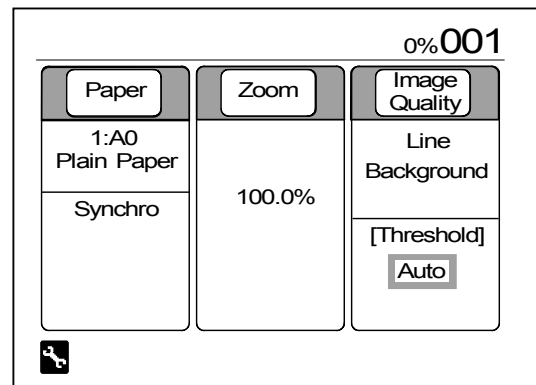
**If you replace the CPU PCB with the new one, all Back Up Data settings are initialized. Therefore, make sure to print out the Back Up Data List before replacement. Otherwise you may not be able to recover the former Back Up Data settings. Also, please print out the list before you change the setting value of each Back Up Data because it is impossible to undo the former setting value once it is changed.**

Backup data		No	data	No	data	No	data	No	data	No	data	No	data
1	0	51	0	101	-49	151	49	201	-	251	-		
2	0	52	0	102	-66	152	42	202	-	252	-		
3	0	53	0	103	-82	153	35	203	-	253	-		
4	-	54	0	104	-99	154	28	204	-	254	-		
5	210	55	-	105	-115	155	21	205	3	255	-		
6	210	56	-	106	-132	156	14	206	-	256	-		
7	30	57	-	107	-	157	7	207	-	257	-		
8	-	58	-	108	75	158	0	208	-	258	-		
9	-	59	-	109	64	159	-22	209	-	259	-		
10	3	60	0	110	80	160	-44	210	10	260	-		
11	0	61	0	111	93	161	-66	211	15	261	-		
12	0	62	0	112	105	162	-88	212	20	262	-		
13	1	63	0	113	118	163	-110	213	25	263	-		
14	15	64	0	114	130	164	-132	214	30	264	-		
15	4	65	-	115	143	165	-140	215	5	265	-		
16	1	66	-	116	155	166	-148	216	10	266	-		
17	-	67	-	117	168	167	-	217	15	267	-		
18	-	68	-	118	180	168	-	218	20	268	-		
19	-	69	-	119	186	169	64	219	25	269	-		
20	1	70	28	120	193	170	10	220	5	270	-		
21	-	71	45	121	199	171	13	221	10	271	-		
22	-	72	61	122	206	172	16	222	15	272	-		
23	-	73	78	123	212	173	20	223	20	273	-		
24	-	74	94	124	219	174	24	224	25	274	-		
25	25	75	111	125	225	175	28	225	5	275	-		
26	100	76	127	126	232	176	32	226	10	276	-		
27	200	77	144	127	-	177	36	227	15	277	-		
28	100	78	160	128	-	178	40	228	20	278	-		
29	10	79	166	129	-	179	47	229	25	279	-		
30	-	80	172	130	20	180	54	230	-	280	-		
31	-	81	178	131	22	181	61	231	-	281	-		
32	-	82	184	132	24	182	68	232	-	282	-		
33	-	83	190	133	26	183	76	233	-	283	-		
34	-	84	196	134	28	184	84	234	-	284	-		
35	-	85	202	135	31	185	92	235	-	285	-		
36	-	86	208	136	34	186	100	236	-	286	-		
37	-	87	-	137	37	187	270	237	-	287	-		
38	-	88	-	138	40	188	-	238	-	288	-		
39	-	89	-	139	47	189	-	239	-	289	-		
40	0	90	56	140	54	190	0	240	-	290	-		
41	0	91	49	141	61	191	0	241	-	291	-		
42	0	92	42	142	68	192	-	242	-	292	-		
43	0	93	35	143	76	193	-	243	-	293	-		
44	0	94	28	144	84	194	-	244	-	294	-		
45	0	95	21	145	92	195	0	245	-	295	-		
46	0	96	14	146	100	196	0	246	-	296	-		
47	0	97	7	147	300	197	-	247	-	297	-		
48	0	98	0	148	-	198	-	248	-	298	-		
49	0	99	-16	149	-	199	-	249	-	299	-		
50	0	100	-33	150	56	200	0	250	-	300	0		

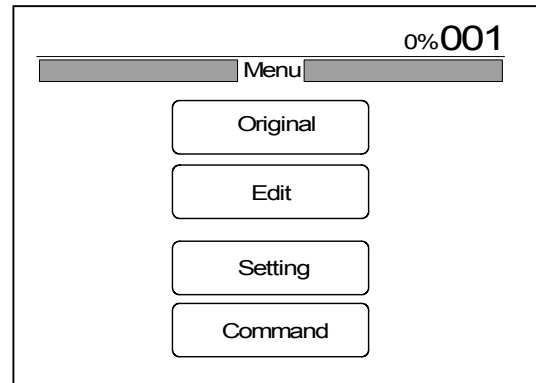
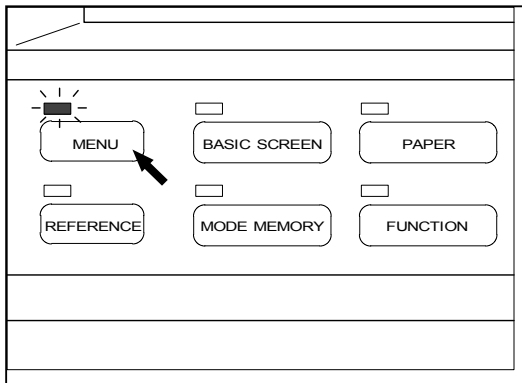
scan count > 450m  
> 60 count  
memory > 64MB  
version > T10.00  
SCSI > ID:6  
> terminator:ON

[Operation]

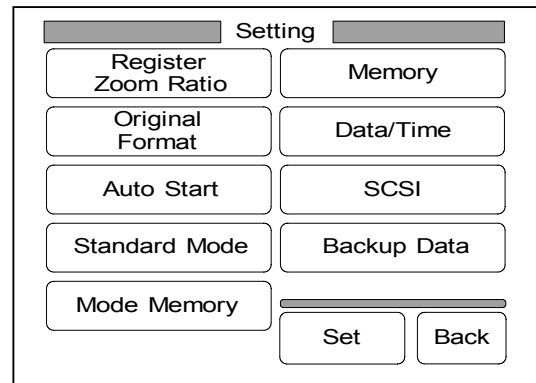
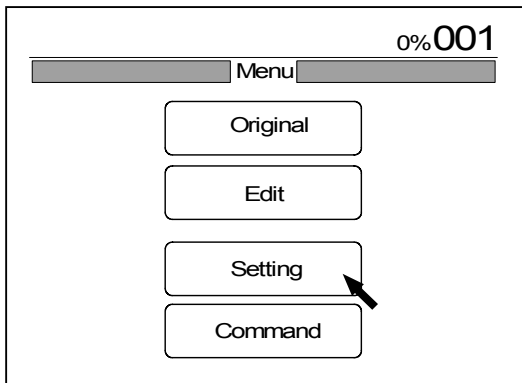
- 1) Enter the Service Mode.



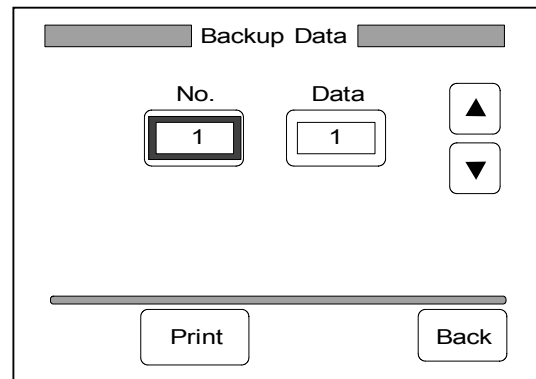
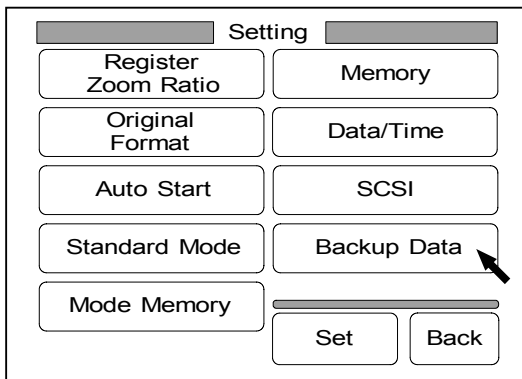
- 2) Push the Menu Key to indicate the Menu Screen on the LCD.



- 3) Press "Setting" to indicate the Setting Screen on the LCD.



- 4) Press "Backup Data" to indicate the Back Up Data Setting Screen on the LCD.

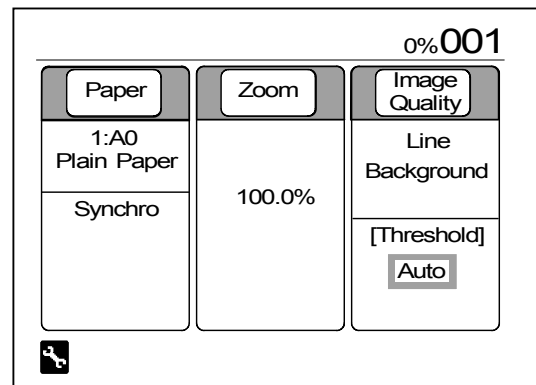


- 5) Press "Print" to print out the Back Up Data List.  
It takes a few minutes until the printer starts printing.

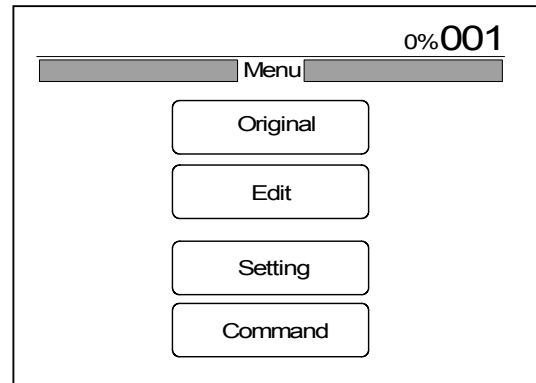
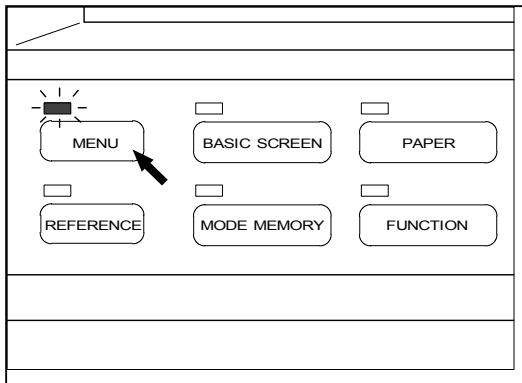
The screenshot shows a screen titled "Backup Data". It features two input fields: "No." and "Data", both containing the number "1". To the right of these fields are two arrow buttons (up and down). At the bottom of the screen, there are two buttons: "Print" and "Back". A mouse cursor is pointing at the "Print" button.

## 7.4.2 How to change each Back Up Data setting

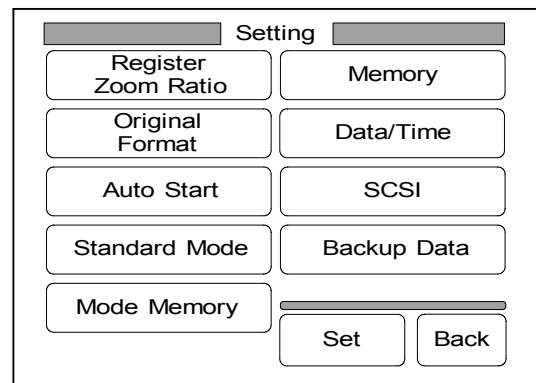
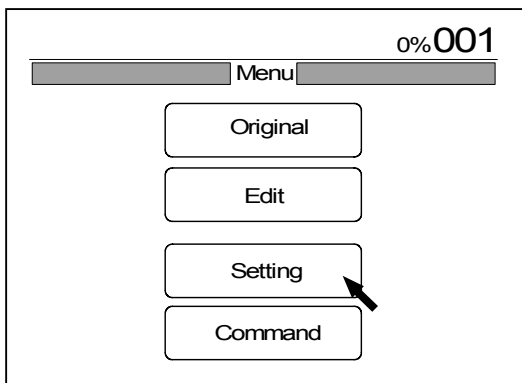
1) Enter the Service Mode.



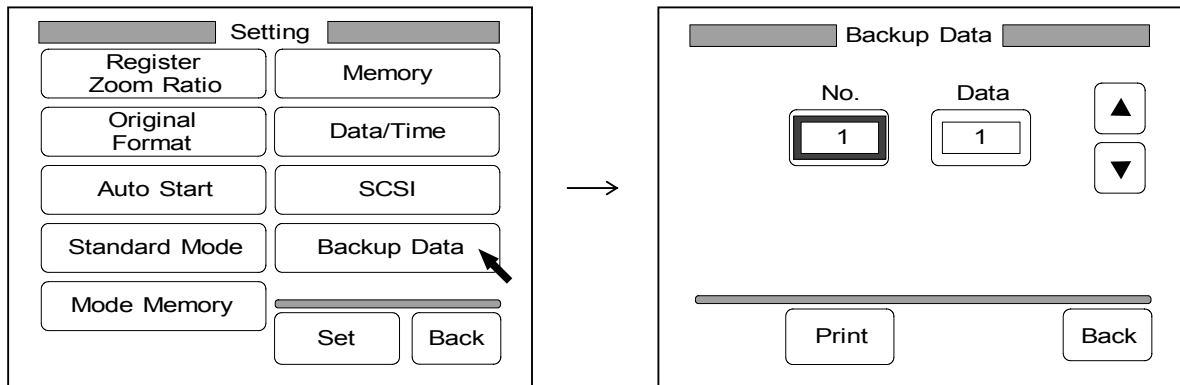
2) Push the Menu Key to indicate the Menu Screen on the LCD.



3) Press "Setting" to indicate the Setting Screen on the LCD.

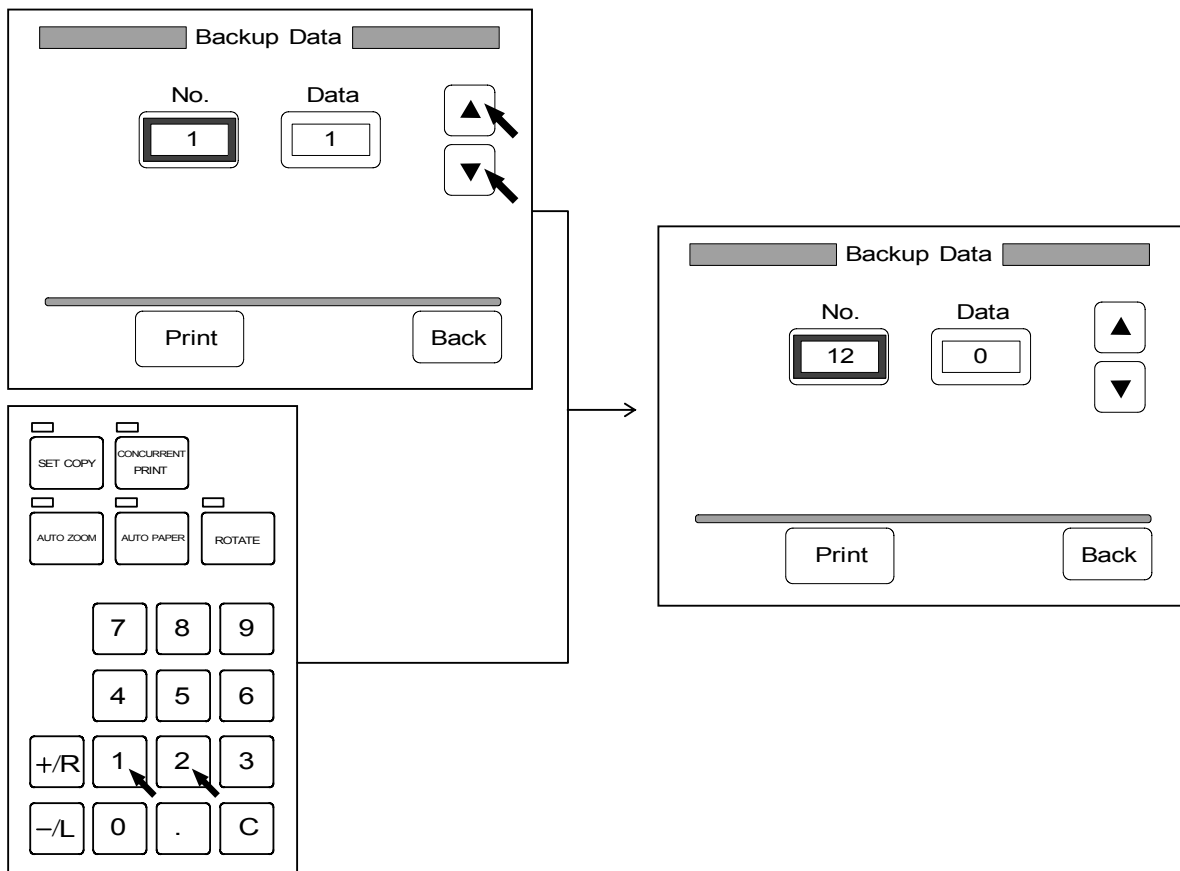


4) Press “Backup Data” to indicate the Back Up Data Setting Screen on the LCD.



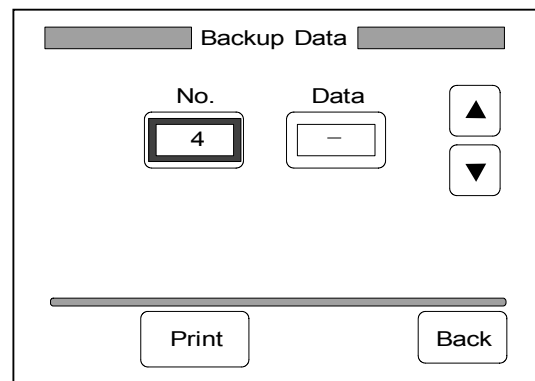
5) When the frame of “No.” is thick, select your required Back Up Data Number pressing ▲ and ▼ on the LCD or inputting the number directly with Ten Keys.

Example : You will change “Timer for Cold Power Save (No.12)”.



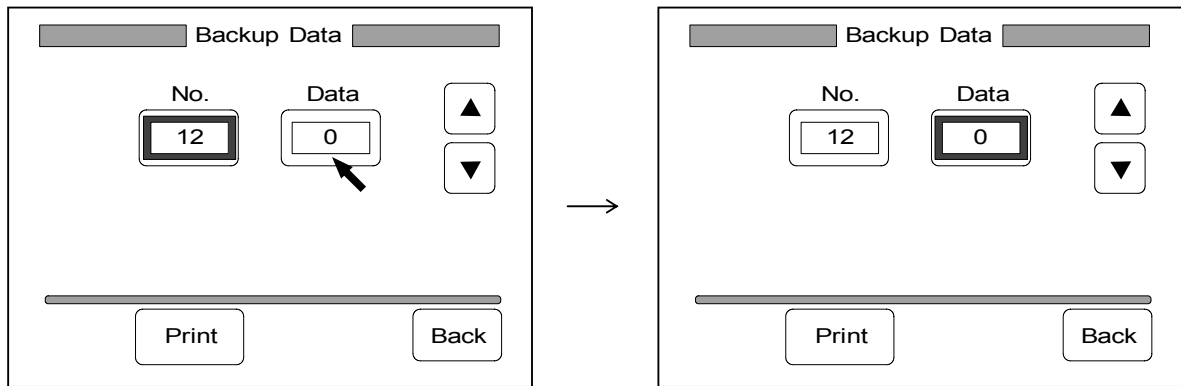
Note : When you select the reserved number, “-” is indicated for “Data”.

(Example : Reserved No.4 is selected.)

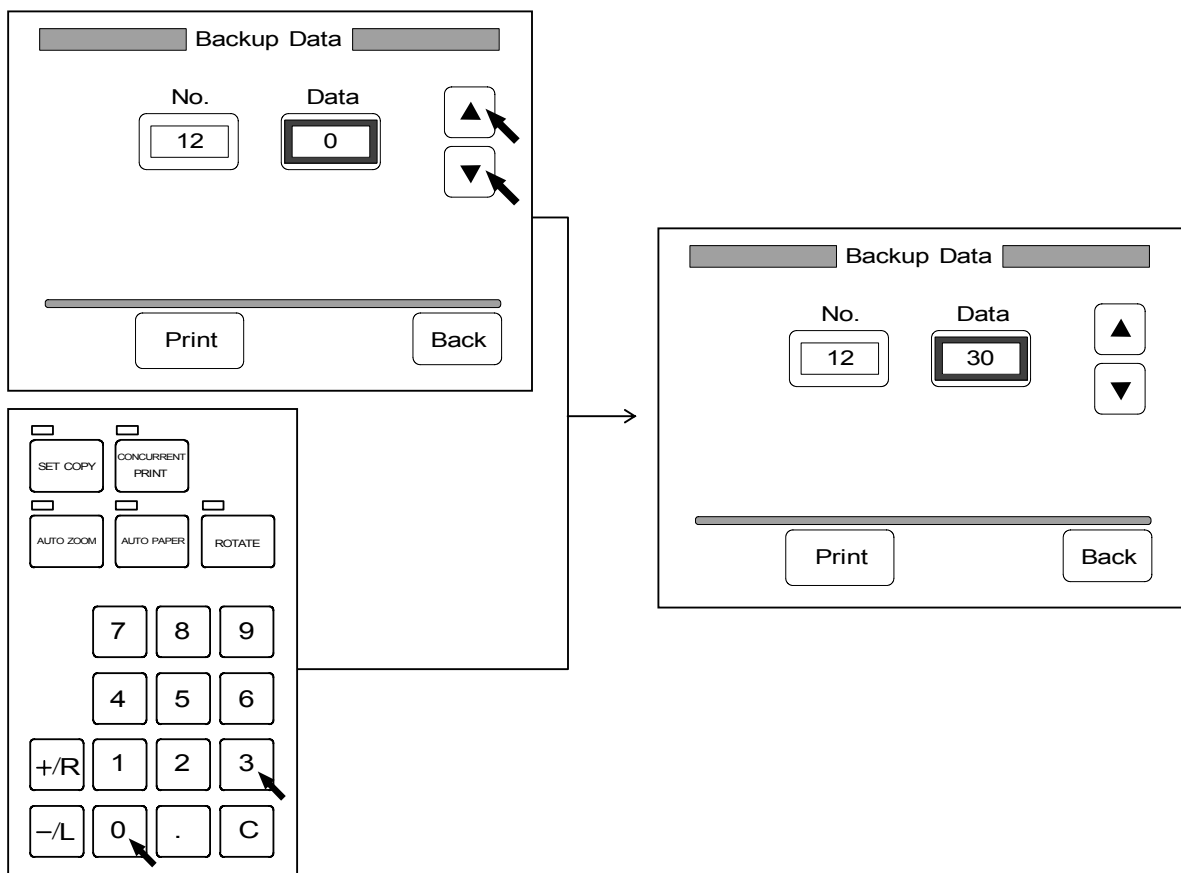




- 6) If you press the value of "Data", its frame becomes thick and it becomes possible to change the setting value.

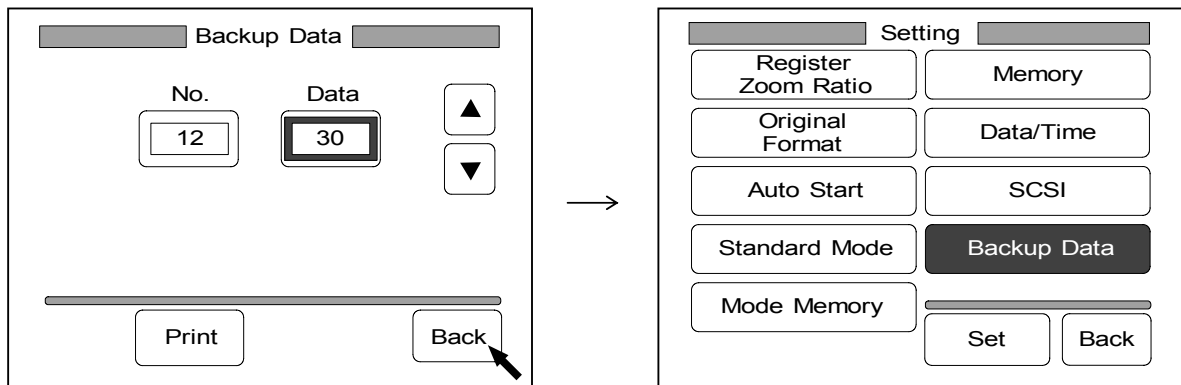


- 7) Change the setting value pressing ▲ and ▼ on the LCD or inputting the value directly with Ten Keys.



8) Press "Back" to indicate the Setting Screen again on the LCD.

"Backup Data" is colored at this time showing that some Back Up Data setting has been changed.



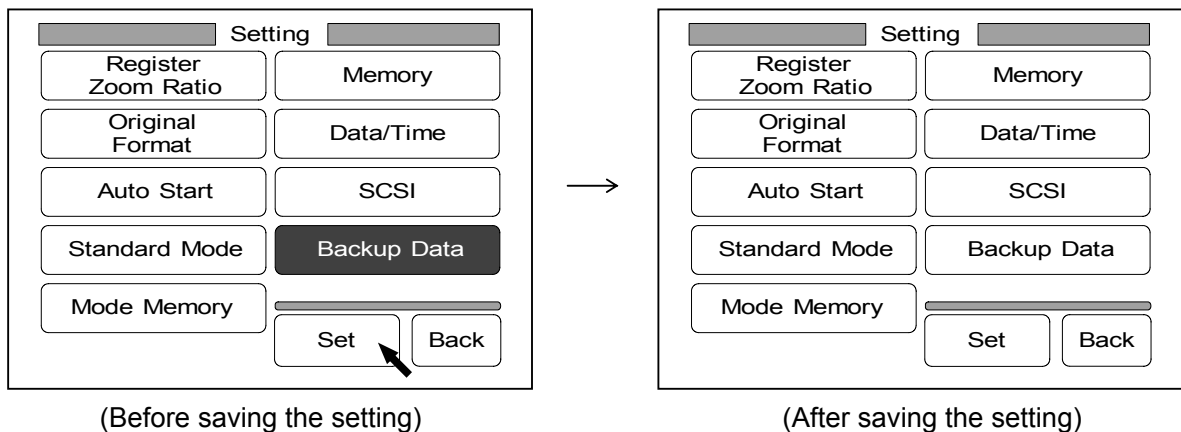
9) You have 2 choices here.

**One choice is to save the change of Back Up Data setting to make it valid later on even if you turn off the machine.**

If you would like to save the setting, press "Set" in the Setting Screen.

"Backup Data" on the LCD is not colored any longer after saving.

Saved setting will be valid later on unless you change it again.

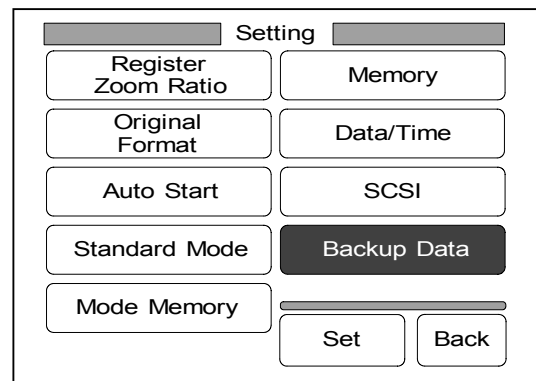


Another choice is not to save the change.

**In this case, the change of Back Up Data setting you have done will be lost if you turn off the scanner.**

If you would not like to save the change, do nothing more in the Setting Screen but indicate another screen such as the Basic Screen.

"Backup Data" is left colored.



### 7.4.3 Back Up Data List

No.	Range of setting value	Default value	Unit	Subjects	Refer to page ;
1	0 to 5	1		Language of LCD message	7-19
2	0 or 1	0		Country setting for English speaking countries	7-20
3	0 or 1	0		Metric or inch	7-20
4				Reserved.	
5	210 to 420	210	1mm	Length of Sample Copy	7-21
6	210 to 420	210	1mm	Length of Initial Cut	7-21
7	10 to 65	30	1mm	Amount of overlap in the Divide Mode	7-22
8	0 or 1	1		Availability to change original format with Sample Key	7-23
9	0 or 1	1		Indication of original format	7-24
10	0 to 60	3	1 minute	Timer for Auto Reset	7-24
11	0 to 60	0	1 minute	Timer for Warm Power Save	7-24
12	0 to 60	0	1 minute	Timer for Cold Power Save	7-25
13	0 or 1	1		Scanner Power Save ON / OFF	7-25
14	1 to 60	15	1 minute	Timer for Scanner Power Save	7-25
15	1 to 4	4		Number of Roll Decks	7-25
16	0 or 1	1		Existence of Bypass Feeder	7-25
17				Reserved.	
18				Reserved.	
19				Reserved.	
20	0 or 1	1		Priority setting (Scanner or controller)	7-26
21				Reserved.	
22				Reserved.	
23				Reserved.	
24	0 or 1	0		Direct Print with printer KIP2710	7-28
25	15 to 1024	25	1 Mbytes	Amount of data stored before starting Direct Print	7-28
26	40 to 200	100	1 mm/sec.	Original Set Speed	7-28
27	40 to 200	200	1 mm/sec.	Original Ejection Speed	7-29
28	40 to 200	100	1 mm/sec.	Original Return Speed	7-29
29	0 to 50	10	0.1 sec.	Sensor Delay Time	7-30
30				Reserved.	
31				Reserved.	
32				Reserved.	
33				Reserved.	
34				Reserved.	
35				Reserved.	
36				Reserved.	
37				Reserved.	
38				Reserved.	
39				Reserved.	
40	-400 to 0	0	0.01%	Horizontal zoom adjustment for Optical Unit Block 1	7-31
41	-400 to 0	0	0.01%	Horizontal zoom adjustment for Optical Unit Block 2	7-31
42	-100 to 100	0	0.1%	Total horizontal zoom adjustment (For plain paper)	7-32
43	-100 to 100	0	0.1%	Total horizontal zoom adjustment (For vellum)	7-32
44	-100 to 100	0	0.1%	Total horizontal zoom adjustment (For film)	7-32

No.	Range of setting value	Default value	Unit	Subjects	Refer to page ;
45	-100 to 100	0	0.1%	Total horizontal zoom adjustment (For "scan to file")	7-32
46	-100 to 100	0	0.1%	Vertical zoom adjustment (For plain paper)	7-33
47	-100 to 100	0	0.1%	Vertical zoom adjustment (For vellum)	7-33
48	-100 to 100	0	0.1%	Vertical zoom adjustment (For film)	7-33
49	-100 to 100	0	0.1%	Vertical zoom adjustment (For "scan to file")	7-33
50	-90 to 90	0	0.1mm	Horizontal center point for scanning	7-33
51	-100 to 100	0	0.1mm	Leading margin adjustment (Timing to open Data Bus)	7-34
52	-100 to 100	0	0.1mm	Trailing margin adjustment (Timing to close Data Bus)	7-34
53	-16 to 16	0	1 pixel	Boundary setting (Horizontal ending pixel for Reading Block 1)	7-35
54	-16 to 16	0	1 pixel	Boundary setting (Horizontal starting pixel for Reading Block 2)	7-35
55				Reserved.	
56				Reserved.	
57				Reserved.	
58				Reserved.	
59				Reserved.	
60	-5000 to 5000	0	0.1mm	Cut length in the Synchro Cut (Only 1st copy done by Direct Print) (Both scanner and printer are 50mm/sec.)	7-38
61	-5000 to 5000	0	0.1mm	Cut length in the Synchro Cut (Only 1st copy done by Direct Print) (Both scanner and printer are 80mm/sec.)	7-38
62	-5000 to 5000	0	0.1mm	Cut length in the Synchro Cut (Only 1st copy done by Direct Print) (Both scanner and printer are 120mm/sec.)	7-38
63	-5000 to 5000	0	0.1mm	Cut length in the Synchro Cut (Only 1st copy done by Direct Print) (Both scanner and printer are 160mm/sec.)	7-38
64	-10 to 10	0	1mm	Cut length in the Synchro Cut (Every copy except for the one done by Direct Print)	7-38
65	-5000 to 5000	0	0.1mm	Cut length in the Synchro Cut (Only 1st copy done by Direct Print)	7-39
66				Reserved.	
67				Reserved.	
68				Reserved.	
69				Reserved.	

No.	Range of setting value	Default value	Unit	Subjects	Refer to page ;
70	0 to 255	28		Data of Threshold Levels from 1 to 17 (Line Mode and Background OFF)	7-40
71	0 to 255	43			
72	0 to 255	57			
73	0 to 255	72			
74	0 to 255	86			
75	0 to 255	101			
76	0 to 255	115			
77	0 to 255	130			
78	0 to 255	144			
79	0 to 255	152			
80	0 to 255	160			
81	0 to 255	168			
82	0 to 255	176			
83	0 to 255	184			
84	0 to 255	192			
85	0 to 255	200			
86	0 to 255	208			
87				Reserved.	
88				Reserved.	
89				Reserved.	
90	-255 to 255	56		Data of Threshold Levels from 1 to 17 (Line Mode and Background ON)	7-42
91	-255 to 255	49			
92	-255 to 255	42			
93	-255 to 255	35			
94	-255 to 255	28			
95	-255 to 255	21			
96	-255 to 255	14			
97	-255 to 255	7			
98	-255 to 255	0			
99	-255 to 255	-16			
100	-255 to 255	-33			
101	-255 to 255	-49			
102	-255 to 255	-66			
103	-255 to 255	-82			
104	-255 to 255	-99			
105	-255 to 255	-115			
106	-255 to 255	-132			
107				Reserved.	
108	0 to 100	75		Data of Threshold Level "Auto" (Line Mode and Background ON)	7-44
109	0 to 255	64		Data of Threshold Level "Auto" applied to background image (Line Mode and Background ON)	7-45

No.	Range of setting value	Default value	Unit	Subjects	Refer to page ;
110	0 to 255	80		Data of Threshold Levels from 1 to 17 applied to line image (Line/Photo Mode and Background OFF)	7-46
111	0 to 255	93			
112	0 to 255	105			
113	0 to 255	118			
114	0 to 255	130			
115	0 to 255	143			
116	0 to 255	155			
117	0 to 255	168			
118	0 to 255	180			
119	0 to 255	186			
120	0 to 255	193			
121	0 to 255	199			
122	0 to 255	206			
123	0 to 255	212			
124	0 to 255	219			
125	0 to 255	225			
126	0 to 255	232			
127				Reserved.	
128				Reserved.	
129				Reserved.	
130	1 to 200	20		Data of Threshold Levels from 1 to 17 applied to photographic image (Line/Photo Mode and Background OFF)	7-48
131	1 to 200	22			
132	1 to 200	24			
133	1 to 200	26			
134	1 to 200	28			
135	1 to 200	31			
136	1 to 200	34			
137	1 to 200	37			
138	1 to 200	40			
139	1 to 200	47			
140	1 to 200	54			
141	1 to 200	61			
142	1 to 200	68			
143	1 to 200	76			
144	1 to 200	84			
145	1 to 200	92			
146	1 to 200	100			
147	1 to 512	300		Brightness applied to photographic image (Line/Photo Mode and Background OFF)	7-50
148				Reserved.	
149				Reserved.	

No.	Range of setting value	Default value	Unit	Subjects	Refer to page ;
150	-255 to 255	56		Data of Threshold Levels from 1 to 17 (Line/Photo Mode and Background ON)	7-51
151	-255 to 255	49			
152	-255 to 255	42			
153	-255 to 255	35			
154	-255 to 255	28			
155	-255 to 255	21			
156	-255 to 255	14			
157	-255 to 255	7			
158	-255 to 255	0			
159	-255 to 255	-22			
160	-255 to 255	-44			
161	-255 to 255	-66			
162	-255 to 255	-88			
163	-255 to 255	-110			
164	-255 to 255	-132			
165	-255 to 255	-140			
166	-255 to 255	-148			
167				Reserved.	
168				Reserved.	
169	0 to 255	64		Data of Threshold Level "Auto" applied to background image (Line/Photo Mode and Background ON)	7-53
170	1 to 200	10		Data of Threshold Levels from 1 to 17 (Photo Mode)	7-54
171	1 to 200	13			
172	1 to 200	16			
173	1 to 200	20			
174	1 to 200	24			
175	1 to 200	28			
176	1 to 200	32			
177	1 to 200	36			
178	1 to 200	40			
179	1 to 200	47			
180	1 to 200	54			
181	1 to 200	61			
182	1 to 200	68			
183	1 to 200	76			
184	1 to 200	84			
185	1 to 200	92			
186	1 to 200	100			
187	1 to 512	270		Brightness applied to photographic image (Photo Mode)	7-56
188				Reserved.	
189				Reserved.	
190	-1 to 1	0		Base data for all Sharpness Levels in the Line Mode (Background OFF)	7-57
191	-1 to 1	0		Base data for all Sharpness Levels in the Line Mode (Background ON)	7-57
192				Reserved.	
193				Reserved.	
194				Reserved.	

No.	Range of setting value	Default value	Unit	Subjects	Refer to page ;
195	-1 to 1	0		Base data for all Sharpness Levels in the Line/Photo Mode (Background OFF)	7-57
196	-1 to 1	0		Base data for all Sharpness Levels in the Line/Photo Mode (Background ON)	7-57
197				Reserved.	
198				Reserved.	
199				Reserved.	
200	-1 to 1	0		Base data for all Sharpness Levels in the Photo Mode	7-57
201				Reserved.	
202				Reserved.	
203				Reserved.	
204				Reserved.	
205	0 to 6	3	pixel by pixel	Size of speckle image deleted by Despeckle Mode (Line Mode)	7-59
206				Reserved.	
207				Reserved.	
208				Reserved.	
209				Reserved.	
210	0 to 127	10	Micro second	LED Strobe Time for Density Levels from 1 to 5 (KIP2050)	7-60
211	0 to 127	15			
212	0 to 127	20			
213	0 to 127	25			
214	0 to 127	30			
215	0 to 127	5	Micro second	LED Strobe Time for Density Levels from 1 to 5 (KIP2080)	7-61
216	0 to 127	10			
217	0 to 127	15			
218	0 to 127	20			
219	0 to 127	25			
220	0 to 127	5	Micro second	LED Strobe Time for Density Level from 1 to 5 (KIP2120)	7-62
221	0 to 127	10			
222	0 to 127	15			
223	0 to 127	20			
224	0 to 127	25			
225	0 to 127	5	Micro second	LED Strobe Time for Density Levels from 1 to 5 (KIP2160)	7-63
226	0 to 127	10			
227	0 to 127	15			
228	0 to 127	20			
229	0 to 127	25			
230	0 to 127	5	Micro second	LED Strobe Time for Density Levels from 1 to 5 (JPN model KIP2600)	7-64
231	0 to 127	10			
232	0 to 127	15			
233	0 to 127	20			
234	0 to 127	25			



No.	Range of setting value	Default value	Unit	Subjects	Refer to page ;
235				Reserved.	
236				Reserved.	
237				Reserved.	
238				Reserved.	
239				Reserved.	
240				Reserved.	
241				Reserved.	
242				Reserved.	
243				Reserved.	
244				Reserved.	
245				Reserved.	
246				Reserved.	
247				Reserved.	
248				Reserved.	
249				Reserved.	
250				Reserved.	
251				Reserved.	
252				Reserved.	
253				Reserved.	
254				Reserved.	
255				Reserved.	
256				Reserved.	
257				Reserved.	
258				Reserved.	
259				Reserved.	
260				Reserved.	
261				Reserved.	
262				Reserved.	
263				Reserved.	
264				Reserved.	
265				Reserved.	
266				Reserved.	
267				Reserved.	
268				Reserved.	
269				Reserved.	
270				Reserved.	
271				Reserved.	
272				Reserved.	
273				Reserved.	
274				Reserved.	
275				Reserved.	
276				Reserved.	
277				Reserved.	
278				Reserved.	
279				Reserved.	
280				Reserved.	
281				Reserved.	
282				Reserved.	
283				Reserved.	
284				Reserved.	
285				Reserved.	

No.	Range of setting value	Default value	Unit	Subjects	Refer to page ;
286				Reserved.	
287				Reserved.	
288				Reserved.	
289				Reserved.	
290	0 to 2	0		Data compress / uncompress (In the Copy Mode)	7-66
291	48 or 630	56	inch	Maximum original length available to scan in Set Copy (Sort)	7-77
292	0 or 1	0		Availability to set multiple number of cut sheet media onto bypass feeder	7-79
293	0 to 1000	80	mm/sec.	Speed of the connected 600dpi printer	7-80
294	0 or 1	0		Start up mode selection (Copy Mode / Scan Mode)	7-80
295	0 or 1	1		Resolution in the Scan Mode (Effective when magnification is not 100%)	7-81
296				Reserved.	
297				Reserved.	
298				Reserved.	
299				Reserved.	
300	0 to 3	0		Kind of scanner	7-81

## 7.4.4 Explanation for each Back Up Data

### No.1 Language of LCD message

Select any of the following languages indicated in the LCD.

Setting value	Language
0	Japanese
1	English
2	French
3	German
4	Italian
5	Spanish

0%001

<b>Paper</b>	<b>Zoom</b>	<b>Image Quality</b>
1:A0 Plain Paper	100.0%	Line Background
Synchro		[Threshold] <b>Auto</b>

(English)

0%001

<b>Papier</b>	<b>Zoom</b>	<b>Qualité image</b>
1:A0 Papier	100.0%	Ligne Elim.Fond
Synchro		[Contraste] <b>Auto</b>

(French)

0%001

<b>Papier</b>	<b>Zoom</b>	<b>Bild</b>
1:A0 Normalpapier	100.0%	Strich Hintergr.
Synchron		[Kontrast] <b>Auto</b>

(German)

0%001

<b>Carta</b>	<b>Zoom</b>	<b>Qualità immagine</b>
1:A0 Carta bianca	100.0%	Linea Pul.fondo
Sincrono		[Contrasto] <b>Auto</b>

(Italian)

0%001

<b>Papel</b>	<b>Zoom</b>	<b>Calidad imagen</b>
1:A0 Papel normal	100.0%	Lineal Limp.Fondo
Sincro		[Limite] <b>Auto</b>

(Spanish)

## **No.2 Country setting for English speaking countries**

In case you selected English in the Back Up Data No.1, select either of the following setting values since the indicated English message is a little different.

Setting value	Substance
0	U.S.A. (American English)
1	U.K. (British English)

## **No.3 Metric or inch**

It is possible to select either metric or inch.

Indications of size setting (original and copying media) and setting unit are decided by this setting.

Setting value	Substance
0	Metric
1	Inch

Original:A1 0%001

Roll	Cut Mode	Size
1:A0 Plain Paper	Synchro	A1s
2:A1 Vellum	Standard	
3:A2 Film		A0
4:A3 Plain Paper	Divide	
Bypass		

(Paper Setting Screen : Metric)

Original:24" 0%001

Roll	Cut Mode	Size
1:36" Plain Paper	Synchro	48" 30" 12"
2:30" Vellum	Standard	44" 24" 11"
3:24" Film		42" 22" 9"
4:18" Plain Paper	Divide	36" 18" 8.5"
Bypass		34" 17"

(Paper Setting Screen : Inch)

0%001

Shift	Margin	Folder
Centering	Leading Edge	OFF
0mm	Trailing Edge	1
	0mm	2
		3
		4
Mirror	Negative	

(Function Setting Screen : Metric)

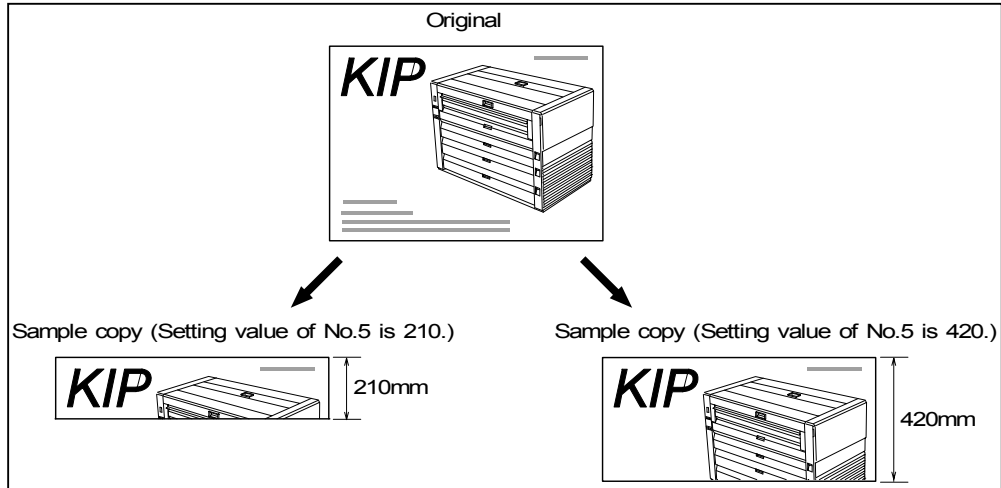
0%001

Shift	Margin	Folder
Centering	Leading Edge	OFF
0.00"	Trailing Edge	1
	0.00"	2
		3
		4
Mirror	Negative	

(Function Setting Screen : Inch)

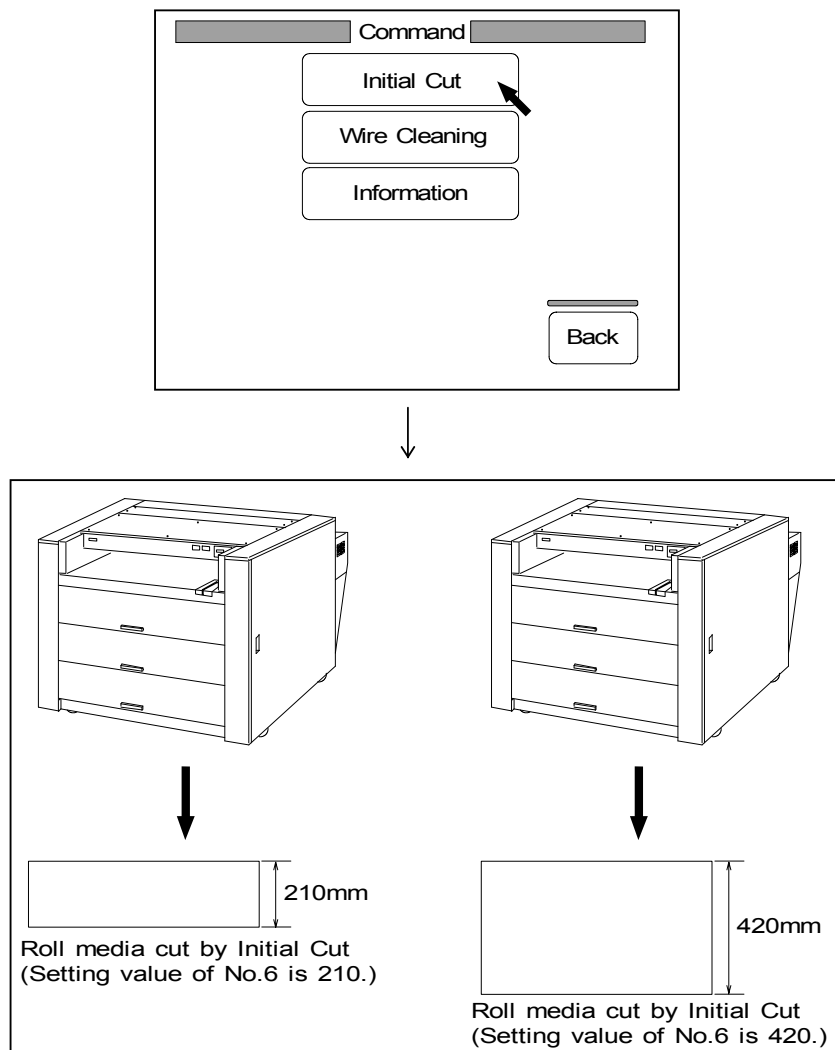
## **No.5 Length of Sample Copy**

It is possible to specify the length of Sample Copy.  
The range is from 210mm to 420mm, and the setting unit is 1mm.



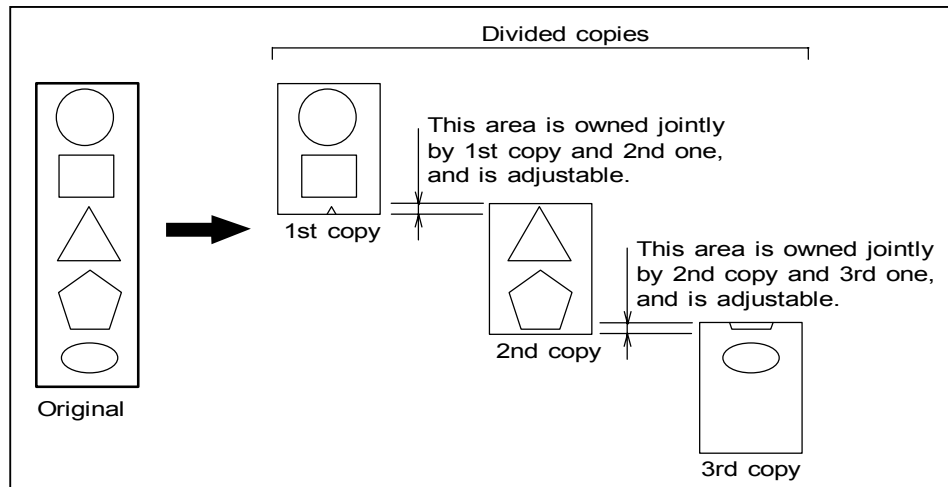
## **No.6 Length of Initial Cut**

It is possible to specify the length of Initial Cut.  
The range is from 210mm to 420mm, and the setting unit is 1mm.



## **No.7 Amount of overlap in the Divide Mode**

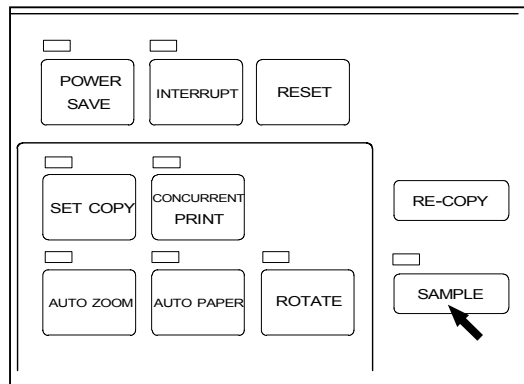
Both former copy and latter one own the same image area jointly.  
It is possible to specify how long image area they should own jointly.  
The range is from 10 to 65mm, and the setting unit is 1mm.



## No.8 Availability to change original format with Sample Key

Selectable setting value is 0 or 1.

If you select “1”, it becomes possible to change the original format pressing the Sample Key as follows.



(Metric : A format)

[A]		0%001
<b>Paper</b>	<b>Zoom</b>	<b>Image Quality</b>
2:A1 Plain Paper	100.0%	Line Background
Synchro		[Threshold] <b>Auto</b>

(Metric : B format)

[B]		0%001
<b>Paper</b>	<b>Zoom</b>	<b>Image Quality</b>
2:A1 Plain Paper	100.0%	Line Background
Synchro		[Threshold] <b>Auto</b>



(Inch : Architecture format)

[Ar]		0%001
<b>Paper</b>	<b>Zoom</b>	<b>Image Quality</b>
2:24" Plain Paper	100.0%	Line Background
Synchro		[Threshold] <b>Auto</b>

(Inch : Engineering format)

[En]		0%001
<b>Paper</b>	<b>Zoom</b>	<b>Image Quality</b>
2:24" Plain Paper	100.0%	Line Background
Synchro		[Threshold] <b>Auto</b>



If you select “0”, it is impossible to change the format with Sample Key.  
(It is necessary to enter the Menu Mode if you would like to change.)

## **No.9 Indication of original format**

Selectable setting value is 0 or 1.

If you select “1”, the LCD will indicate the original format that is selected now.

([A] and [Ar] are original formats.)

(Metric : A format)

[A]		0%001
<b>Paper</b>	<b>Zoom</b>	<b>Image Quality</b>
2:A1 Plain Paper	100.0%	Line Background
Synchro		[Threshold] Auto

(Inch : Architecture format)

[Ar]		0%001
<b>Paper</b>	<b>Zoom</b>	<b>Image Quality</b>
2:24" Plain Paper	100.0%	Line Background
Synchro		[Threshold] Auto

If you select “0”, the original format is not indicated as follows.

(Metric)

		0%001
<b>Paper</b>	<b>Zoom</b>	<b>Image Quality</b>
2:A1 Plain Paper	100.0%	Line Background
Synchro		[Threshold] Auto

(Inch)

		0%001
<b>Paper</b>	<b>Zoom</b>	<b>Image Quality</b>
2:24" Plain Paper	100.0%	Line Background
Synchro		[Threshold] Auto

## **No.10 Timer for Auto Reset**

If no operation has been done for the time decided in this No.10, the Auto Reset works to reset all user settings.

The range is from 0 to 60 minutes, and the setting unit is 1 minute.

If you choose “0”, the Auto Reset will not work.

Last operation → The time decided in No.10 has passed. → Auto Reset works.

## **No.11 Timer for Warm Power Save**

If no operation has been done for the time decided in this No.11, the Warm Power Save works not to consume so much power.

The range is from 0 to 60 minutes, and the setting unit is 1 minute.

If you choose “0”, the Warm Power Save will not work.

Last operation → The time decided in No.11 has passed. → Warm Power Save works.



### **No.12 Timer for Cold Power Save**

If no operation has been done for the time decided in this No.12, the Cold Power Save works not to consume so much power.

The range is from 0 to 60 minutes, and the setting unit is 1 minute.

If you choose "0", the Cold Power Save will not work.

Last operation → The time decided in No.12 has passed. → Cold Power Save works.

Note : If you choose some setting value other than "0" for both Warm Power Save (No.11) and Cold Power Save (No.12), these power save will work orderly (Multi-Power Save).

If you choose "10" for No.11 and "20" for No.12, for example, the Warm Power Save starts working 10 minutes later if you do no operation, and the Cold Power Save starts working 20 minutes after that.

### **No.13 Scanner Power Save ON / OFF**

If no operation has been done for the time decided in the following No.14 and also "ON" is selected in this No.13, the Scanner Power Save works so as not to consume so much power.

Setting value	Contents
0	Scanner Power Save is OFF
1	Scanner Power Save is ON

### **No.14 Timer for Scanner Power Save**

If no operation has been done for the time decided in this No.14 and "ON" is selected in the above No.13, the Scanner Power Save works not to consume so much power.

The range is from 1 to 60 minutes, and the setting unit is 1 minute.

### **No.15 Number of Roll Decks**

This is the setting how many Roll Decks the connected printer has.

Choose the setting value making reference to the following list.

Note : Number of Roll Deck of KIP2000 Series Printer is optional. Do not select a wrong value.

Setting value	Number of Roll Deck	Corresponding KIP printer
1	1	KIP2001
2	2	KIP1230E, KIP2720E and KIP2002
3	3	KIP3620E and KIP2003
4	4	KIP9010 and KIP8000 Printer

### **No.16 Existence of Bypass Feeder**

This is the setting whether or not the connected printer has the Bypass Feeder.

Choose the setting value making reference to the following list.

Setting value	Substance	Corresponding KIP printer
0	Printer does not have Bypass Feeder.	KIP1230E and KIP2000 Series Printer (Without Optional Bypass Feeder)
1	Printer has Bypass Feeder.	KIP2720E, KIP2720E-2, KIP3620E, KIP9010, KIP2000 Series Printer (With Optional Bypass Feeder), KIP6000 and KIP8000 Printer

## **No.20 Priority setting (Scanner or controller)**

If the connected printer has the KIP controller and is corresponded to "Interruption", it is possible to give the priority of printing to either scanner or controller.

Note : "Interruption" means to interrupt printing from the controller temporarily in order to make it possible to print out the copy job from the scanner with priority.  
Please understand that it is different from scanner's Interrupt Mode.

Setting value	Substance
0	Scanner has the priority against controller.
1	Controller has the priority against the scanner.

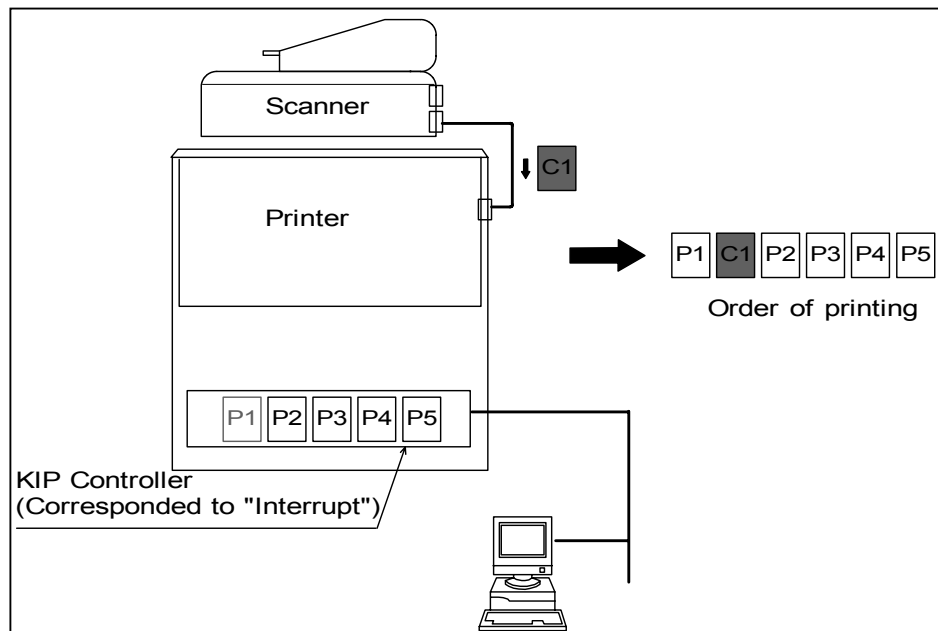
### **In case Scanner has the priority against controller.**

If you do copying (copy job 1 : C1 in the following figure) from the scanner when the controller has some print jobs (P1 to P5 in the following figure) and the printer is now printing the 1st print job P1, print jobs P2 to P5 are interrupted and C1 is printed with priority.  
The printer restarts printing the rest of print jobs P2 to P5 after printing out C1.

Order of print : P1 → **C1** → P2 → P3 → P4 → P5

Note : In case the print job P1 consists of some files as F1, F2, F3 and F4 and supposing the copy job C1 is sent to the printer when the printer is printing F3, the order of print will become as follows.

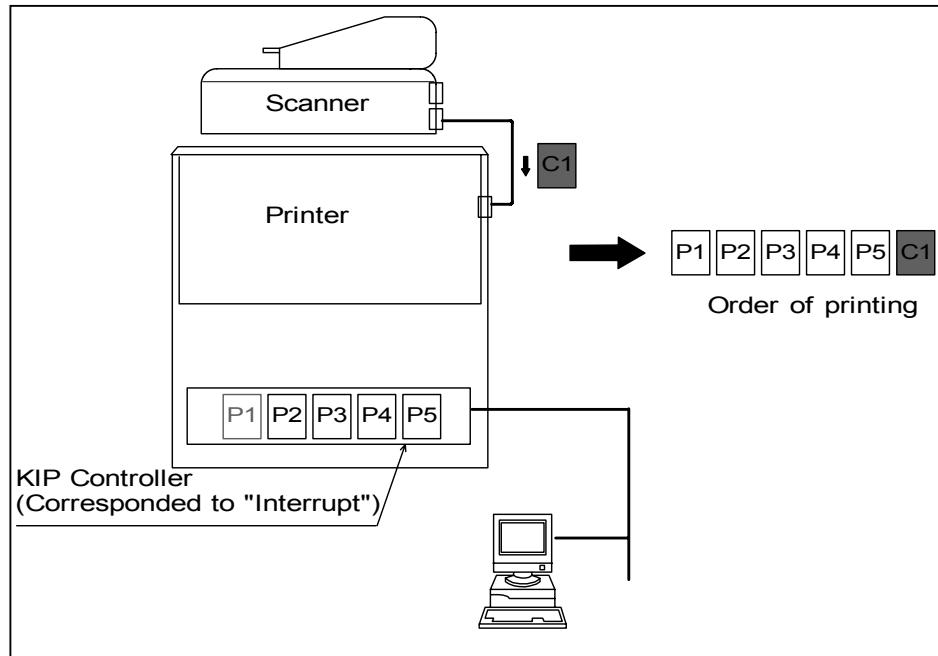
Order of print : F1 → F2 → F3 → **C1** → F4



**Controller has the priority against scanner.**

Even though the situation is same with the example on the former page, the copy job C1 will not be printed until all print jobs P1 to P5 have been printed out completely.

Order of print : P1 → P2 → P3 → P4 → P5 → **C1**



Note : In case you send more print jobs as P6, P7 and P8 to the controller before the copy job C1 is printed, the copy job C1 is printed out after P6 to P8.

P1 → P2 → P3 → P4 → P5 → P6 → P7 → P8 → **C1**

#### **No.24 Direct Print with printer KIP2710**

This is a mode to make it possible to take a Direct Print when the printer KIP2710 (40mm/sec.) is connected.

(If the speed is different between scanner and printer, normally it is impossible to take a Direct Print.)

Selectable setting value is "0" or "1".

Direct Print is available if you select "1".

#### **No.25 Amount of data stored before starting Direct Print**

"Direct Print" means to make scan and print of first copy simultaneously, and it can be done only in case speeds of scanner and printer are same with each other as "KIP2080 and KIP2720E (both are 80mm/sec.)".

When the scanner has taken some amount of image data in the memory during scanning, it starts to send the image data from the memory to the printer and the printer starts printing the first copy while the scanner is still scanning the rest of area of original.

It is required to store some amount of image data in the memory before the printer starts printing.

No.25 decides how many megabytes of image data should be stored in the memory before the printer starts printing.

**The setting value must be "25" normally.**

**Only in the combination of scanner KIP2160 (160mm/sec.) and printer KIP9010 (160mm/sec.), the setting value must be "40".**

**Do not select another setting value positively.**

#### **No.26 Original Set Speed**

When you insert the original under the Upper Unit, the Original Size Sensor 1 detects it at first.

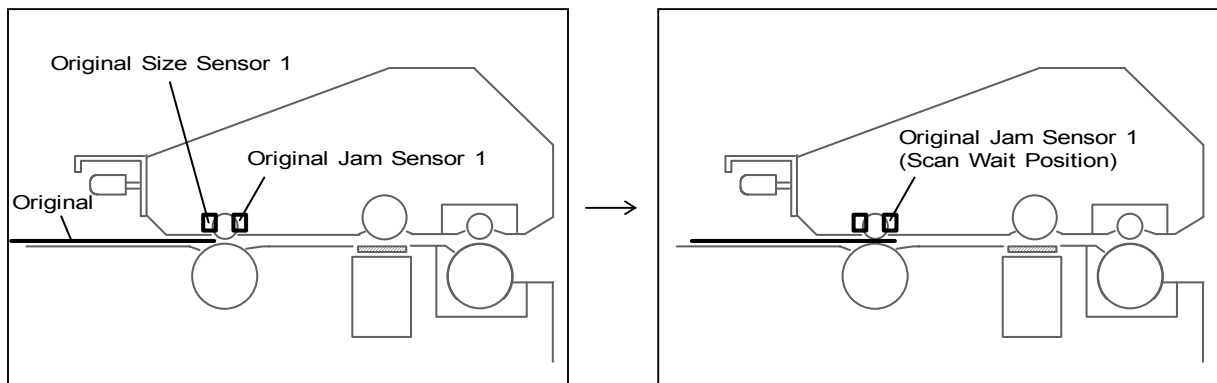
Then, the scanner transports the original to the leading edge side until the Original Jam Sensor 1 detects it.

When the original is detected by the Original Jam Sensor 1, it is stayed there. (This position is called Scan Wait Position.)

In the No.26 it is possible to decide the speed to transport the original from Original Size Sensor 1 to Original Jam Sensor 1 (Scan Wait Position).

The setting unit is "1mm per a second", and the range is from 40 to 200mm per a second.

Note : The result of copy is same even if you change this setting.



## **No.27 Original Ejection Speed**

When the CCD Head finishes to read the original, the original is once stayed and then ejected from the scanner.

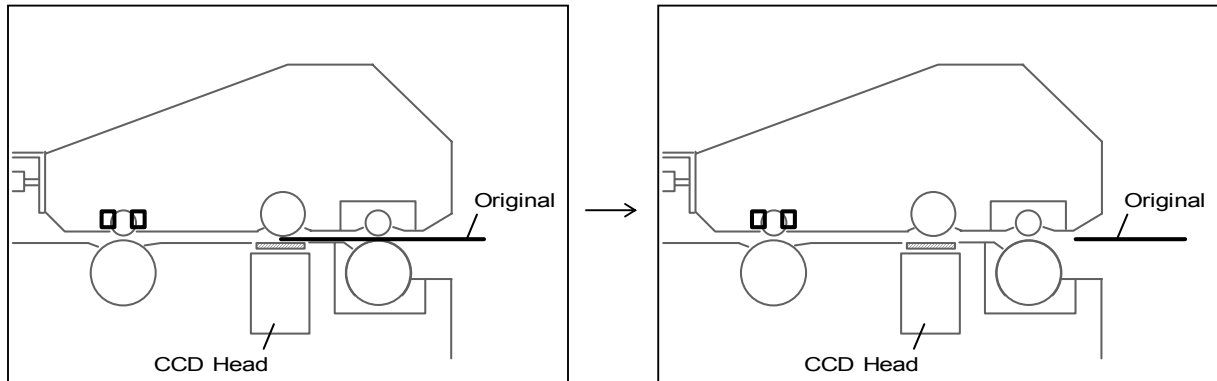
In the No.27 it is possible to decide the speed to transport the original for ejection.

(It is independent of the scanning speed.)

The setting unit is "1mm per a second", and the range is from 40 to 200mm per a second.

(Notes)

1. The result of copy is same even if you change this setting.
2. If the scanner has the Tray to receive the ejected original, we recommend you to select a little faster speed since it is needed to push out the original a little strongly in this case.



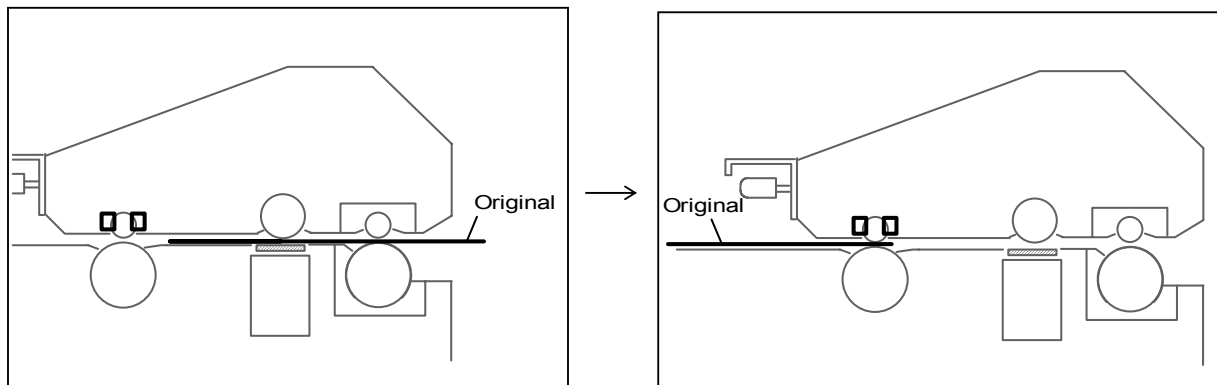
## **No.28 Original Return Speed**

In case of Sample Copy or Divide Mode, the original is returned to the trailing edge side.

In the No.28 it is possible to decide the speed to return the original.

The setting unit is "1mm per a second", and the range is from 40 to 200mm per a second.

Note : The result of copy is same even if you change this setting.



## **No.29 Sensor Delay Time**

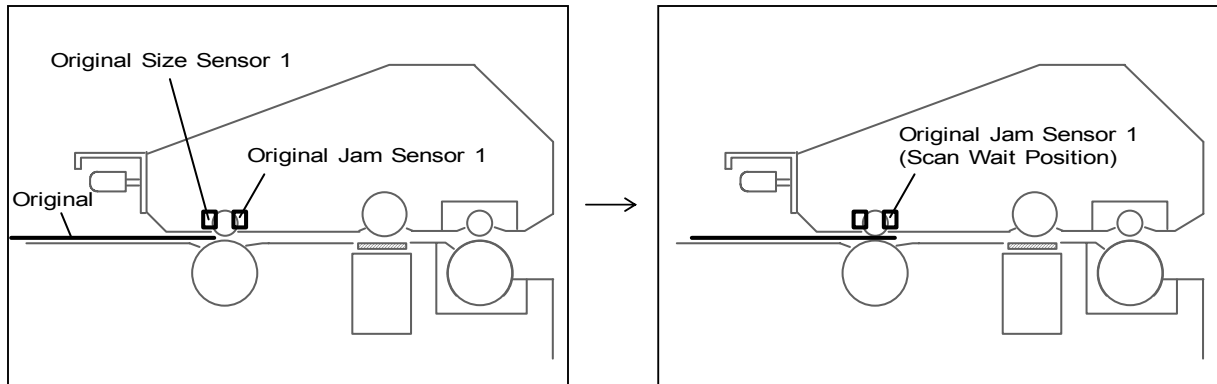
When you insert the original under the Upper Unit, the Original Size Sensor 1 detects it at first. Then, the scanner transports the original to the leading edge side until the Original Jam Sensor 1 detects it.

When the original is detected by the Original Jam Sensor 1, it is stayed there. (This position is called Scan Wait Position.)

In the No.29 it is possible to decide how many seconds later the scanner starts to transport the original from Original Size Sensor 1 to Original Jam Sensor 1 since the Original Size Sensor 1 has detected the original.

The setting unit is 0.1 seconds, and the range is from 0 to 50.

Note : The result of copy is same even if you change this setting.



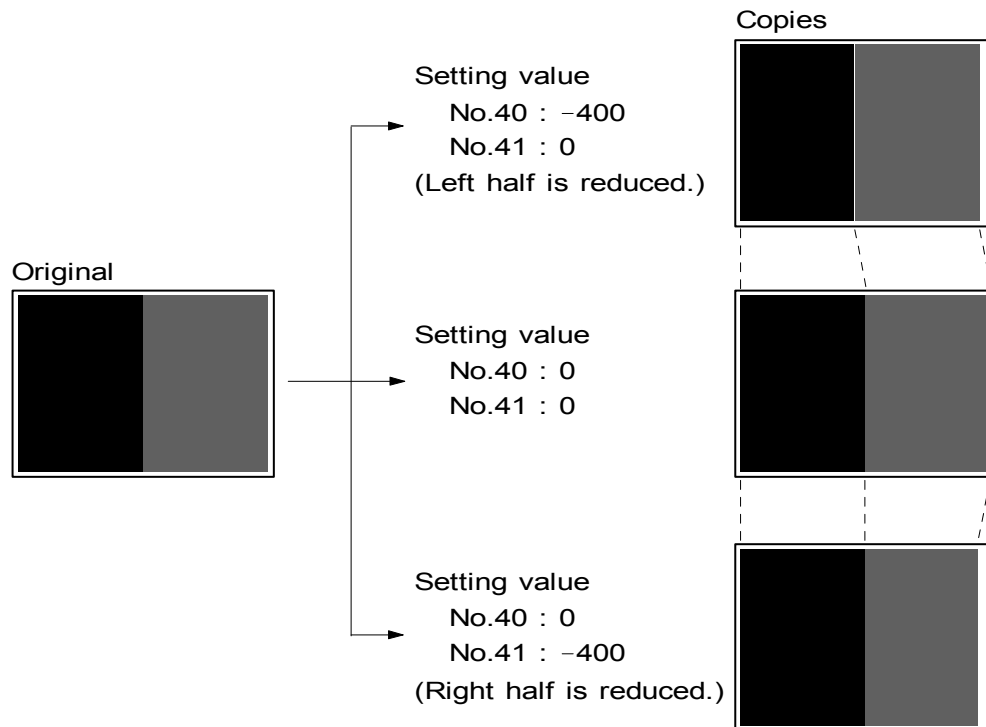
## No.40 and 41 Horizontal zoom adjustment for each Block of Optical Unit

It is possible to adjust the horizontal zoom ratio independently for each Reading Block.

If you decrease the setting value by “-1”, the left half or right half of output image gets 0.01% smaller horizontally.

(Since these settings have been adjusted in the factory before shipment, there will be no case to adjust them in the market place.)

Back Up Data No.	Applied to ;
40	Block 1 (Left half of output image)
41	Block 2 (Right half of output image)



Note : If you replace the CPU PCB with the new one, or if you promote the version of Firmware (Including to replace the PROM on the CPU PCB), it is necessary to recover the former setting value for each Back Up Data because it is initialized after replacement or promotion.

**In case of No.40 and No.41, it is required for validating these settings not only to save them pressing “Set” in the Setting Screen but also to turn off the scanner and then turn it on.**

## **No.42 to 45 Total horizontal zoom adjustment**

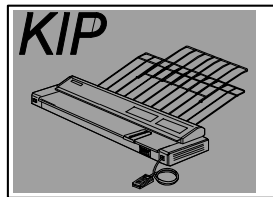
In each Back Up Data Numbers from 42 to 45, it is possible to adjust the horizontal zoom ratio for total width of scanning.

You can decide the setting for each plain paper, vellum, film and “scan to file” independently.

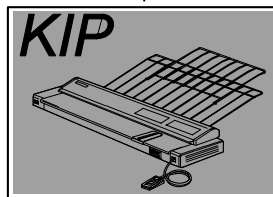
(If you select the plain paper in the Paper Setting Screen, for example, No.42 is used automatically.)

If you reduce the setting value by “-1”, the output image is reduced by “-0.1%” horizontally.

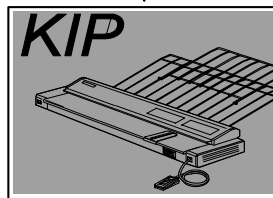
Back Up Data No.	Applied to ;
42	Plain paper
43	Vellum
44	Film
45	Scan to file



Copy  
(Setting value is decreased.)



Original



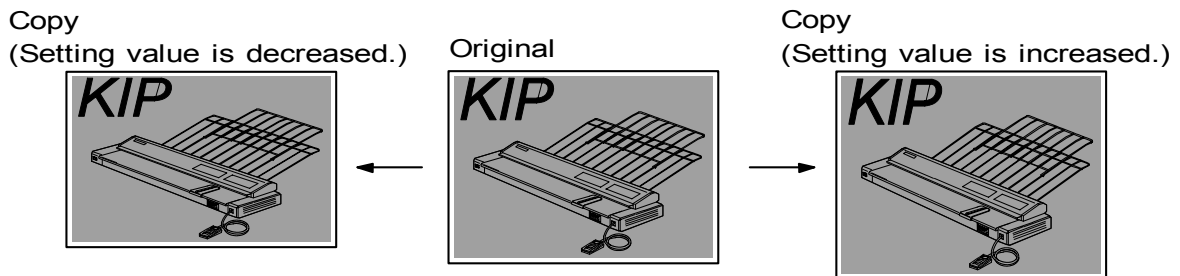
Copy  
(Setting value is increased.)



## **No.46 to 49 Vertical zoom adjustment**

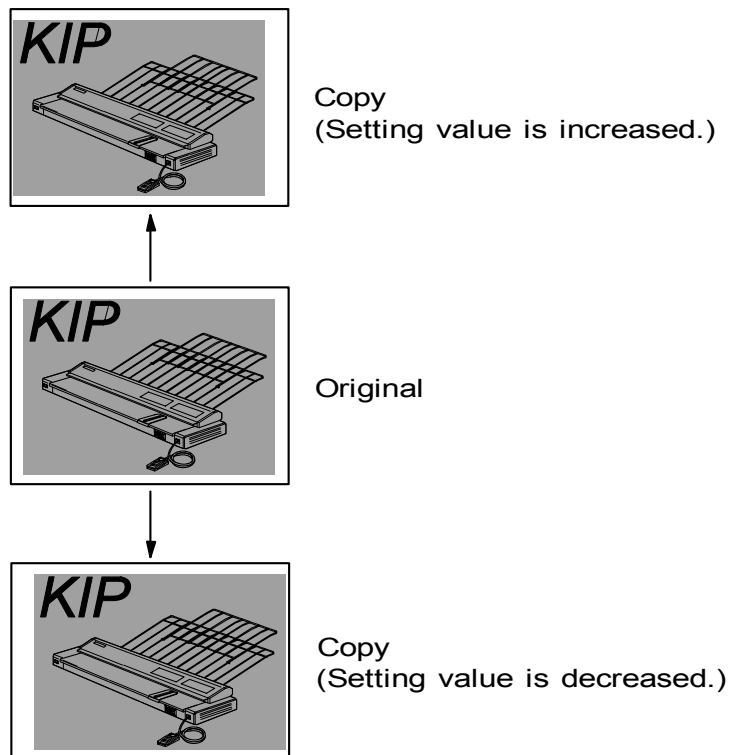
In each Back Up Data Numbers from 46 to 49, it is possible to adjust the vertical zoom.  
You can decide the setting for each plain paper, vellum, film and “scan to file” independently.  
(If you select the plain paper in the Paper Setting Screen, for example, No.46 is used automatically.)  
If you reduce the setting value by “-1”, the output image is reduced by “-0.1%” vertically.

Back Up Data No.	Applied to ;
46	Plain paper
47	Vellum
48	Film
49	Scan to file



## **No.50 Horizontal center point for scanning**

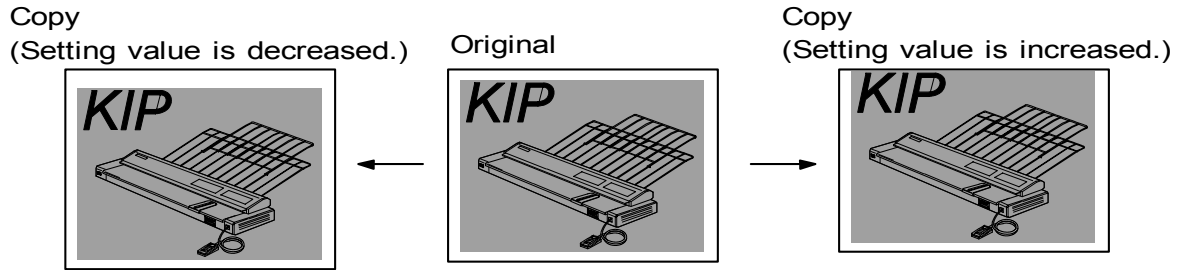
It is possible to compensate the horizontal center point for scanning.  
If you increase the setting value by “+1”, the whole image is shifted 0.1mm to the left.



### **No.51 Leading margin adjustment (Timing to open Data Bus)**

It is possible to adjust the amount of leading margin by changing the timing to open the Image Data Bus.

If you increase the setting value by "+1", the leading margin of the copy gets 0.1mm shorter.



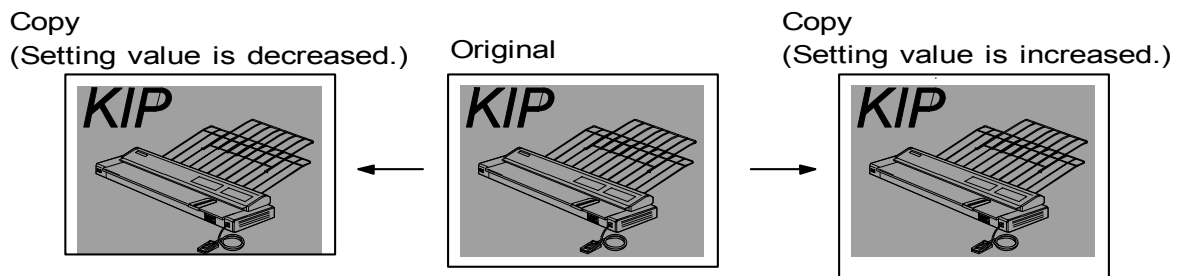
Note : The leading margin setting in this No.51 is different from the Leading Edge setting done in the Function Setting Screen.

The amount of leading margin decided in No.51 is the standard and evenly applied to every copy.  
The Leading Edge done in the Function Setting Screen is user's optional setting.

### **No.52 Trailing margin adjustment (Timing to close Data Bus)**

It is possible to adjust the amount of trailing margin by changing the timing to close the Image Data Bus.

If you increase the setting value by "+1", the trailing margin of the copy gets 0.1mm longer.



Note : The trailing margin setting in this No.52 is different from the Trailing Edge setting done in the Function Setting Screen.

The amount of trailing margin decided in No.52 is the standard and evenly applied to every copy.  
The Trailing Edge done in the Function Setting Screen is user's optional setting.

## **No.53 and 54    Boundary setting (between Reading Blocks 1 and 2)**

It is possible to make the image proper at the boundary part between Reading Blocks 1 and 2.

No.53 is adjustment for the pixel at the horizontal end of the Reading Block 1.

No.54 is adjustment for the pixel at the horizontal head of the Reading Block 2.

The setting value "1" stands for "1 pixel".

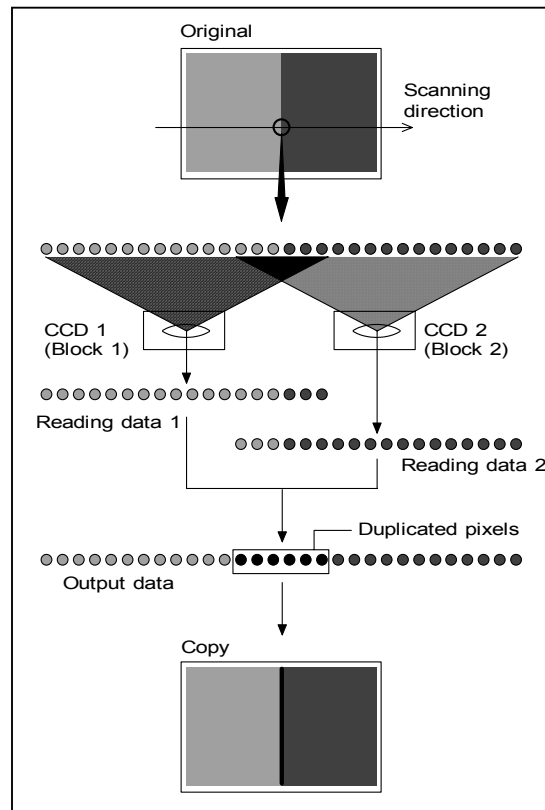
**Basically it is not required to adjust these Back Up Data in the service field because we have adjusted them in the factory before shipment.**

**But please check the copy image after removing the Optical Unit, and if the pixel is duplicating or lacking, please adjust these data by yourself.**

The following is the technical explanation for these data.

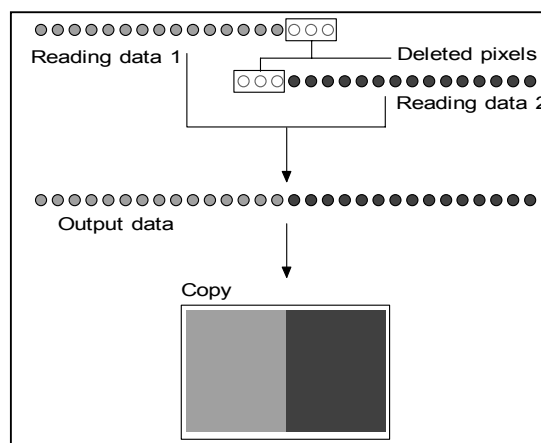
Some number of pixels at the boundary part are read by both CCD 1 and CCD 2 physically.

It means some pixels are duplicated as the following figure when the output data is created with all of these pixels.



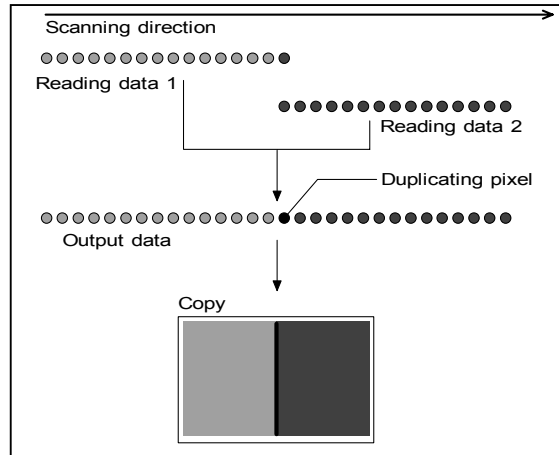
The copy in the above example has a line at the boundary part because of duplication of pixels.

So, we have adjusted both No.53 (For reading data 1) and No.54 (For reading data 2) before shipment to avoid the duplication of pixels at the boundary part in order to gain a proper copy as follows.

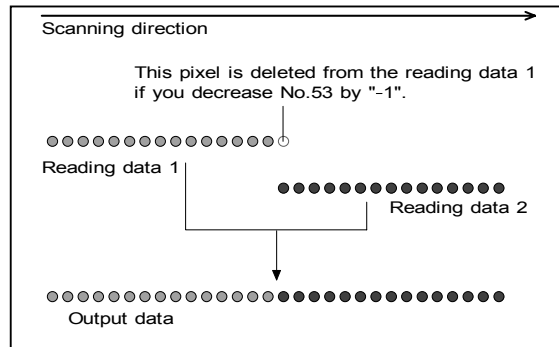


If some pixel is duplicating or some pixel is lacking at the boundary part for some reason, however, it is possible to correct it by adjusting No.53 and No.54.

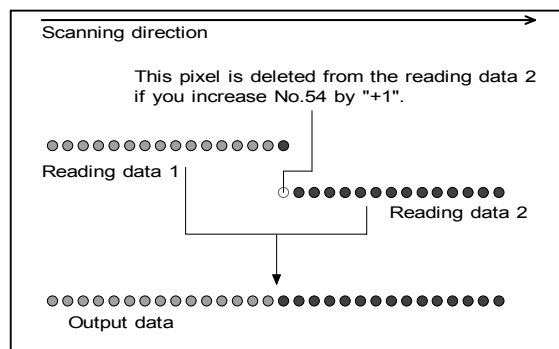
1. In case one pixel is duplicating, do either following (a) or (b).



- (a) Decrease the setting value of No.53 by "-1" to delete one pixel from the horizontal end of the reading data 1 (Block 1 side).



- (b) Or increase the setting value of No.54 by "+1" to delete one pixel from the horizontal head of the reading data 2 (Block 2 side).

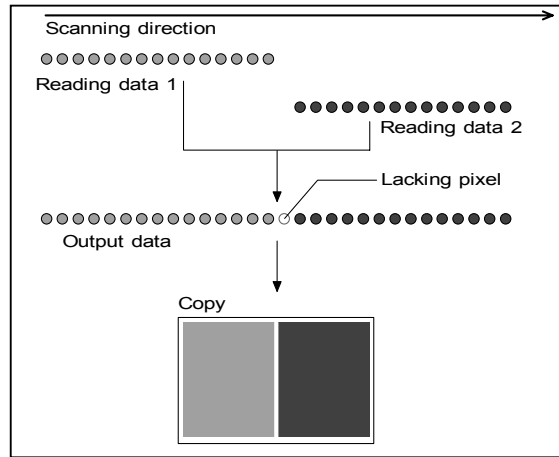


Note : You can gain the same copying result from both No.53 and No.54.

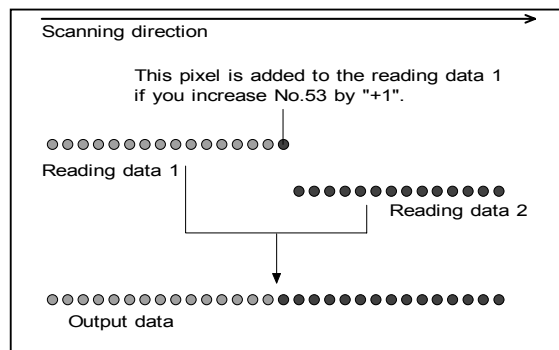
Only the difference between these two is that the result by increment and decrement is opposite.

So, we recommend you to adjust only one of them leaving the other one as it is because you may be confused.

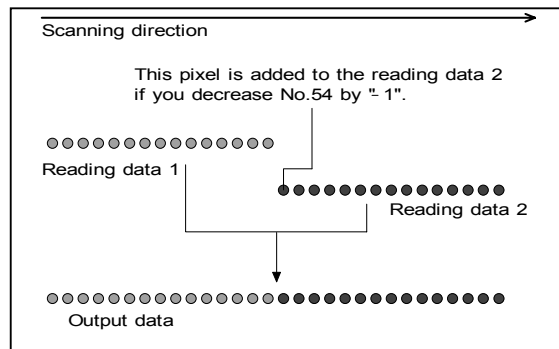
2. In case one pixel is lacking, do either following (a) or (b).



(a) Increase the setting value of No.53 by "+1" to add one pixel to the horizontal end of the reading data 1 (Block 1 side).



(b) Or decrease the setting value of No.54 by "-1" to add one pixel to the horizontal head of the reading data 2 (Block 2 side).



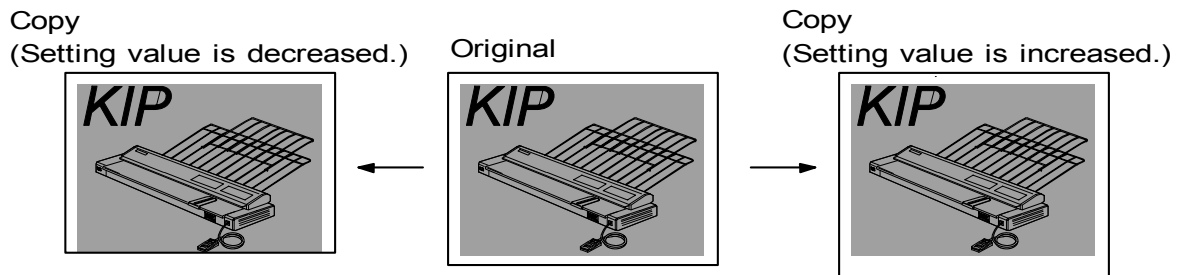
Note : You can gain the same copying result from both No.53 and No.54.  
Only the difference between these two is that the result by increment and decrement is opposite.  
So, we recommend you to adjust only one of them leaving the other one as it is because you may be confused.

#### **No.60 to 63    Cut length in the Synchro Cut (Only 1st copy done by Direct Print : 400dpi model)**

It is possible to adjust the cut length of copy done in the Synchro Cut.  
This setting decides the cut length of first copy done by Direct Print.  
If you increase the setting value by "+1", cut length becomes 0.1mm longer.  
(Trailing margin of the copy gets 0.1mm longer.)

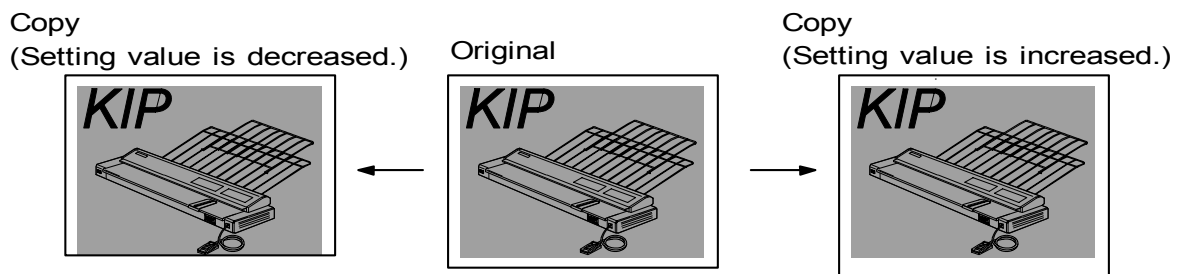
**Notes :** "Direct Print" means to make scan and print of first copy simultaneously, and it can be done only in case speeds of scanner and printer are same with each other as "KIP2080 and KIP2720E (both are 80mm/sec.)".  
When the scanner has taken some amount of image data in the memory during scanning, it starts to send the image data from the memory to the printer and the printer starts printing the first copy while the scanner is still scanning the rest of area of original.

Back Up Data No.	Corresponded to ;	Corresponding KIP printer
60	KIP2050 (50mm/sec.)	
61	KIP2080 (80mm/sec.)	KIP2720E
62	KIP2120 (120mm/sec.)	KIP3620E and KIP1230E
63	KIP2160 (160mm/sec.)	KIP9010



#### **No.64    Cut length in the Synchro Cut (Every copy except for the one done by Direct Print)**

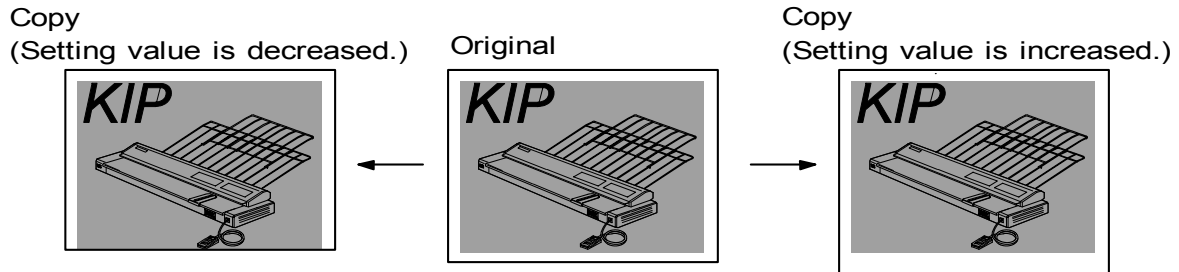
It is possible to adjust the cut length of copy done in the Synchro Cut.  
This setting is applied to every kind of copy except for the one done by "Direct Print".  
The setting range is from -10 to 10.  
If you increase the setting value by "+1", cut length becomes 1mm longer.  
(Trailing margin of the copy gets 1mm longer.)



## **No.65    Cut length in the Synchro Cut (Only 1st copy done by Direct Print : 600dpi model)**

It is possible to adjust the cut length of copy done in the Synchro Cut.  
This setting decides the cut length of first copy done by Direct Print.  
If you increase the setting value by "+1", cut length becomes 0.1mm longer.  
(Trailing margin of the copy gets 0.1mm longer.)

**Notes : This No.65 is effective only when the scanner is KIP2600 (JPN Model).**



### **! NOTE**

Basically both the scanner and the printer must have the same transportation speed to make the Direct Print.

As the speeds of our 600dpi printers are different from that of KIP2600, you may think it is impossible to make it.

KIP2600	.....	70mm/sec.
KIP2720E-2 (600dpi printer)	.....	80mm/sec.
KIP6000 (600dpi printer)	.....	100mm/sec.

But only when the scanner is KIP2600 it is possible to make the Direct Print exceptionally even though the speed is different between scanner and printer.

If the following matters are satisfied it is possible to make it.

1. Standard Cut Mode is selected.
2. Transportation speed of printer is faster than that of scanner.

If the scanner has stored some decided volume of image data even in the middle of scan, it starts to send the data to the printer, and the printer starts printing.

How much volume of image data is stored in the memory relies on the speed of printer, which can be inputted in the Backup Data No.293.

(Refer to [No.293 Speed of the connected 600dpi printer] on the page 7-80.)

Based on this setting, scanner stores a certain volume of image data that is necessary for the inputted printer speed.

If the inputted speed is not correct, wrong volume of image data will be stored and Direct Print can not be performed properly.

## **No.70 to 86 Data of Threshold Levels from 1 to 17 (Line Mode and Background OFF)**

It is possible to change the Data of each Threshold Level.

These settings are effected when Line Mode is selected and Background Mode is OFF.

If you increase the setting value, copy images look darker than before because more images are judged "necessary dark image" and are copied.

If you decrease it, on the contrary, images look lighter than before because more images are judged "unnecessary light image" and are converted to "white".

The adjustable range is from 0 to 255.

These Back Up Data are corresponded to 17 Threshold Levels as follows.

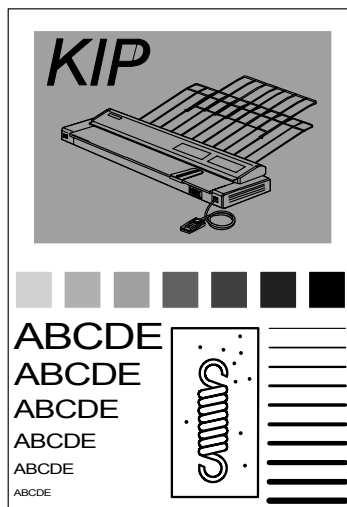
Back Up Data No.	Corresponded to Threshold Level ;	Default value	Back Up Data No.	Corresponded to Threshold Level ;	Default value
70	1	28	79	10	152
71	2	43	80	11	160
72	3	57	81	12	168
73	4	72	82	13	176
74	5	86	83	14	184
75	6	101	84	15	192
76	7	115	85	16	200
77	8	130	86	17	208
78	9	144			

Refer to the example of adjustment on the next page.

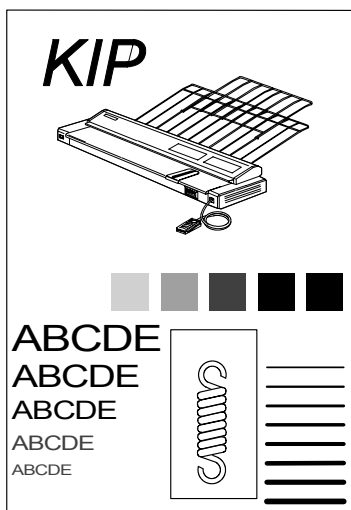


Example of adjustment : In case you adjust the Back Up Data No.74 (Threshold Level 6)

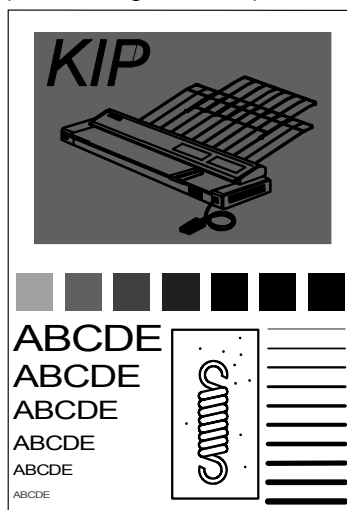
Original



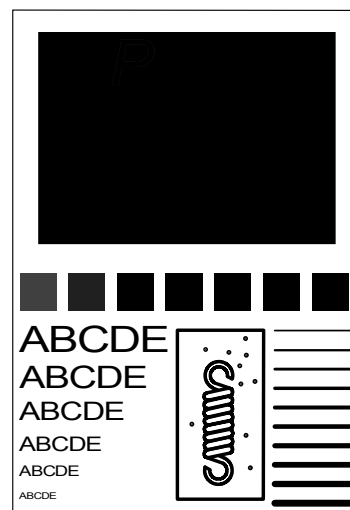
Copy  
(Setting value is decreased to 30.)



Copy before adjustment  
(Default setting value : 101)



Copy  
(Setting value is increased to 200.)



## **No.90 to 106 Data of Threshold Levels from 1 to 17 (Line Mode and Background ON)**

It is possible to change the Data of each Threshold Level.

These settings are effected when Line Mode is selected and Background Mode is ON.

If you increase the setting value, copy images look lighter than before because more images are judged "unnecessary light image" and are converted to "white".

If you decrease it, on the contrary, images look darker than before because more images are judged "necessary dark image" and are copied.

The adjustable range is from -255 to +255.

When you change the setting value, the copying result of wide solid image is more changed than that of line image because the Back Ground Mode is ON.

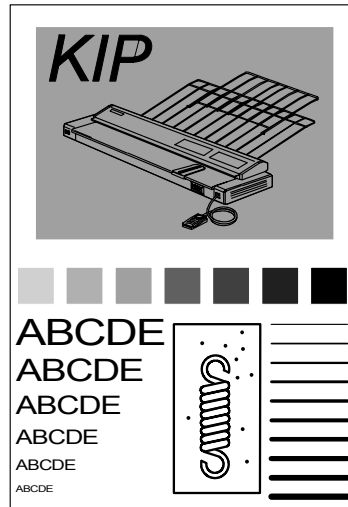
These Back Up Data are corresponded to 17 Threshold Levels as follows.

Back Up Data No.	Corresponded to Threshold Level ;	Default value	Back Up Data No.	Corresponded to Threshold Level ;	Default value
90	1	56	99	10	-16
91	2	49	100	11	-33
92	3	42	101	12	-49
93	4	35	102	13	-66
94	5	28	103	14	-82
95	6	21	104	15	-99
96	7	14	105	16	-115
97	8	7	106	17	-132
98	9	0			

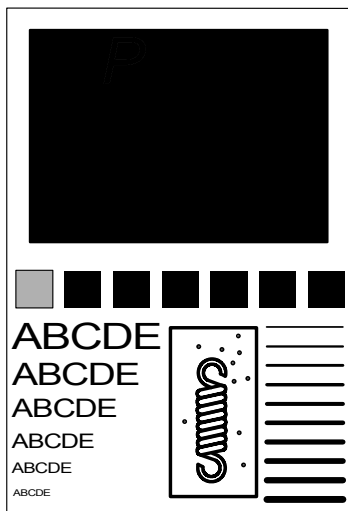
Refer to the example of adjustment on the next page.

Example of adjustment : In case you adjust the Back Up Data No.98 (Threshold Level 9)

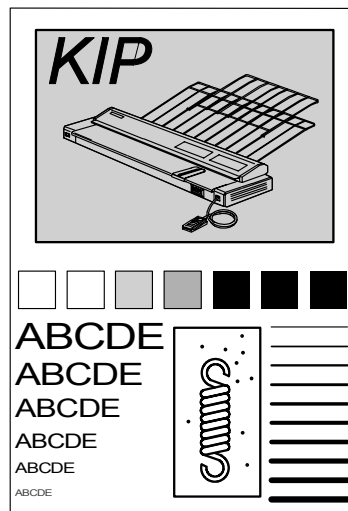
Original



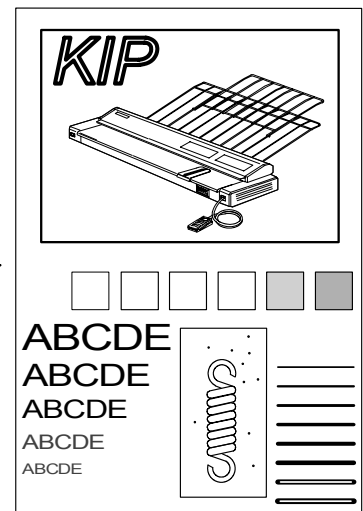
Copy  
(Setting value is decreased to -130.)



Copy before adjustment  
(Default setting value : 0)



Copy  
(Setting value is increased to 50.)



## No.108 Data of Threshold Level “Auto” (Line Mode and Background ON)

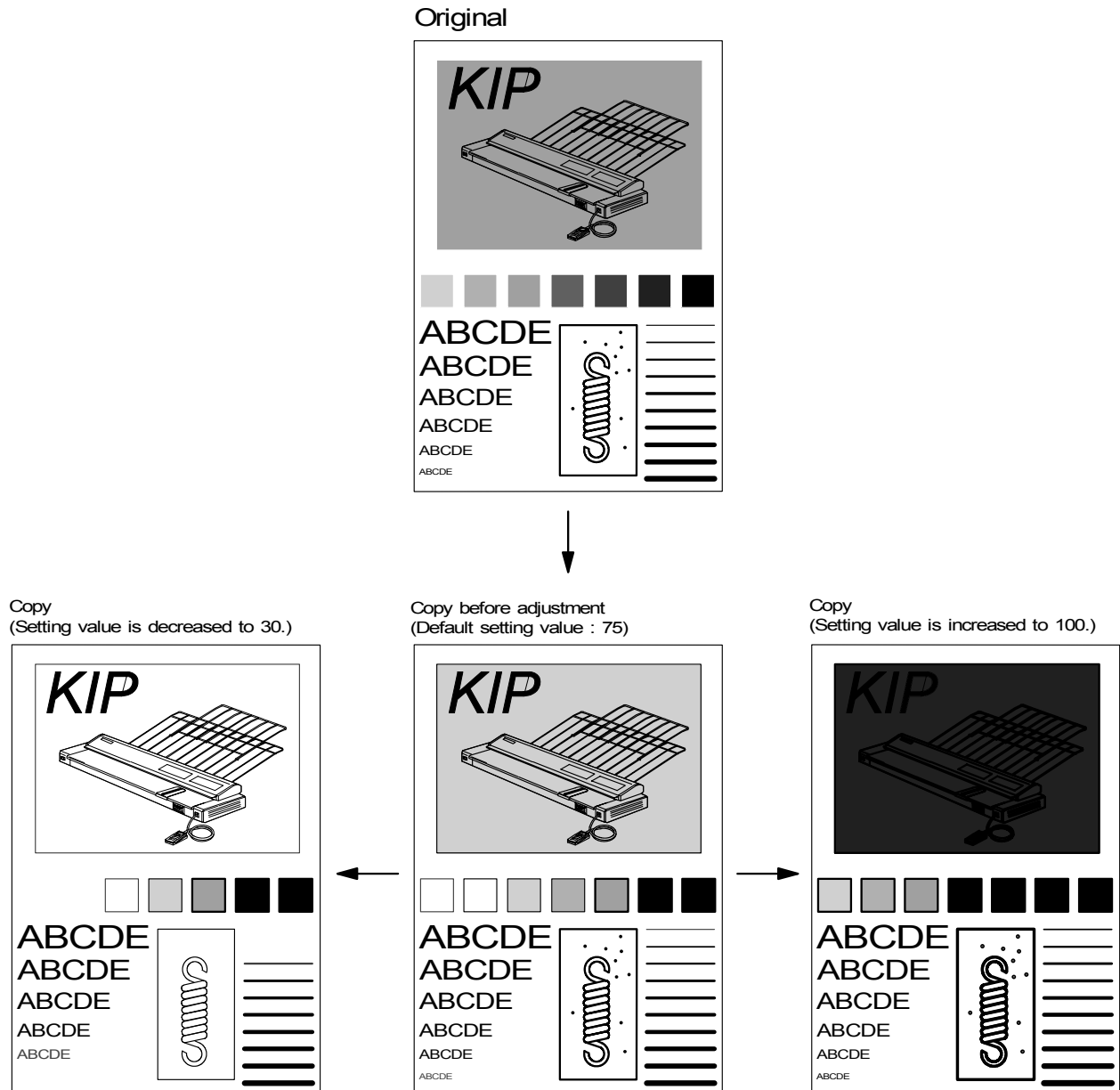
It is possible to change the Data of Threshold Level.

This setting is effected when Line Mode is selected, Background Mode is ON and Threshold Level “Auto” is selected.

If you increase the setting value, copy images look darker than before because more images are judged “necessary dark image” and are copied.

If you decrease it, on the contrary, images look lighter than before because more images are judged “unnecessary light image” and are converted to “white”.

The adjustable range is from 0 to 100.



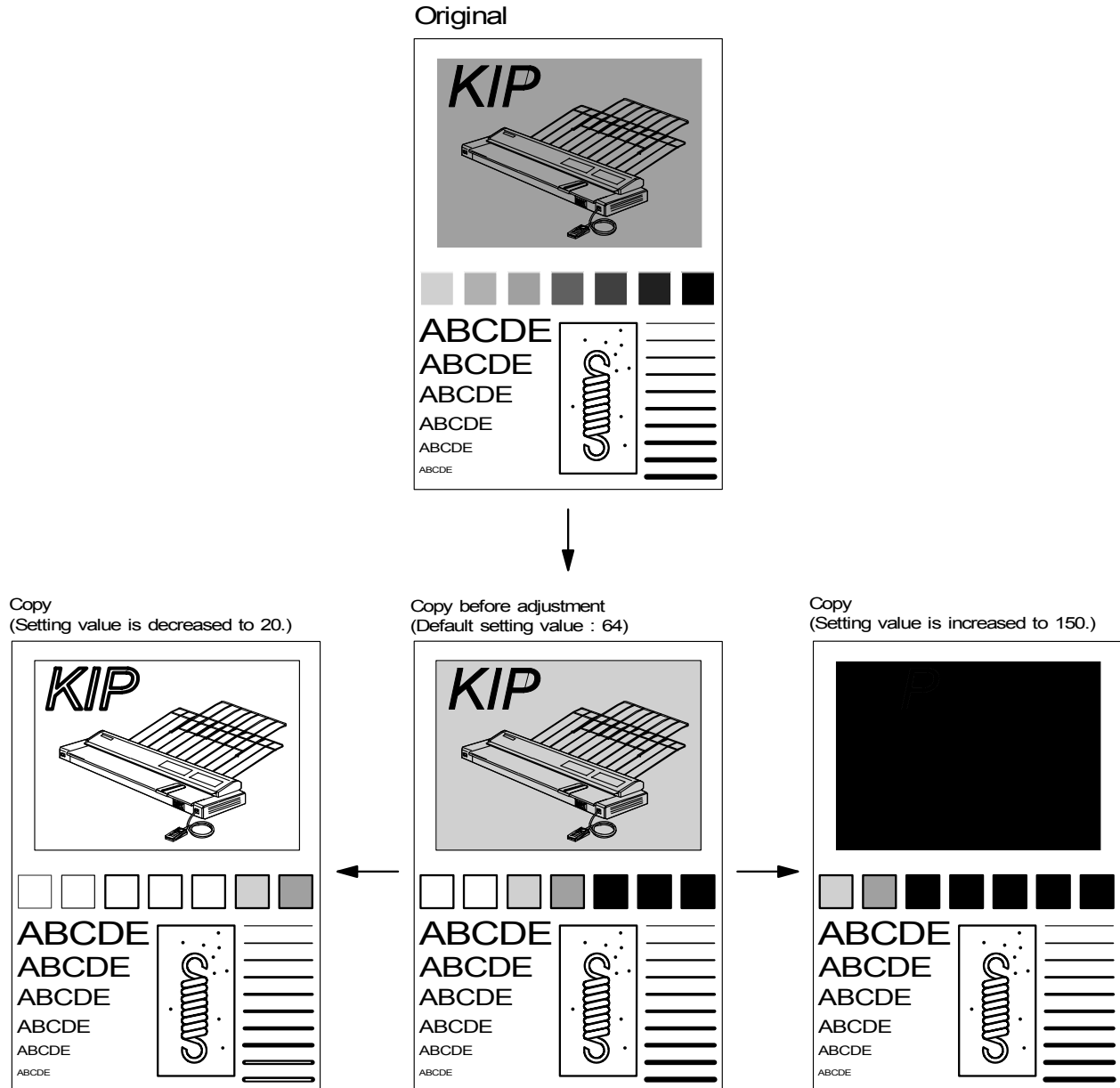
**No.109 Data of Threshold Level “Auto” applied to background image  
(Line Mode and Background ON)**

It is possible to change the Data of Threshold Level applied to the background image.  
This setting is effected when Line Mode is selected, Background Mode is ON and Threshold Level  
“Auto” is selected.

If you increase the setting value, wide solid images are copied because the Background Mode works weakly and these images are judged “necessary solid image”.

If you decrease it, on the contrary, wide solid images are not copied but are converted to “white” because the Background Mode works strongly and these images are judged “unnecessary light background”.

The adjustable range is from 0 to 255.



**No.110 to 126 Data of Threshold Levels from 1 to 17 applied to line image**  
**(Line/Photo Mode and Background OFF)**

It is possible to change the Data of each Threshold Level.

These settings are effected when Line/Photo Mode is selected and Background Mode is OFF, and have influence on the line image.

If you increase the setting value, thin line images become dark and clear because they are judged "necessary dark image" and are copied.

If you decrease it, on the contrary, thin line images light and vague because they are judged "unnecessary light image" and are converted to "white".

The adjustable range is from 0 to 255.

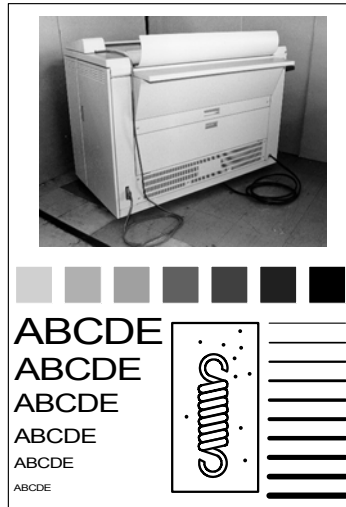
These Back Up Data are corresponded to 17 Threshold Levels as follows.

Back Up Data No.	Corresponded to Threshold Level ;	Default value	Back Up Data No.	Corresponded to Threshold Level ;	Default value
110	1	80	119	10	186
111	2	93	120	11	193
112	3	105	121	12	199
113	4	118	122	13	206
114	5	130	123	14	212
115	6	143	124	15	219
116	7	155	125	16	225
117	8	168	126	17	232
118	9	180			

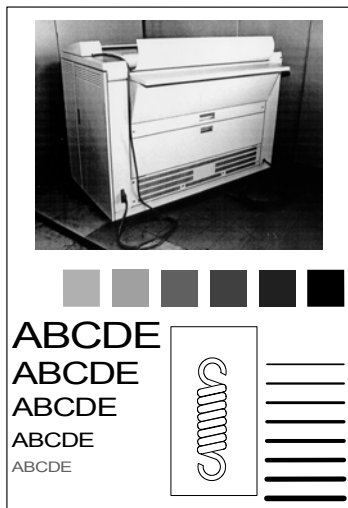
Refer to the example of adjustment on the next page.

Example of adjustment : In case you adjust the Back Up Data No.118 (Threshold Level 9)

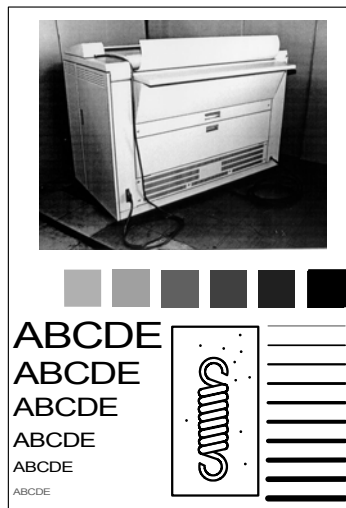
Original



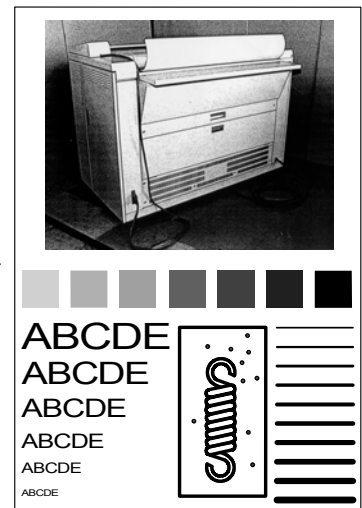
Copy  
(Setting value is decreased to 80.)



Copy before adjustment  
(Default setting value : 180)



Copy  
(Setting value is increased to 230.)



**No.130 to 146 Data of Threshold Levels from 1 to 17 applied to photographic image  
(Line/Photo Mode and Background OFF)**

It is possible to change the Data of each Threshold Level.

These settings are effected when Line/Photo Mode is selected and Background Mode is OFF, and have influence on the photographic image.

If you increase the setting value, the photographic image looks darker than before because many light parts of it are judged "necessary dark image" and are copied.

If you decrease it, on the contrary, the photographic image looks lighter than before because many light parts are judged "unnecessary light image" and are converted to "white".

The adjustable range is from 1 to 200.

These Back Up Data are corresponded to 17 Threshold Levels as follows.

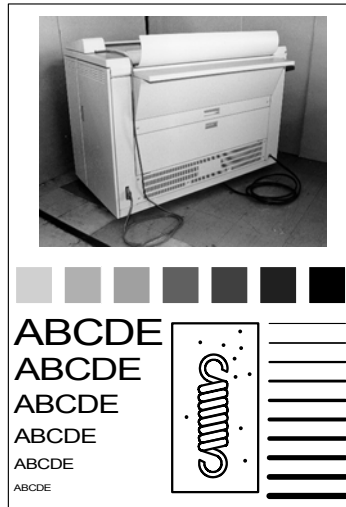
Back Up Data No.	Corresponded to Threshold Level ;	Default value	Back Up Data No.	Corresponded to Threshold Level ;	Default value
130	1	20	139	10	47
131	2	22	140	11	54
132	3	24	141	12	61
133	4	26	142	13	68
134	5	28	143	14	76
135	6	31	144	15	84
136	7	34	145	16	92
137	8	37	146	17	100
138	9	40			

Refer to the example of adjustment on the next page.

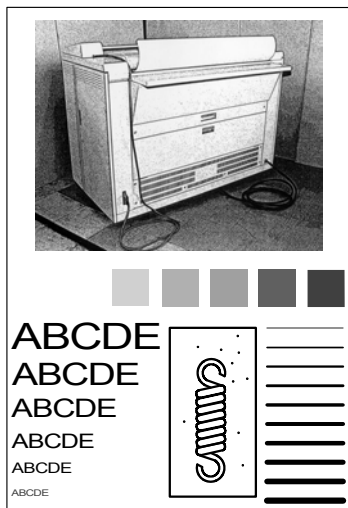


Example of adjustment : In case you adjust the Back Up Data No.138 (Threshold Level 9)

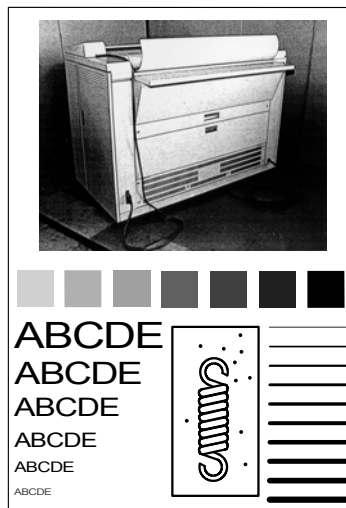
Original



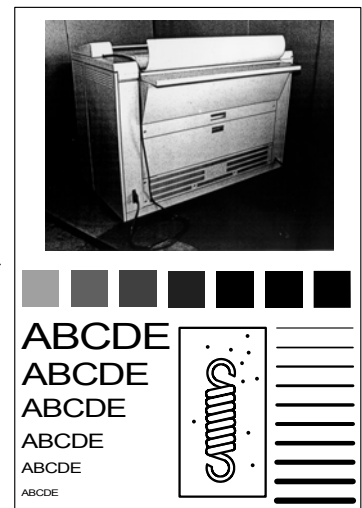
Copy  
(Setting value is decreased to 20.)



Copy before adjustment  
(Default setting value : 40)



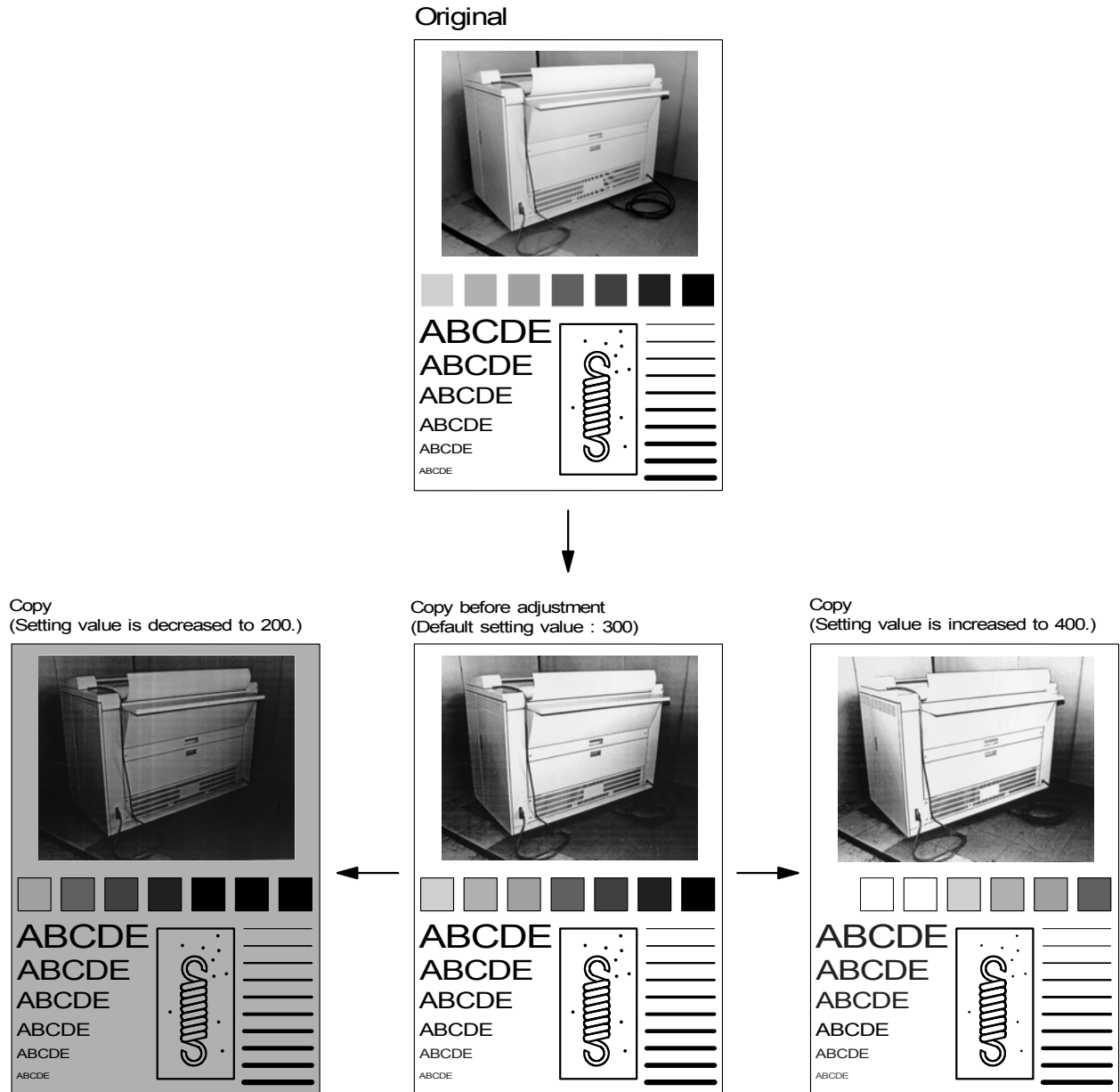
Copy  
(Setting value is increased to 60.)



## **No.147 Brightness applied to photographic image (Line/Photo Mode and Background OFF)**

It is possible to change the brightness applied to the photographic image.  
This setting is effected when Line/Photo Mode is selected and Background Mode is OFF.

If you increase the setting value, the photographic image looks lighter than before.  
If you decrease it, on the contrary, it looks darker than before.  
The adjustable range is from 1 to 512.



**No.150 to 166 Data of Threshold Levels from 1 to 17 (Line/Photo Mode and Background ON)**

It is possible to change the Data of each Threshold Level.

These settings are effected when Line/Photo Mode is selected and Background Mode is ON.

If you increase the setting value, copy images (both line image and photographic one) look lighter than before because more images are judged “unnecessary light image” and are converted to “white”.

If you decrease it, on the contrary, copy images look darker than before because more images are judged “necessary dark image” and are copied.

The adjustable range is from -255 to 255.

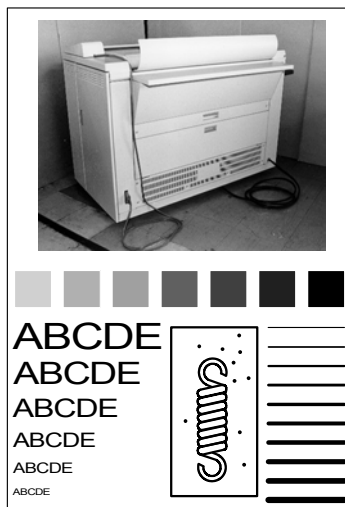
These Back Up Data are corresponded to 17 Threshold Levels as follows.

Back Up Data No.	Corresponded to Threshold Level ;	Default value	Back Up Data No.	Corresponded to Threshold Level ;	Default value
150	1	56	159	10	-22
151	2	49	160	11	-44
152	3	42	161	12	-66
153	4	35	162	13	-88
154	5	28	163	14	-110
155	6	21	164	15	-132
156	7	14	165	16	-140
157	8	7	166	17	-148
158	9	0			

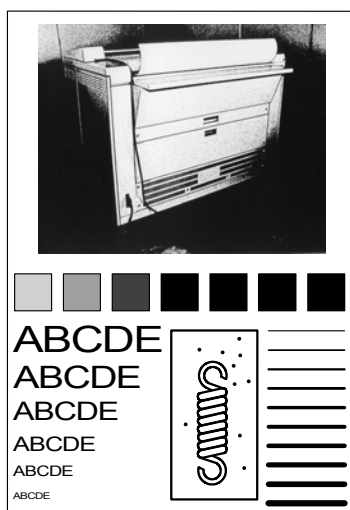
Refer to the example of adjustment on the next page.

Example of adjustment : In case you adjust the Back Up Data No.158 (Threshold Level 9)

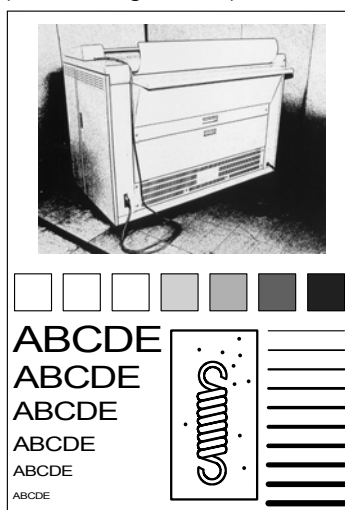
Original



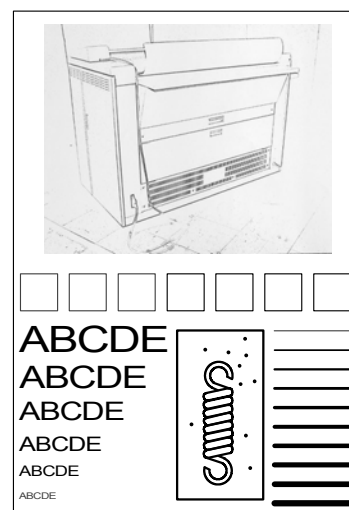
Copy  
(Setting value is decreased to -60.)



Copy before adjustment  
(Default setting value : 0)



Copy  
(Setting value is increased to 60.)



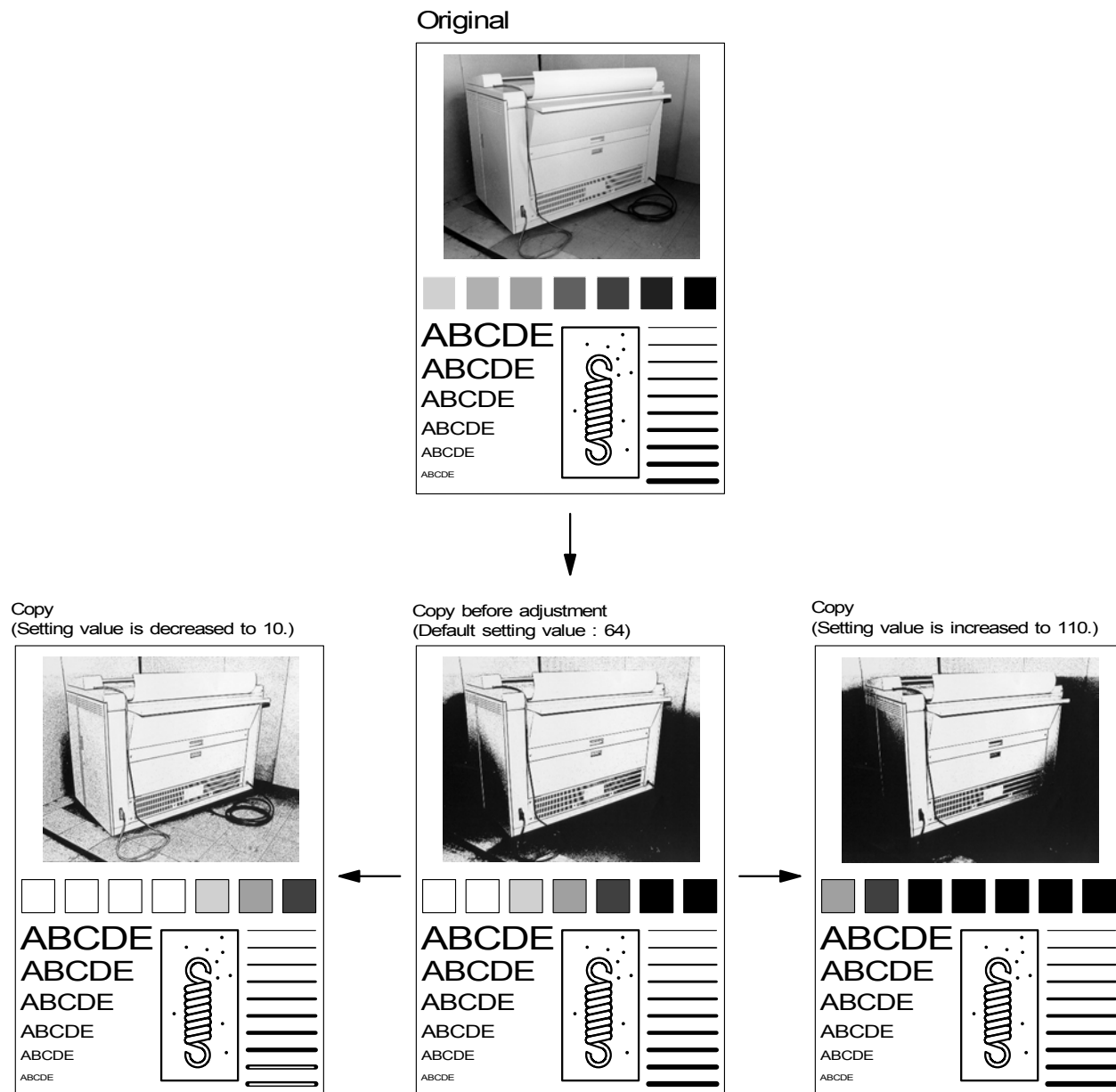
**No.169 Data of Threshold Level “Auto” applied to background image  
(Line/Photo Mode and Background ON)**

It is possible to change the Data of Threshold Level applied to the background image.  
This setting is effected when Line/Photo Mode is selected, Background Mode is ON and Threshold Level “Auto” is selected.

If you increase the setting value, wide solid images are copied because the Background Mode works weakly and these images are judged “necessary solid image”.

If you decrease it, on the contrary, wide solid images are not copied but are converted to “white” because the Background Mode works strongly and these images are judged “unnecessary light background”.

The adjustable range is from 0 to 255.



### **No.170 to 186 Data of Threshold Levels from 1 to 17 (Photo Mode)**

It is possible to change the Data of each Threshold Level.  
These settings are effected when the Photo Mode is selected.

If you increase the setting value, all images look darker than before.  
If you decrease it, on the contrary, they look lighter than before.  
The adjustable range is from 1 to 200.

These Back Up Data are corresponded to 17 Threshold Levels as follows.

Back Up Data No.	Corresponded to Threshold Level ;	Default value	Back Up Data No.	Corresponded to Threshold Level ;	Default value
170	1	10	179	10	47
171	2	13	180	11	54
172	3	16	181	12	61
173	4	20	182	13	68
174	5	24	183	14	76
175	6	28	184	15	84
176	7	32	185	16	92
177	8	36	186	17	100
178	9	40			

#### **NOTE**

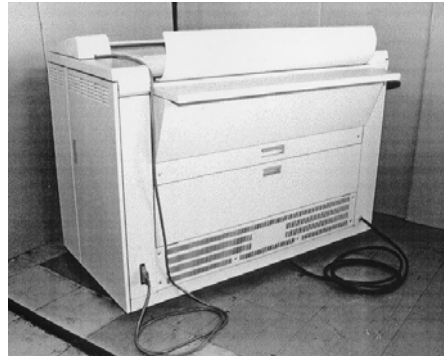
If you connect scanner with KIP8000 Series Printer (240mm/sec.), please change the setting values as follows at the time of installation.

Back Up Data No.	Corresponded Density Level	Required setting values to connect with KIP8000 Series Printer
170	1	40
171	2	43
172	3	46
173	4	50
174	5	54
175	6	58
176	7	62
177	8	66
178	9	70
179	10	77
180	11	84
181	12	91
182	13	98
183	14	106
184	15	114
185	16	122
186	17	130

Refer to the example of adjustment on the next page.

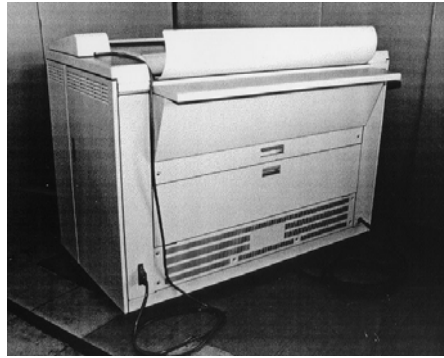
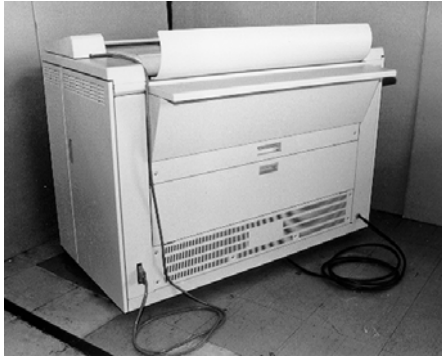
Example of adjustment : In case you adjust the Back Up Data No.178 (Threshold Level 9)

Copy  
(Setting value is decreased to 20.)

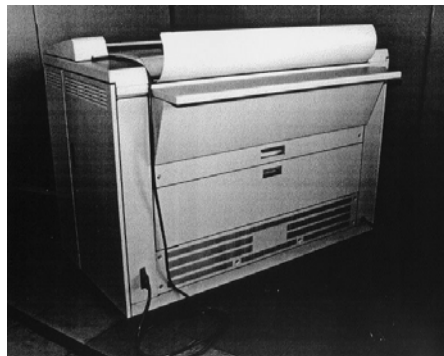


Copy before adjustment  
(Default setting value : 40)

Original



Copy  
(Setting value is increased to 60.)

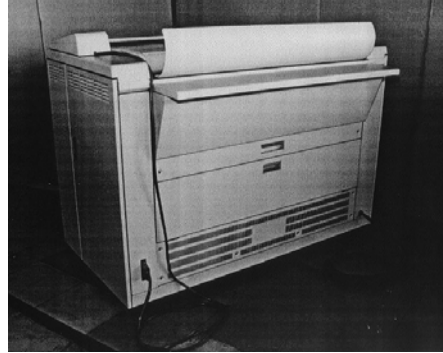


# **No.187 Brightness applied to photographic image (Photo Mode)**

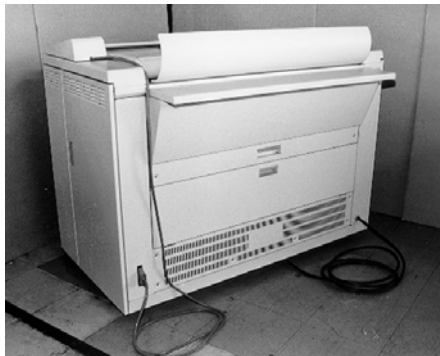
It is possible to change the brightness applied to the photographic image.  
This setting is effected when the Photo Mode is selected.

If you increase the setting value, the photographic image looks lighter than before.  
If you decrease it, on the contrary, it looks darker than before.  
The adjustable range is from 1 to 512.

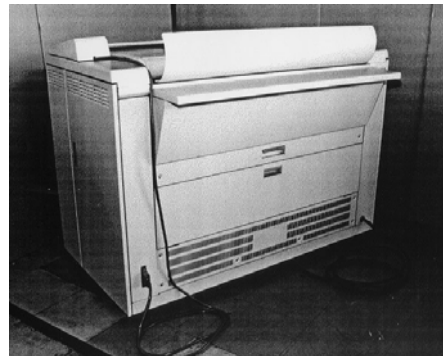
Copy  
(Setting value is decreased to 240.)



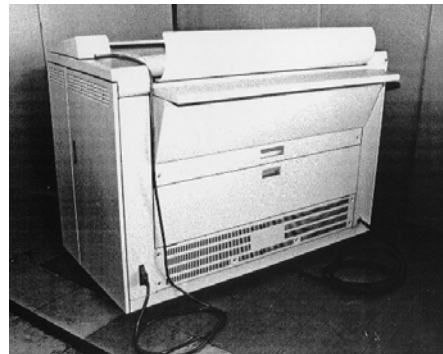
Original



Copy  
(Setting value is decreased to 270.)



Copy  
(Setting value is decreased to 300.)





#### **No.190 and 191    Base data for all Sharpness Levels in the Line Mode**

It is possible to adjust the base data for all Sharpness Levels.

No.190 effect on every Sharpness Level when Line Mode is selected and Background Mode is OFF.

No.191 effect on every Sharpness Level when Line Mode is selected and Background Mode is ON.

If you increase the setting value, the copy image becomes clearer than before whichever Sharpness Level you select in the Line Mode.

(The foggy background image becomes evident.)

If you decrease it, on the contrary, it becomes less clear than before.

(The foggy background image becomes not so evident.)

The adjustable range is from -1 to 1.

#### **No.195 and 196    Base data for all Sharpness Levels in the Line/Photo Mode**

It is possible to adjust the base data for all Sharpness Levels. No.195 effect on every Sharpness Level when Line/Photo Mode is selected and Background Mode is OFF.

No.196 effect on every Sharpness Level when Line/Photo Mode is selected and Background Mode is ON.

If you increase the setting value, the copy image becomes clearer than before whichever Sharpness Level you select in the Line/Photo Mode.

(The foggy background image becomes evident.)

If you decrease it, on the contrary, it becomes less clear than before.

(The foggy background image becomes not so evident.)

The adjustable range is from -1 to 1.

#### **No.200    Base data for all Sharpness Levels in the Photo Mode**

It is possible to adjust the base data for all Sharpness Levels.

This setting effect on every Sharpness Level when Photo Mode is selected.

If you increase the setting value, the copy image becomes clearer than before whichever Sharpness Level you select in the Photo Mode.

(The foggy background image becomes evident.)

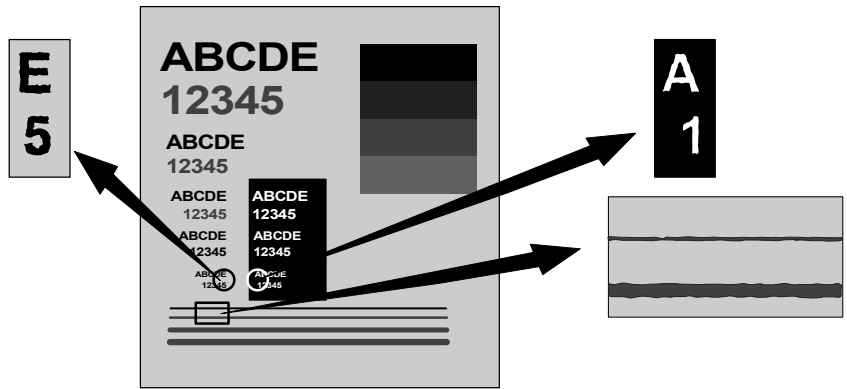
If you decrease it, on the contrary, it becomes less clear than before.

(The foggy background image becomes not so evident.)

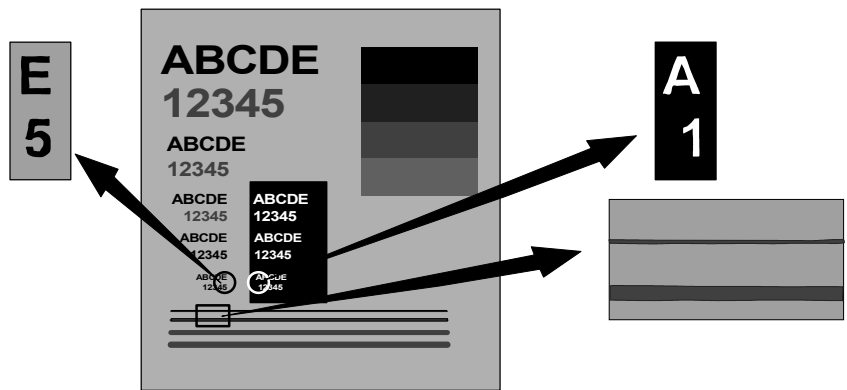
The adjustable range is from -1 to 1.

**The next page has the drawing to show results of copy when the above 190, 191, 195, 196 and 200 are changed.**

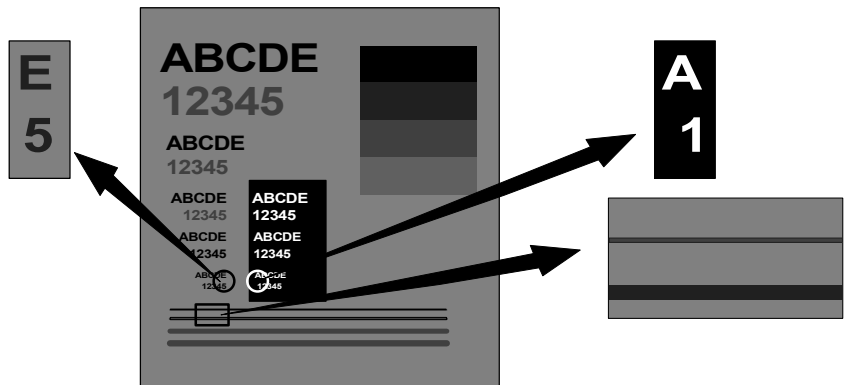
Setting value : -1



Setting value : 0



Setting value : 1



## **No.205 Size of speckle image deleted by Despeckle Mode (Line Mode)**

It is possible to specify the size of speckle image that is used when the Despeckle Mode takes a speckle image as “unnecessary speckle image”.

The setting value stands for “pixel by pixel”.

If the setting value is “3”, for example, the Despeckle Mode deletes the speckle image of which size is “3 pixels by 3 pixels” or smaller since it is judged “unnecessary speckle image”. (If it is larger than “3 pixels by 3 pixels”, for example, it is not deleted.)

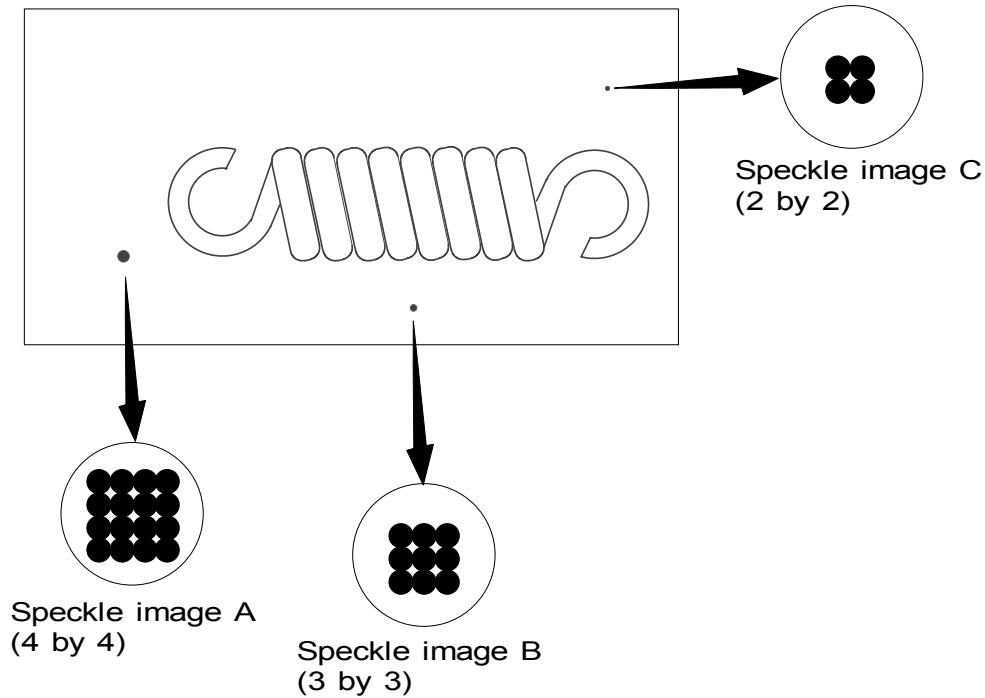
The range of setting is from 1 to 6.

(Examples)

When the setting value is 2, only the speckle image C is deleted.

When the setting value is 3, both speckle images B and C are deleted.

When the setting value is 4, all speckle images are deleted.



## **No.210 to 214 LED Strobe Time (KIP2050)**

It is possible to adjust each Density Level by changing the LED Strobe Time.

Adjust No.210 to 214 when the scanner is KIP2050 (50mm/sec.).

The setting unit is 1 microsecond.

If you increase the setting value, the copy image becomes darker than before.

Back Up Data No.	Corresponded Density Level	Default setting value
210	1	10
211	2	15
212	3	20
213	4	25
214	5	30

### **NOTE**

If you connect the KIP2000 Series Printer (50mm/sec.) with the KIP2050, it is necessary to change the setting values as follows.

Back Up Data No.	Corresponded Density Level	Default setting value
210	1	<b>25</b>
211	2	<b>30</b>
212	3	<b>35</b>
213	4	<b>40</b>
214	5	<b>45</b>

Drawings on the page 7-65 show how the print result varies if you change the setting value.

### **No.215 to 219 LED Strobe Time (KIP2080)**

It is possible to adjust each Density Level by changing the LED Strobe Time.  
Adjust No.215 to 219 when the scanner is KIP2080 (80mm/sec.).  
The way of setting is same with the former No.210 to 214.

Back Up Data No.	Corresponded Density Level	Default setting value
215	1	5
216	2	10
217	3	15
218	4	20
219	5	25

#### **NOTE**

- (1) If you connect the KIP2000 Series Printer (50mm/sec.) with the KIP2080, it is necessary to change the setting values as follows.

Back Up Data No.	Corresponded Density Level	Default setting value
215	1	<b>25</b>
216	2	<b>30</b>
217	3	<b>35</b>
218	4	<b>40</b>
219	5	<b>45</b>

- (2) If you connect the KIP8000 Printer (240mm/sec.) with the KIP2080, it is necessary to change the setting values as follows.

Back Up Data No.	Corresponded Density Level	Default setting value
215	1	<b>10</b>
216	2	<b>15</b>
217	3	<b>20</b>
218	4	<b>25</b>
219	5	<b>30</b>

Drawings on the page 7-65 show how the print result varies if you change the setting value.

## **No.220 to 224 LED Strobe Time (KIP2120)**

It is possible to adjust each Density Level by changing the LED Strobe Time.

Adjust No.220 to 224 when the scanner is KIP2120 (120mm/sec.).

The way of setting is same with the former No.210 to 214.

Back Up Data No.	Corresponded Density Level	Default setting value
220	1	5
221	2	10
222	3	15
223	4	20
224	5	25

### **NOTE**

- (1) If you connect the KIP2000 Series Printer (50mm/sec.) with the KIP2120, it is necessary to change the setting values as follows.

Back Up Data No.	Corresponded Density Level	Default setting value
220	1	<b>25</b>
221	2	<b>30</b>
222	3	<b>35</b>
223	4	<b>40</b>
224	5	<b>45</b>

- (2) If you connect the KIP8000 Printer (240mm/sec.) with the KIP2120, it is necessary to change the setting values as follows.

Back Up Data No.	Corresponded Density Level	Default setting value
220	1	<b>10</b>
221	2	<b>15</b>
222	3	<b>20</b>
223	4	<b>25</b>
224	5	<b>30</b>

Drawings on the page 7-65 show how the print result varies if you change the setting value.

## **No.225 to 229 LED Strobe Time (KIP2160)**

It is possible to adjust each Density Level by changing the LED Strobe Time.  
Adjust No.225 to 229 when the scanner is KIP2160 (160mm/sec.).  
The way of setting is same with the former No.210 to 214.

Back Up Data No.	Corresponded Density Level	Default setting value
225	1	5
226	2	10
227	3	15
228	4	20
229	5	25

### **NOTE**

- (1) If you connect the KIP2000 Series Printer (50mm/sec.) with the KIP2160, it is necessary to change the setting values as follows.

Back Up Data No.	Corresponded Density Level	Default setting value
225	1	<b>25</b>
226	2	<b>30</b>
227	3	<b>35</b>
228	4	<b>40</b>
229	5	<b>45</b>

- (2) If you connect the KIP8000 Printer (240mm/sec.) with the KIP2160, it is necessary to change the setting values as follows.

Back Up Data No.	Corresponded Density Level	Default setting value
225	1	<b>10</b>
226	2	<b>15</b>
227	3	<b>20</b>
228	4	<b>25</b>
229	5	<b>30</b>

Drawings on the page 7-65 show how the print result varies if you change the setting value.

### **No.230 to 234 LED Strobe Time (KIP2600 JPN model)**

It is possible to adjust each Density Level by changing the LED Strobe Time.  
Adjust No.230 to 234 when the scanner is KIP2600 ( JPN Model ).  
The way of setting is same with the former No.210 to 214.

Back Up Data No.	Corresponded Density Level	Default setting value
230	1	5
231	2	10
232	3	15
233	4	20
234	5	25

#### **NOTE**

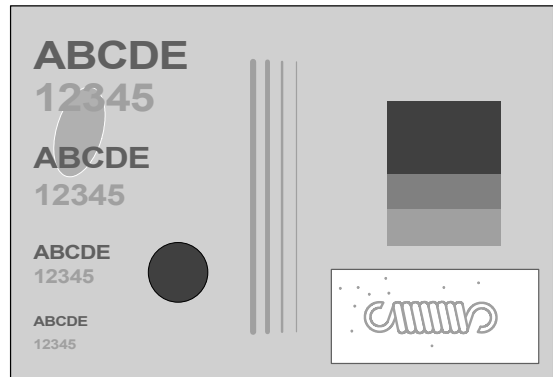
If you connect the KIP2020E-2 (80mm/sec.) with the KIP2600, it is necessary to change the setting values as follows.

Back Up Data No.	Corresponded Density Level	Default setting value
230	1	<b>6</b>
231	2	<b>8</b>
232	3	<b>10</b>
233	4	<b>12</b>
234	5	<b>14</b>

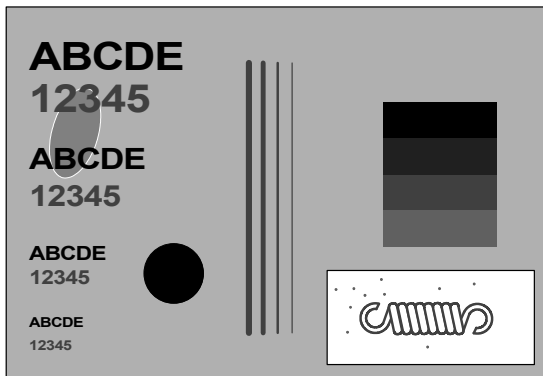
Drawings on the page 7-65 show how the print result varies if you change the setting value.



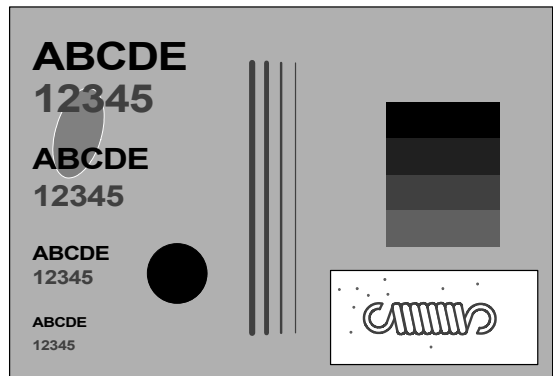
Copy  
(Setting value is decreased.)



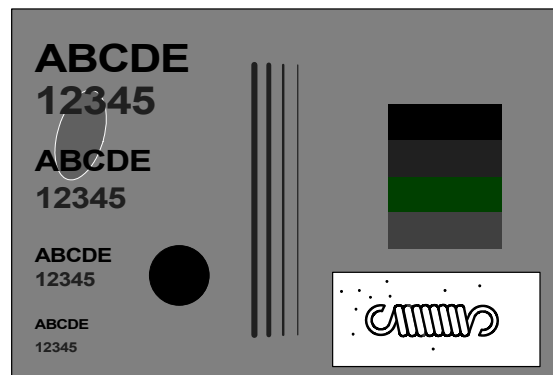
Original



Copy before adjustment



Copy  
(Setting value is increased.)



## **No.290 Data compress / uncompress (In the Copy Mode)**

It is possible to decide the scanned image data is compressed or uncompressed when it is taken into the memory in the Copy Mode.

**Select “Always uncompress” or “Compress only in Set Copy (Sort)” when the scanner is connected with KIP8000 Printer (240mm/sec.).**

Select “Always compress” when the other kind of printer is connected.

Setting value	Contents
0	<b>Always compress</b> Scan data is compressed always. (Select when KIP2000 Series Printer, KIP1230E, KIP2720E, KIP3620E or KIP9010 is connected.)
1	<b>Always uncompress</b> Scan data is uncompressed always. (Select only when KIP8000 Printer is connected.)
2	<b>Compress only in Set Copy (Sort)</b> Scan data is compressed only you make a Set Copy with Sort Mode. In every other case it is uncompressed. (Select only when KIP8000 Printer is connected.)

Refer to page 7-67 as for [Always compressed].

Refer to page 7-69 as for [Always uncompressed].

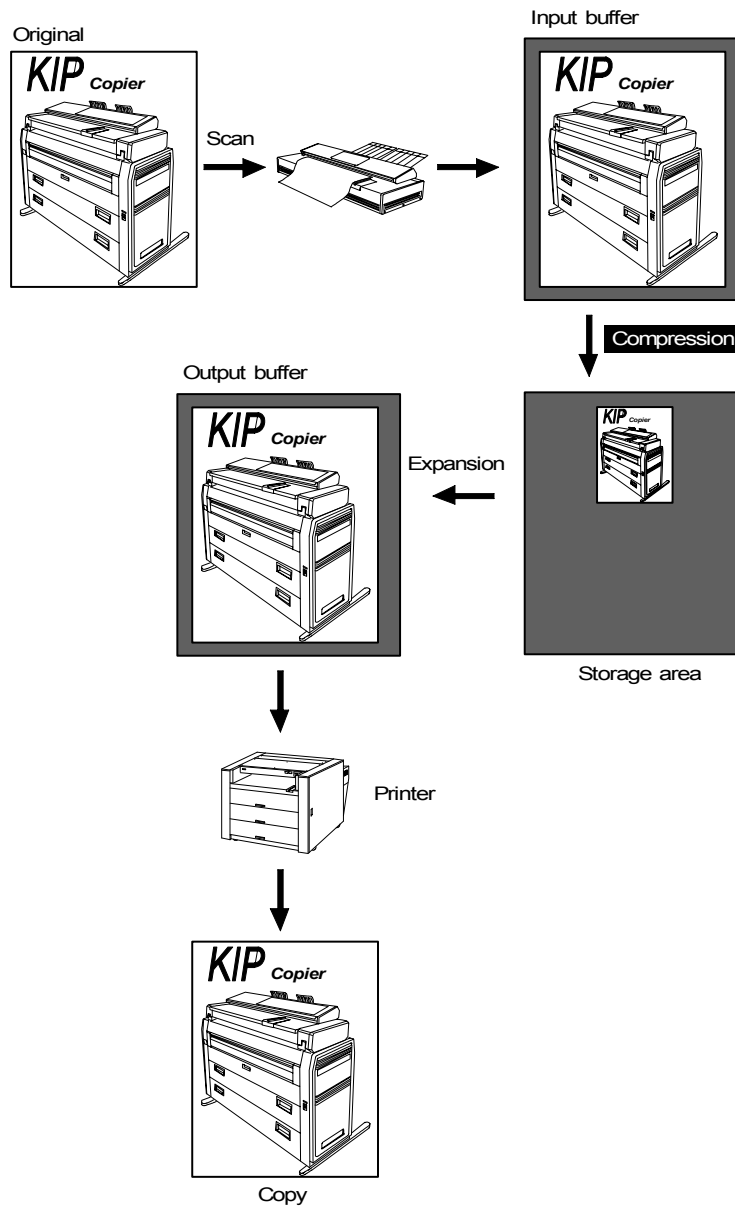
Refer to page 7-71 as for [Compress only in Set Copy (Sort)].

**[Always compress] (Setting value is 0)**

Image data is compressed when it is sent from the input buffer to the storage area.  
Then it is expanded when it is sent from the storage area to the output buffer.  
It is sent from the output buffer to the printer and copy is printed out finally.

**NOTE : You may have an output error if you select this “Always compress” (setting value 0)  
when KIP8000 Printer (240mm/sec.) is connected.**

**Please refer to NOTE on the page 7-68 to understand what will happen in this case.**

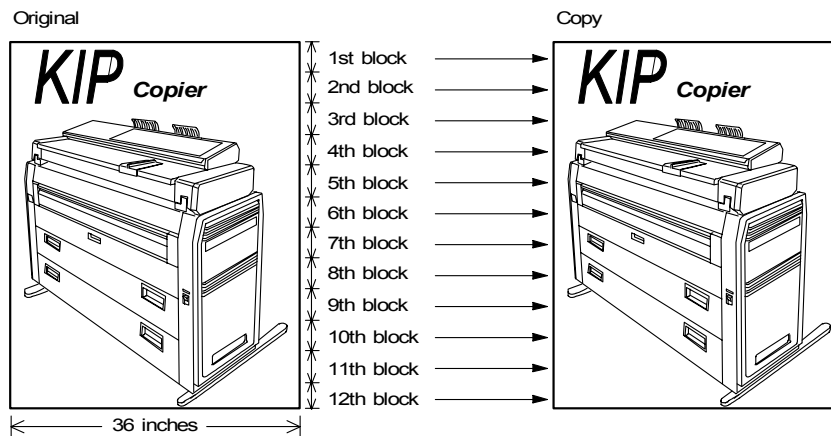


## ! NOTE

If you copy 36" wide original with KIP8000 Printer, the image should be uncompressed. Please select "Always uncompress" (Setting value 1) or "Compress only in Set Copy (Sort)" (Setting value 2).

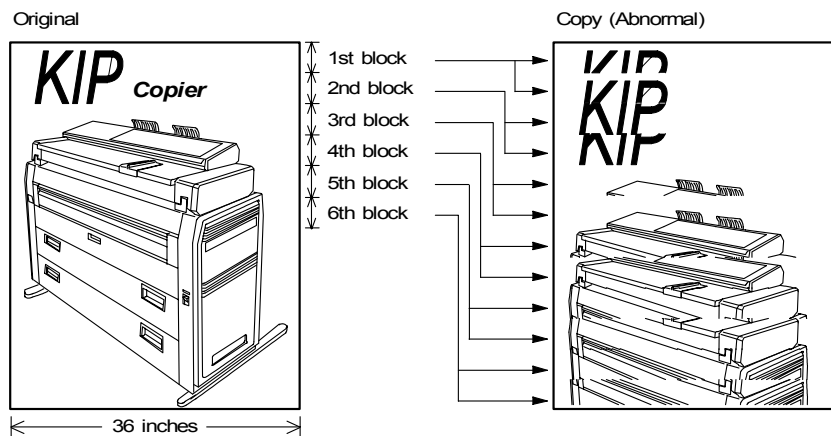
When 36" wide image is compressed, scanner is unable to expand the data within a designated time because print speed of KIP8000 is so fast. As the result of it, each image block will be printed twice like the following example of abnormal copy. (Length of each image block is about 50mm.)

### Proper copy



### Abnormal copy

(In case 36" wide image is compressed then printed out from KIP8000)



If the original is always 34" (A0) or narrower, this kind of problem will not occur even if it is printed out from KIP8000. So you can choose "Always compress" also. But we recommend that you choose "Always uncompress" or "Compress only in Set Copy (Sort)" when KIP8000 is connected.

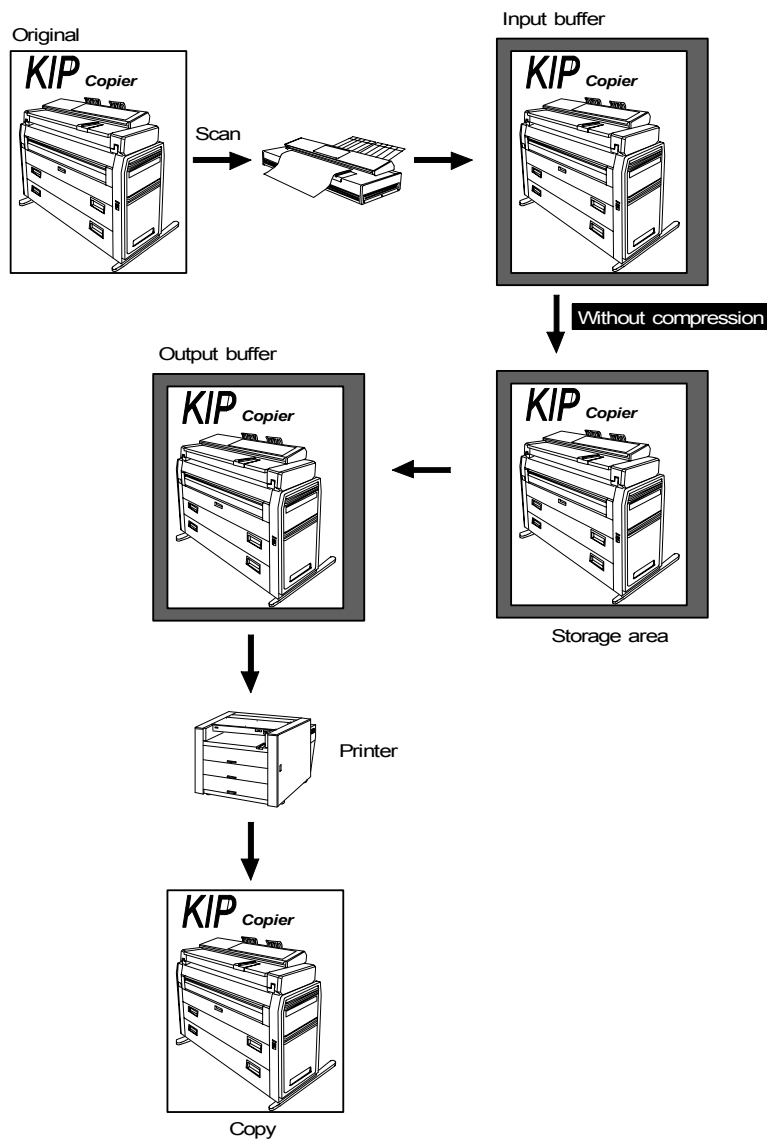
**[Always uncompress] (Setting value is 1)**

It is recommended to select this setting when KIP8000 Printer is connected.

Image data is not compressed when it is sent from the input buffer to the storage area.  
Then it is sent from the storage area to the output buffer.  
It is sent from the output buffer to the printer and copy is printed out finally.

Since the image data is not compressed, it is not necessary to expand it.  
As the result you can avoid the output error that happens between scanner and KIP8000 Printer.  
(Refer to the page 7-68 for the detail of output error.)

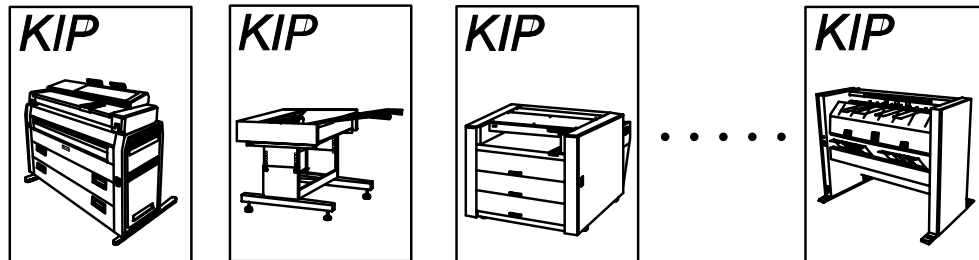
**NOTE : You will have some restrictions if you select this setting.  
Please understand those restrictions making reference to the page 7-70.**



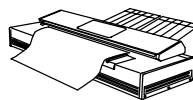
## ! NOTES

- (1) Since uncompressed image data is very large, you must expand the memory.  
You need 576MB (64MB x 1 and 256MB x 2) at least to copy 36" x 16m original.  
Refer to "B. Memory expansion when connected with KIP8000 Printer" on the page 2-12.
- (2) Image data are stored in the storage area without being compressed even in the Set Copy Mode.  
Since each image is large, the storage area will be soon occupied with image data fully and "Memory Full" will occur even if you have not scanned so many originals yet.  
(When memory is 576MB and the size of all originals are 36" x 48", 16 sheets of original is the maximum number available to store.)  
If you need to store more images, select "Compress only in Set Copy (Sort)" making reference to the page 7-71.

Set Copy Originals



↓ Scan

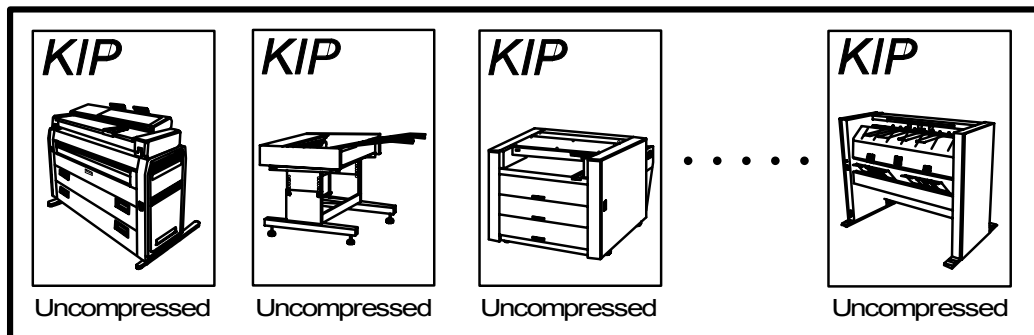


↓

Input buffer

↓

Storage area



**[Compress only in Set Copy (Sort)] (Setting value is 2)**

Image data is compressed only when you take Set Copy with Sort Mode.  
And it is not compressed in the other every case.

When KIP8000 Printer is connected, it is recommended to select this setting because :

1. You can avoid the output error between scanner and KIP8000.  
(Refer to the page 7-68 for the detail of output error.)
2. It is possible to make a Set Copy (Sort) with larger number of originals.

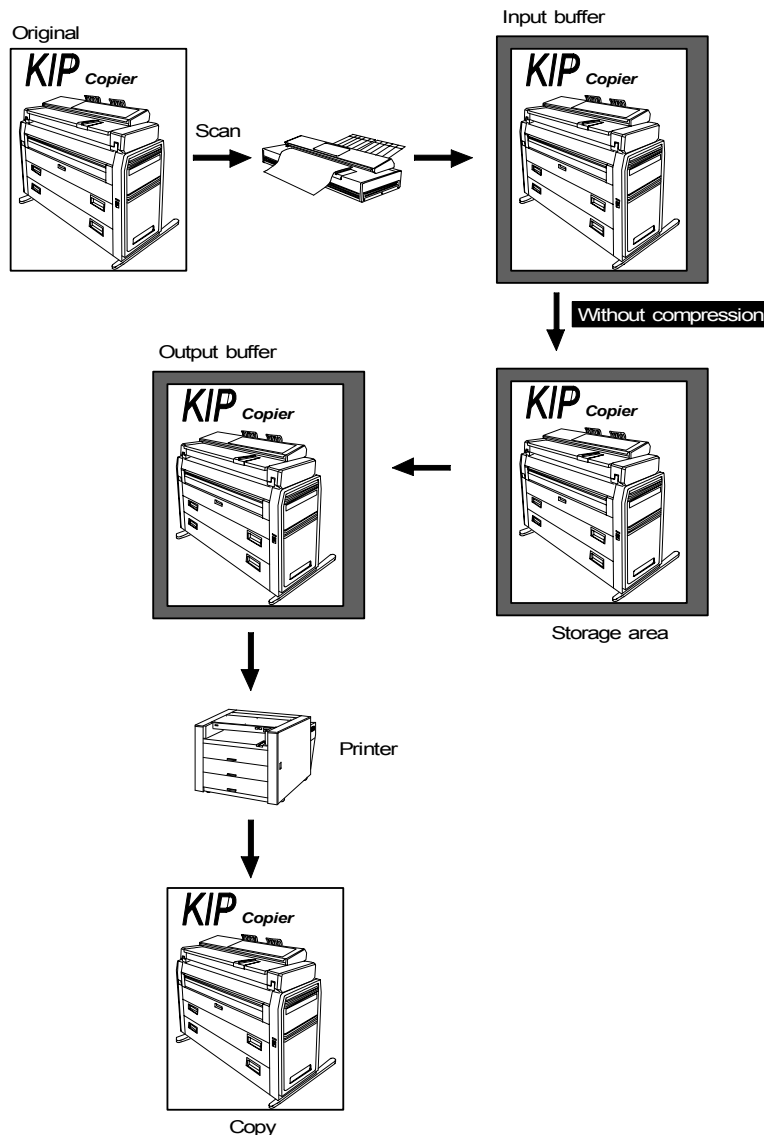
**NOTE : You will have some restrictions if you select this setting.**

**Please understand those restrictions making reference to the page 7-76.**

In normal copy (all cases except for the Set Copy with Sort Mode)

Image data is not compressed when it is sent from the input buffer to the storage area.  
Then it is sent from the storage area to the output buffer.  
It is sent from the output buffer to the printer and copy is printed out finally.

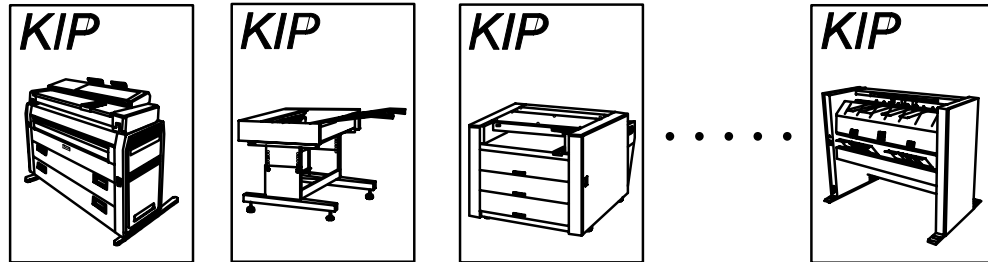
Since the image data is not compressed, it is not necessary to expand it.  
As the result you can avoid the output error that happens between scanner and KIP8000 Printer.



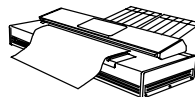
## In the Set Copy Mode (Sort)

- 1) Each image data is compressed when it is sent from the input buffer to the storage area.  
Since the size of image data is small after compression, this setting can store larger number of image data in the storage area than "Always uncompressed".  
(Please refer to the drawing on the page 7-70 and compare.)

Set Copy Originals



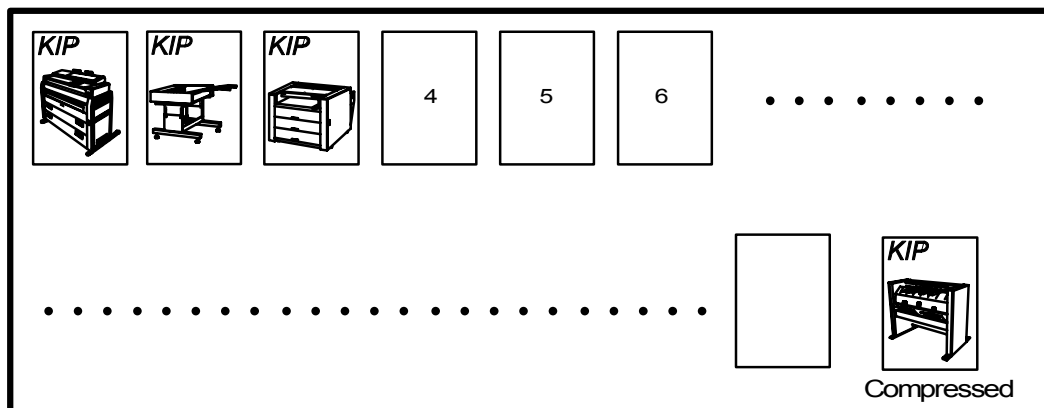
↓ Scan



Input buffer

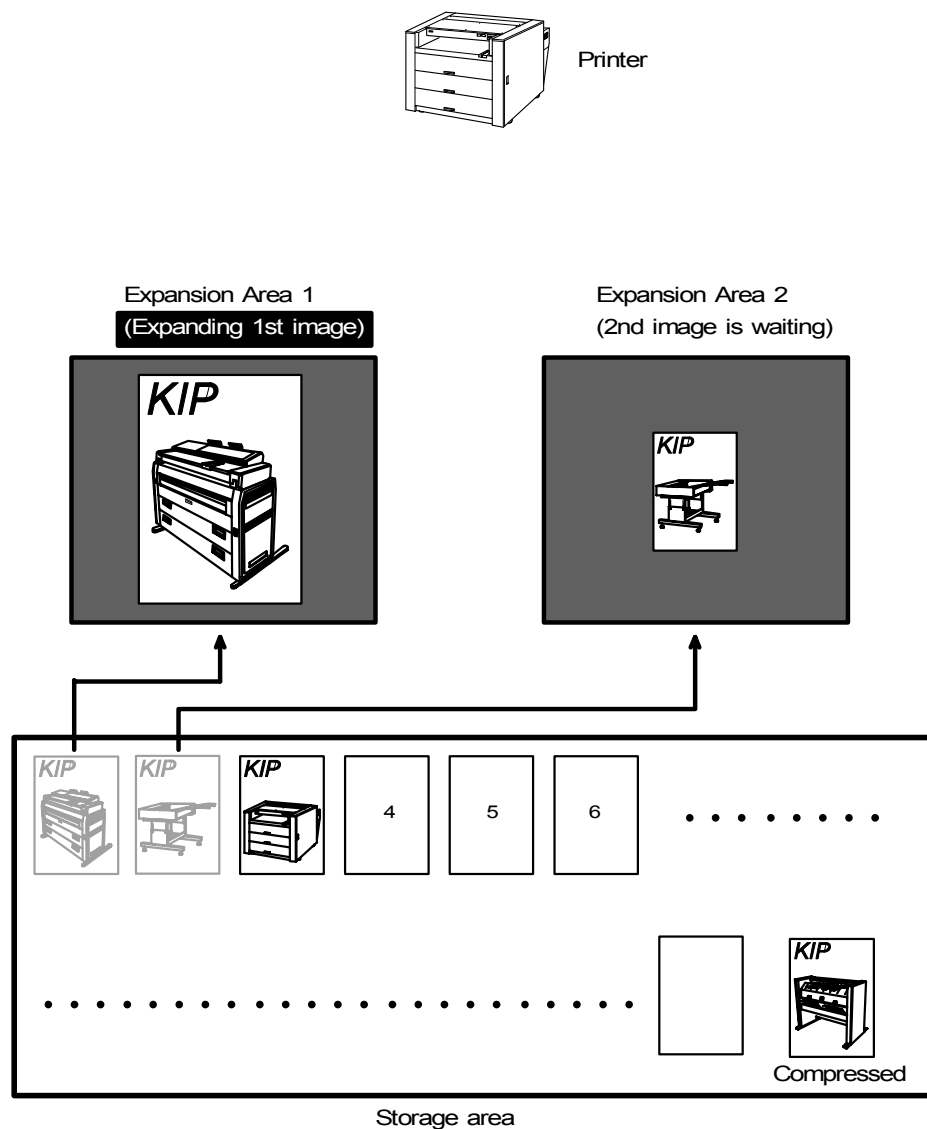


Storage area

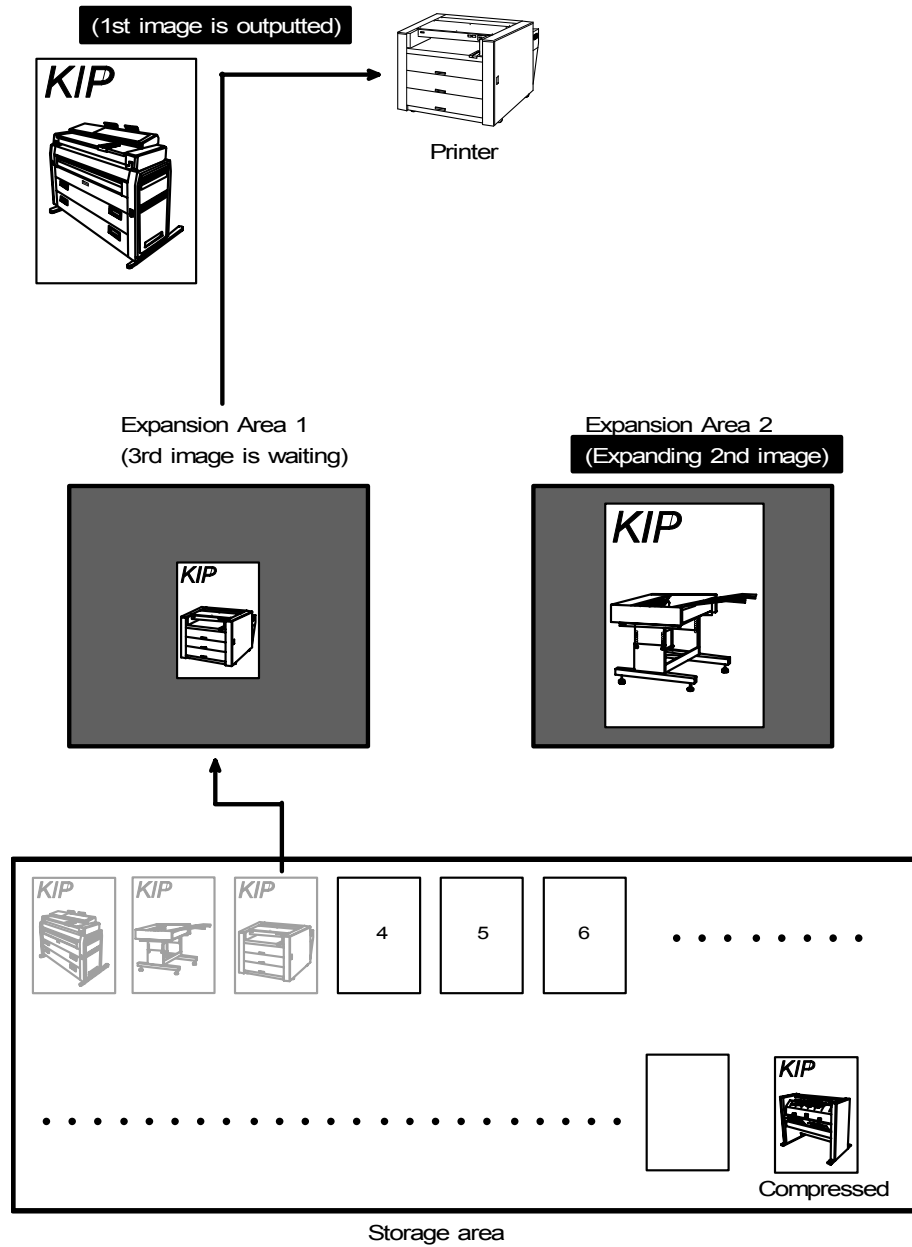




- 2) Scanner will keep 2 areas in the memory that are used for data expansion.  
(Expansion areas 1 and 2 in the following drawing.)  
When you start printing the Set Copy Job, the 1st image is sent to the expansion area 1 and is expanded.  
Also, the 2nd image is sent to the expansion area 2 and waits that expansion of 1st image is completed.

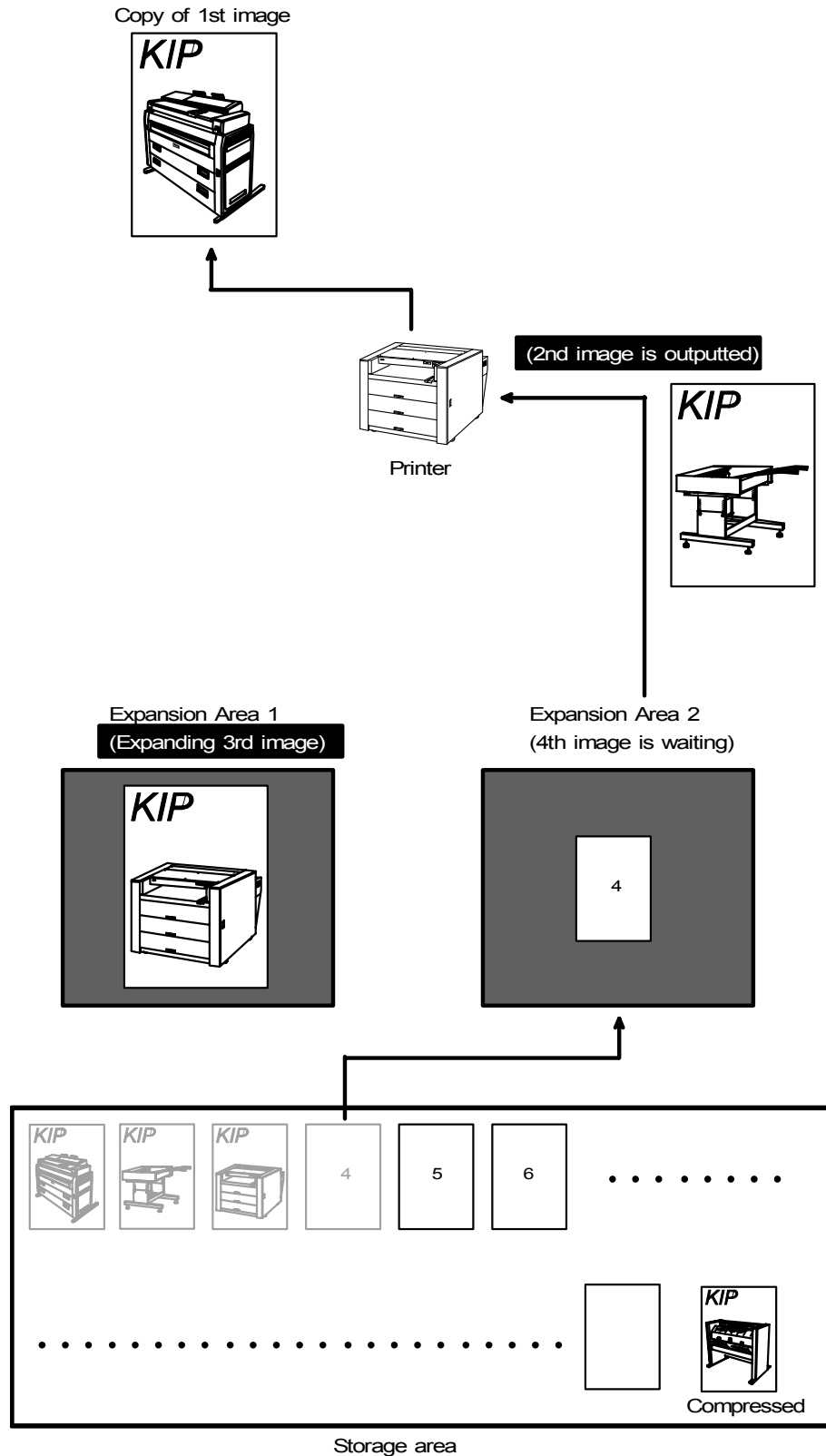


- 3) Expansion area 1 starts outputting the 1st image to the printer when it has finished to expand. When the expansion area 1 is outputting, expansion area 2 starts expanding the 2nd image.



- 4) Expansion area 2 starts outputting the 2nd image to the printer when it has finished to expand. When the expansion area 2 is outputting, expansion area 1 starts expanding the 3rd image. Printer will print out the copy of 1st image.

Thus, expansion areas 1 and 2 will make data expansion and output alternately. The reason scanner keeps 2 expansion areas is not to have any interval between outputs. There is no loss of time because either expansion area is always outputting the print data to the printer.



## NOTE

- (1) Since uncompressed image data is very large, you must expand the memory.  
You need 576MB (64MB x 1 and 256MB x 2) at least to copy 36" x 16m original.  
Refer to "B. Memory expansion when connected with KIP8000 Printer" on the page 2-12.
- (2) When you will make Set Copy with Layout Mode, be careful that the image data is not compressed.  
It means large image data are stored in the storage area.  
The storage area will be soon occupied with image data fully and "Memory Full" will occur even if you have not scanned so many originals yet.  
(When memory is 576MB and the size of all originals are 36" x 48", 16 sheets of original is the maximum number available to store.)
- (3) If you would like to include a long original in the Set Copy Job, you have to change the setting of Backup Data No.291.  
Backup Data No.291 can specify how long inches of original is available to scan in the Set Copy with Sort Mode, which is effective only when you select "Compress only in Set Copy (Sort)" in the Backup Data No.290.  
If you select "60" in the Backup Data No.291, for example, it is possible to scan up to 60 inches long original.  
But if it is longer than 60 inches, scanner will indicate "Memory Full" in the middle of scanning.  
Refer to [Maximum original length available to scan in Set Copy (Sort)] on the page 7-77.

## **No.291 Maximum original length available to scan in Set Copy (Sort)**

It is possible to specify how long original is available to include in the Set Copy Job.

**This setting is effective only when you select [Compress only in Set Copy (Sort)] in the Backup Data No.290 and take a Set Copy with Sort Mode.**

If you try to scan a longer original than this setting, scanner will indicate "Memory Full" error.

The setting unit is "inch", and the setting range is from 48 to 630 (About 16m).

Default setting value is "56".

### **! NOTE**

Please restart the scanner after changing the setting value. Otherwise new setting is not effected.

### [Example]

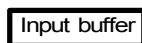
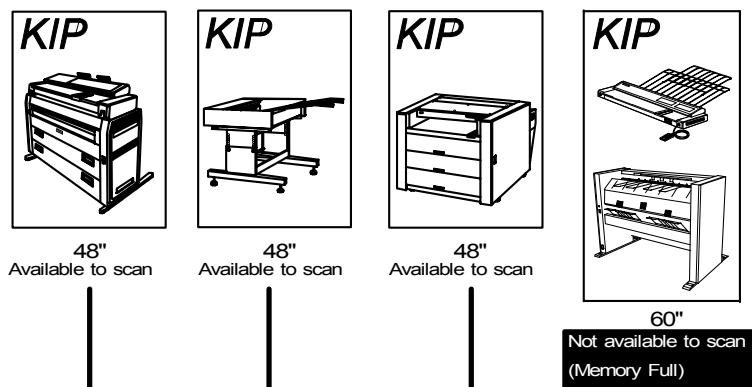
Setting value of No.291 is "56".

You have 4 originals and one of them is 60 inches long.

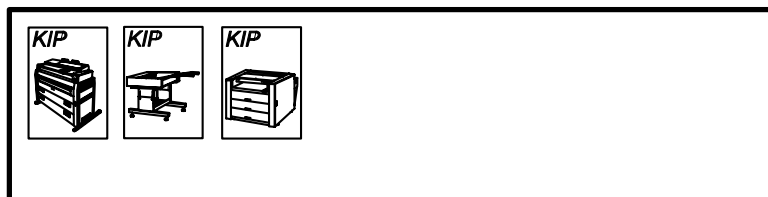
If you take Set Copy in Sort Mode with these originals, it is impossible to scan this long original but "Memory Full" error is indicated.

You have to exclude this long one from the set copy.

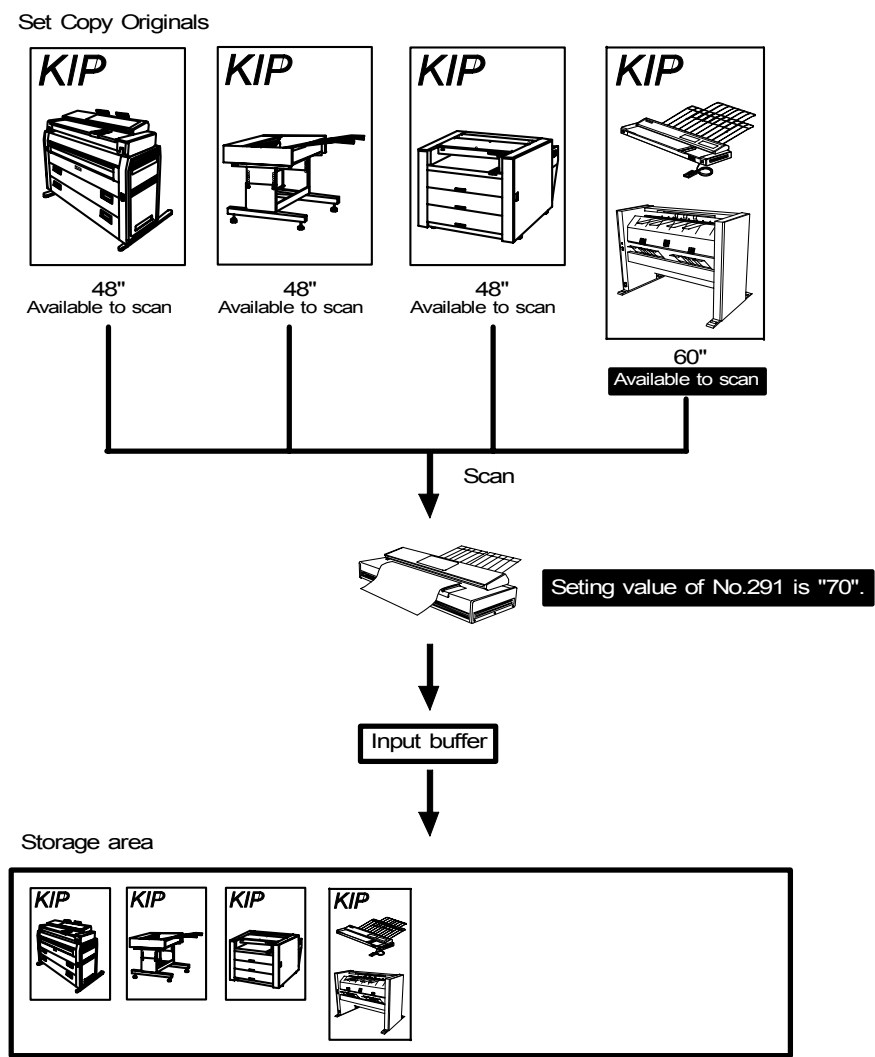
Set Copy Originals



Storage area



If you increase the setting value of No.291, you increase to “70” for example, even 60 inches long original can be scanned.  
Thus, change the maximum length according to customer’s request.

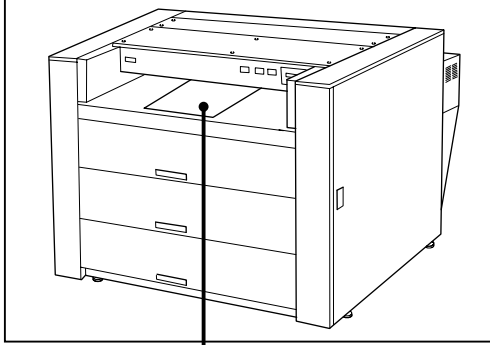
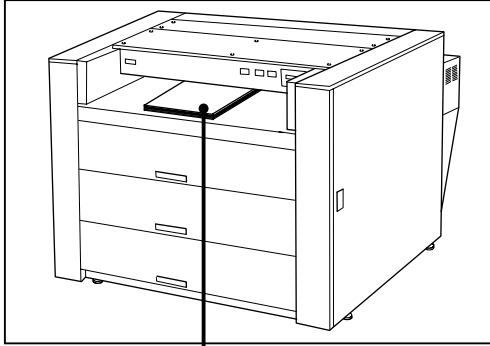


## **No.292 Availability to set multiple number of cut sheet media onto bypass feeder**

It becomes available to set a multiple number of cut sheet media onto the Bypass Feeder.

**Only KIP8000 Printer is corresponded to the multiple feeding.**

When you will copy one original on cut sheet media with multiple number of copy count, we recommend that you select setting value "1" (Available) because you do not have to set the cut sheet media for every copy one by one.

Setting value	Contents
0	<p>It is not available to set multiple number of cut sheet media onto the Bypass Feeder.</p>  <p>Only one sheet can be set.</p>
1	<p>It is available to set multiple number of cut sheet media.</p>  <p>Multiple sheets can be set.</p>

#### **No.293 Speed of the connected 600dpi printer**

If the 600dpi printer as KIP2720E-2 or KIP6000 is connected with the KIP2600, input its transportation speed.

The setting unit is 1mm/second, and the setting range is 0 to 1000.

If the KIP2720E-2 (80mm/sec.) is connected with the KIP2600, input "80".

If the KIP6000 (100mm/sec.) is connected with the KIP2600, input "100".

Default value is "80".

#### **NOTE**

Input a correct value. Otherwise the Direct Print can not be performed properly.

#### **No.294 Start up mode selection (Copy Mode / Scan Mode)**

It is possible to make the scanner start up in either Copy Mode or Scan Mode right after turning on. Selectable setting values are "0" or "1".

Select "1" if you make only "scan to file" without connecting any printer.

Setting value	Contents
0 (Default)	Scanner starts up in the Copy Mode if you turn it on. (It is possible to enter the Scan Mode and make "scan to file".)
1	Scanner starts up in the Scan Mode. (Only "scan to file" is available. It is impossible to enter the Copy Mode.)

#### **NOTE**

It is necessary to indicate the **Basic Screen of Copy Mode** to enter the Service Mode. In case you select the setting value "1" (Scan Mode only is available), therefore, it is required to make a special operation to indicate the Basic Screen of Copy Mode.

**Press and hold both Start Key and [4] Key, and then switch on the scanner.**

Scanner will be started up in the Copy Mode compulsively.

Then, enter the Service Mode in the usual way.



### **No.295 Resolution in the Scan Mode (Effective when the magnification is not 100%)**

Scanning resolution is fixed and becomes unchangeable if you specify some magnification other than 100% on the KIP Scan Client.

It is possible to fix the resolution at either 400dpi or 600dpi in this case, which can be decided in this No.295.

Selectable setting values are "0" or "1".

Setting value	Contents
0	Resolution is fixed at 400dpi when the magnification is not at 100% on the KIP Scan Client.
1 (Default)	Resolution is fixed at 600dpi when the magnification is not at 100% on the KIP Scan Client.

#### **! NOTE**

This No.295 is useful when you select the setting value "4" (KIP2600) on the following No.300. If you select other value on the No.300, the resolution is always 400dpi regardless of the value specified in No.295.

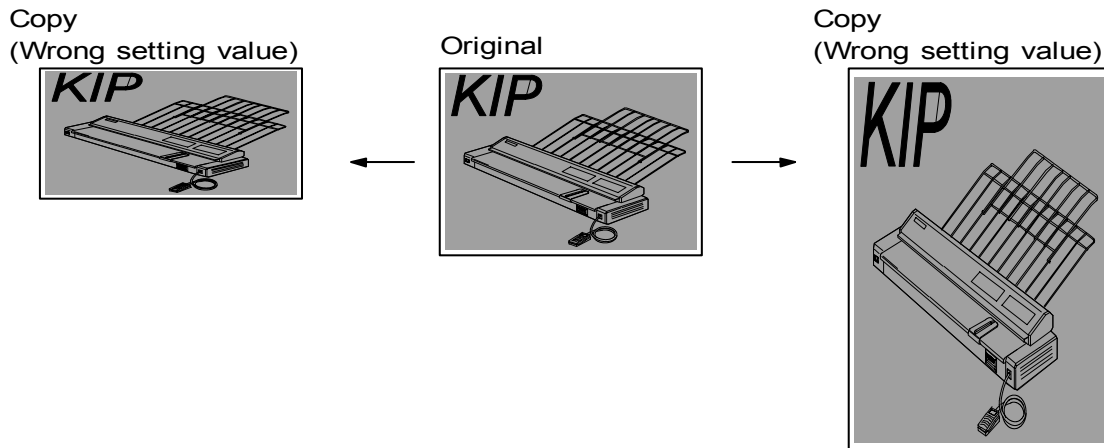
### **No.300 Kind of scanner**

You have to decide the kind of scanner.

Make sure to select the setting value specified to each scanner.

Setting value	Kind of scanner
0	KIP2050
1	KIP2080
2	KIP2120
3	KIP2160
4	KIP2600

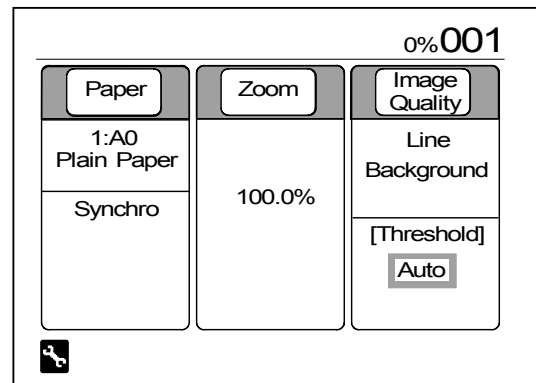
**If you choose the wrong setting value, the copy length becomes abnormal as follows because the speed is not proper.**



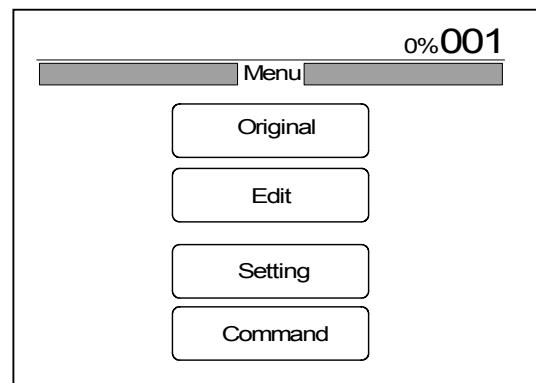
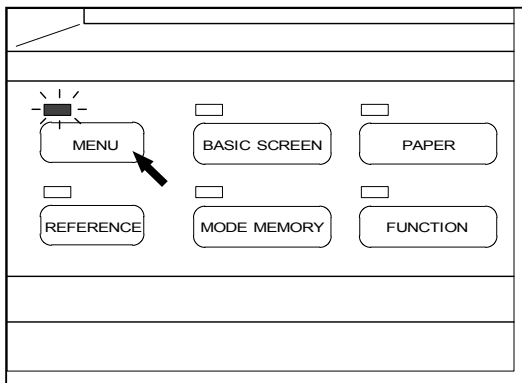
## 7.5 Test Print

[Operation]

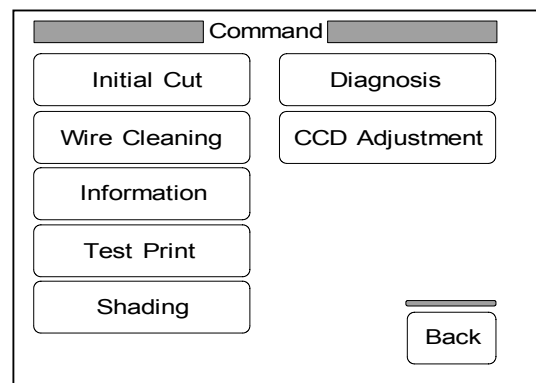
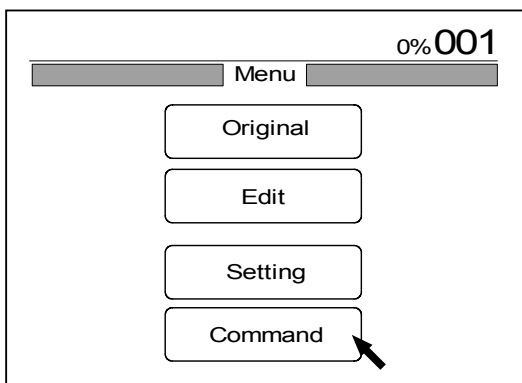
- 1) Enter the Service Mode.



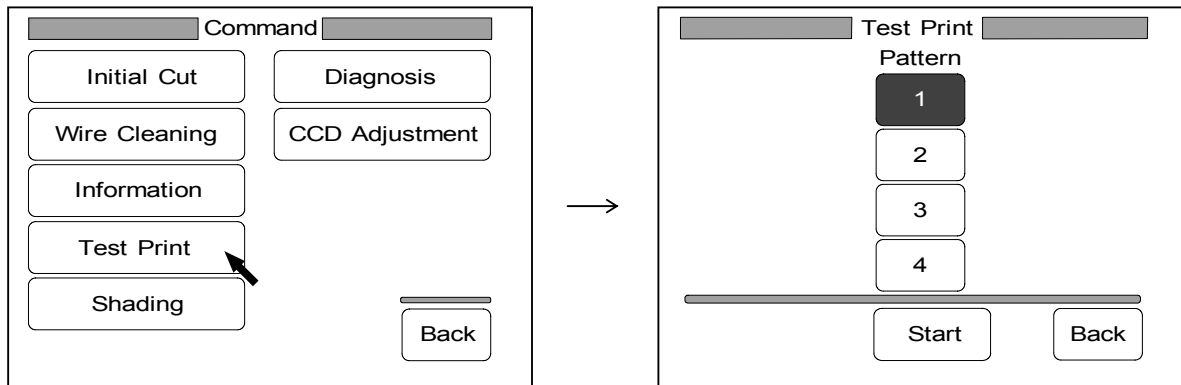
- 2) Push the Menu Key to indicate the Menu Screen on the LCD.



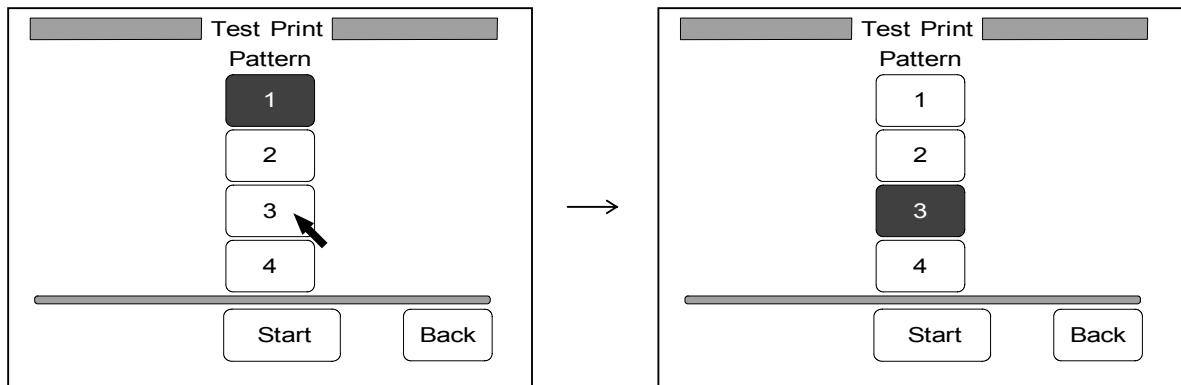
- 3) Press "Command" to indicate the Command Screen on the LCD.



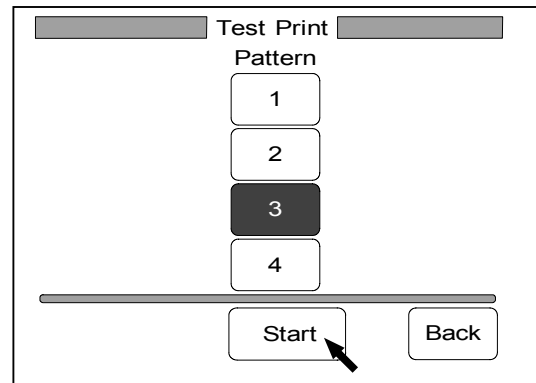
4) Press "Test Print" to indicate the Test Print Screen on the LCD.



5) Press any of Test Patterns from 1 to 4.



6) Press "Start".  
The selected Test Pattern is printed out.



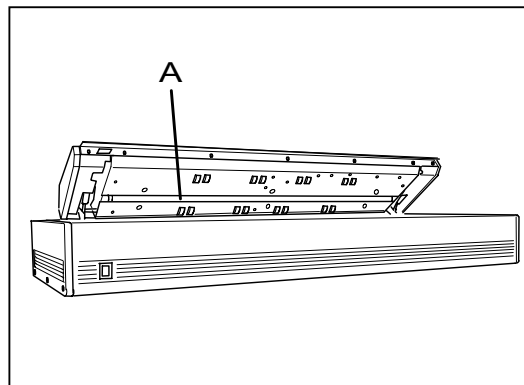
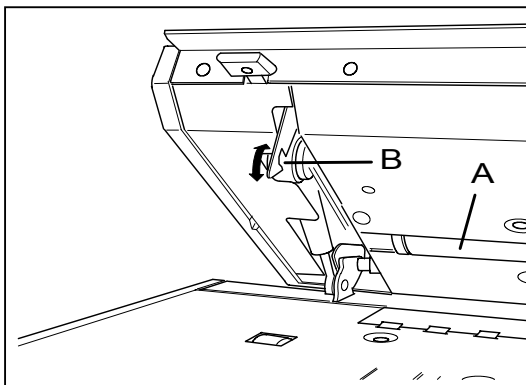
## 7.6 Shading Compensation Mode

Make sure to do Shading Compensation in the following cases.

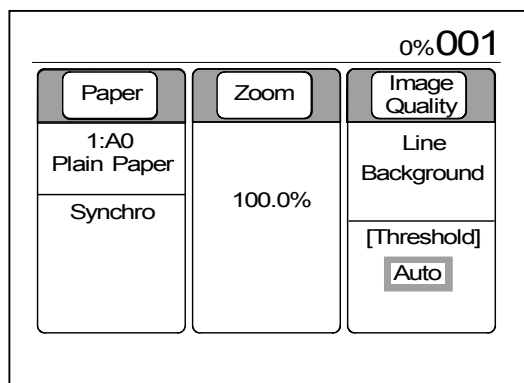
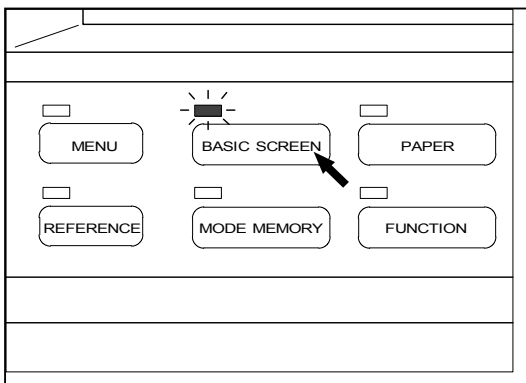
- (1) After replacing the CPU PCB with the new one
- (2) After replacing the CCD PCB with the new one
- (3) After replacing the Lamp with the new one
- (4) After replacing the Lamp Driver PCB with the new one
- (5) When some abnormal image is printed out

[Operation]

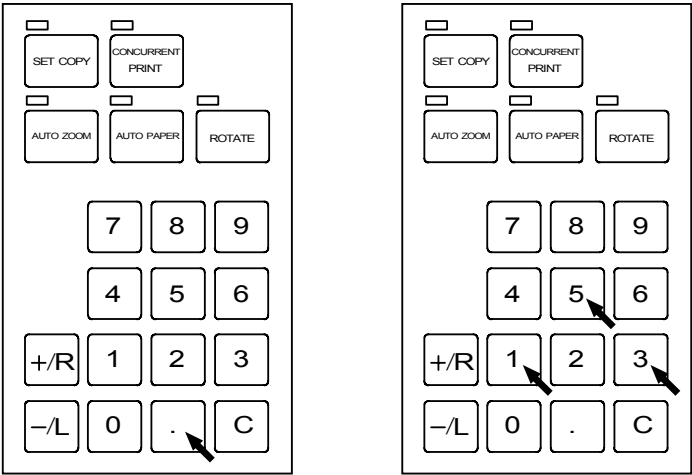
- 1) Wipe all the surface of White Roller (A) rotating the Roller (B).



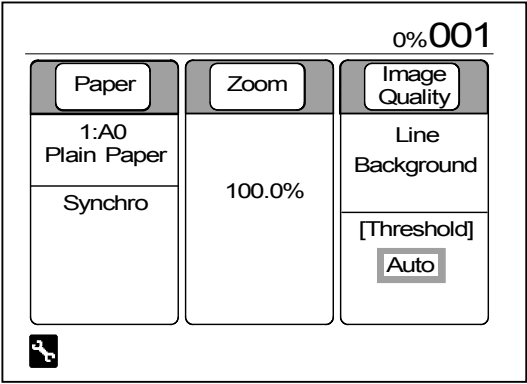
- 2) Push the Basic Screen Key to indicate the Basic Screen on the LCD.



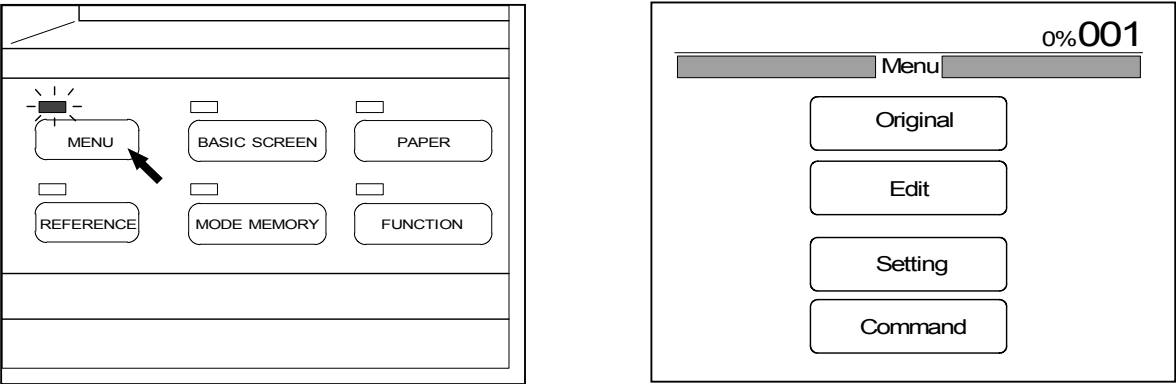
3) Press and hold the [ . ] Key, and then push keys in the order as [1], [3] and [5] to enter the Service Mode.



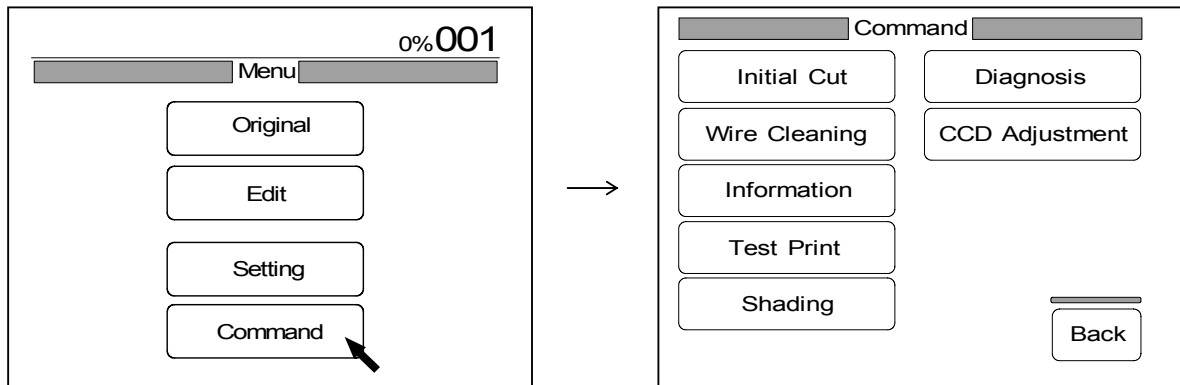
4) A mark of wrench is indicated on the LCD if you enter the Service Mode.



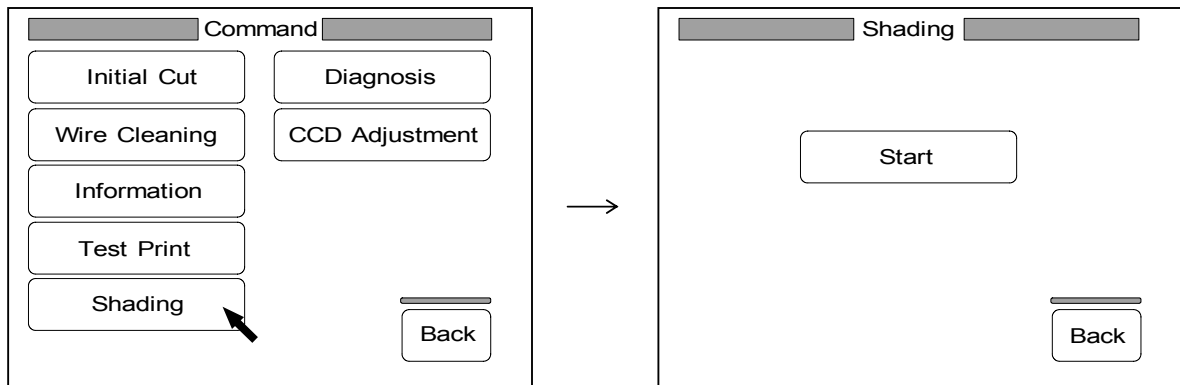
5) Push the Menu Key to indicate the Menu Screen on the LCD.



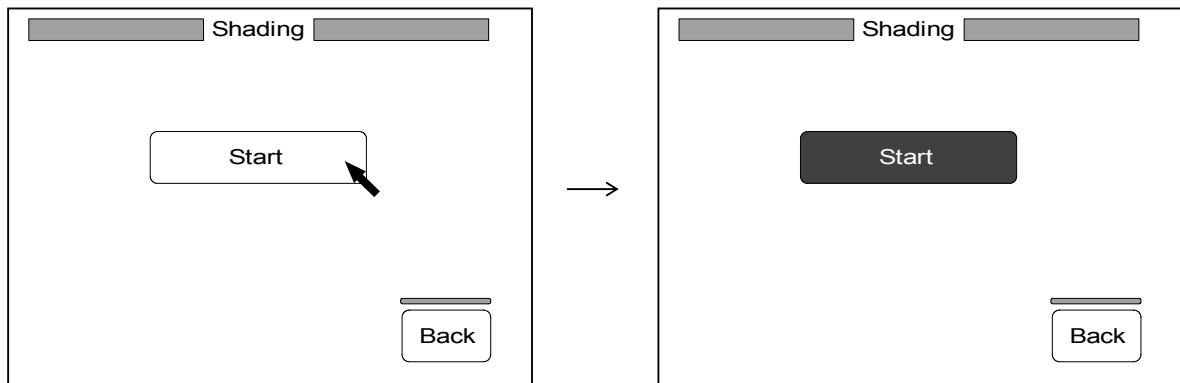
6) Press “Command” to indicate the Command Screen.



7) Press “Shading” to indicate the Shading Screen on the LCD.



8) Press “Start” to start Shading Compensation.  
“Start” is colored during Shading Compensation.  
When it is finished, “Start” is no longer colored.



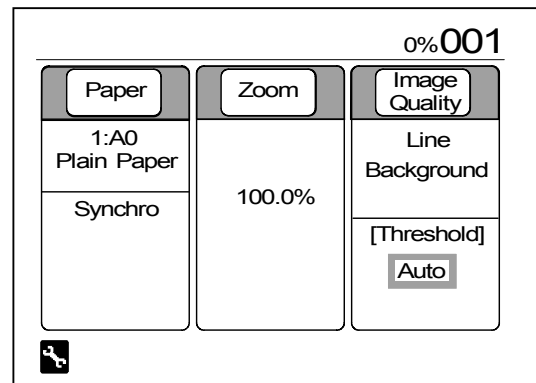
## 7.7 Diagnosis

It is possible to check whether or not the scanner functions physically well by Diagnosis.  
You have following checking items in the Diagnosis.

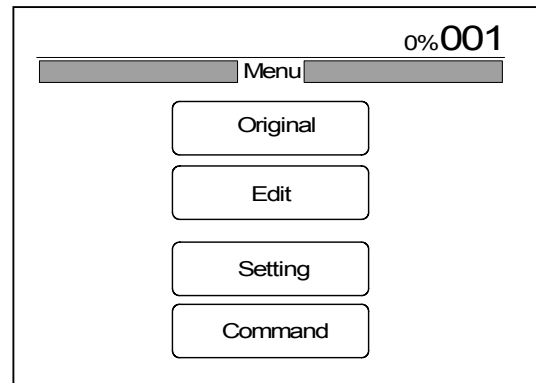
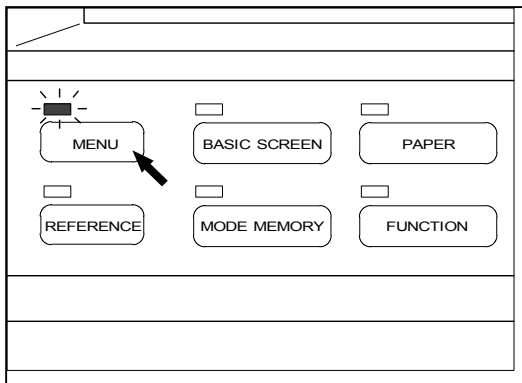
- 1 : LED All Lighting Test
- 2 : LED Shift Test
- 3 : Panel Key Test
- 4 : Sensor Test
- 5 : Motor Test
- 6 : DIMM Test
- 7 : SRAM Test

### 7.7.1 How to select each test item

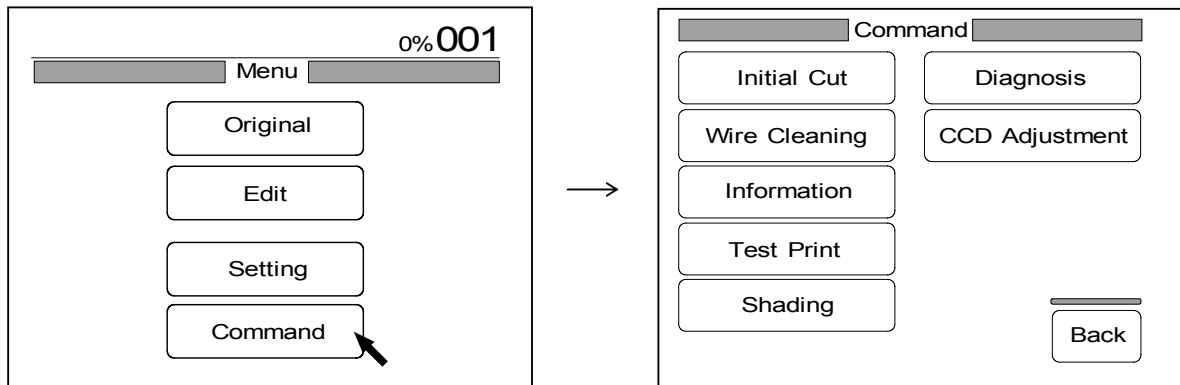
- 1) Enter the Service Mode.



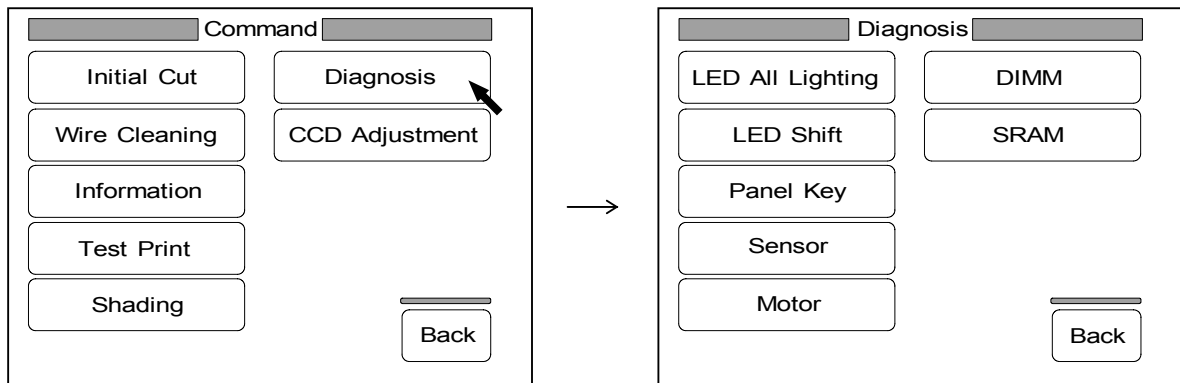
- 2) Push the Menu Key to indicate the Menu Screen on the LCD.



3) Press “Command” to indicate the Command Screen on the LCD.



4) Press “Diagnosis” to indicate the Diagnosis Screen on the LCD.



5) Select the test you wish to do, and carry out the test.  
As for the detail for each test, refer to the next page and later.

LED All Lighting Test (Page 7-89)  
LED Shift Test (Page 7-91)  
Panel Key Test (Page 7-93)  
Sensor Test (Page 7-95)  
Motor Test (Page 7-97)  
DIMM Test (Page 7-99)  
SRAM Test (Page 7-101)



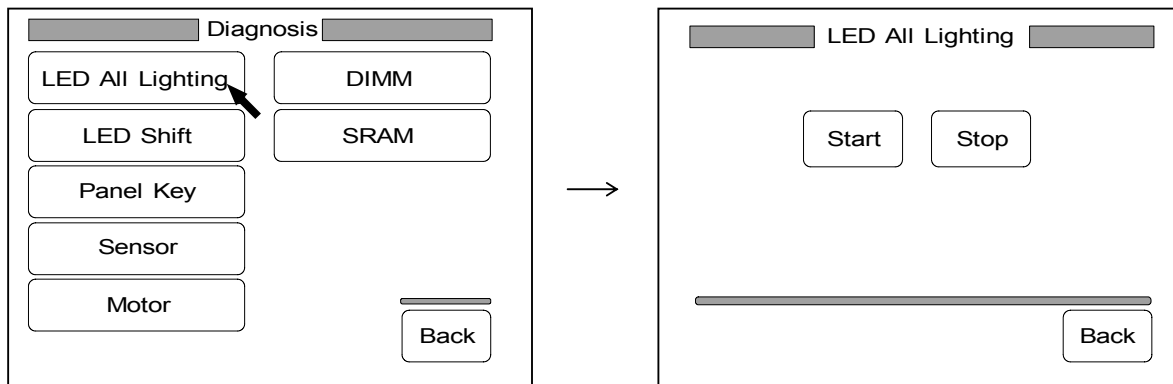
## 7.7.2 LED All Lighting Test

[Function]

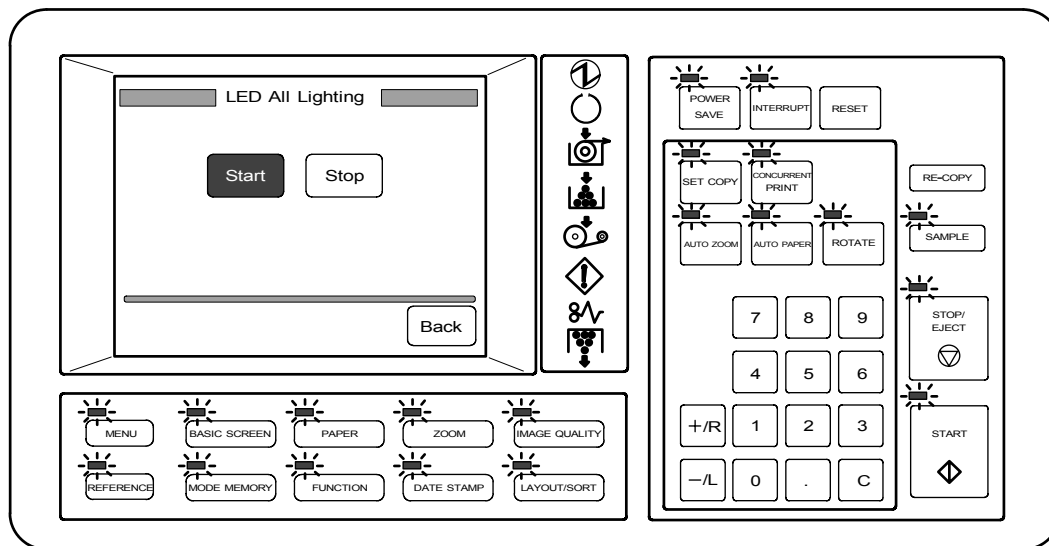
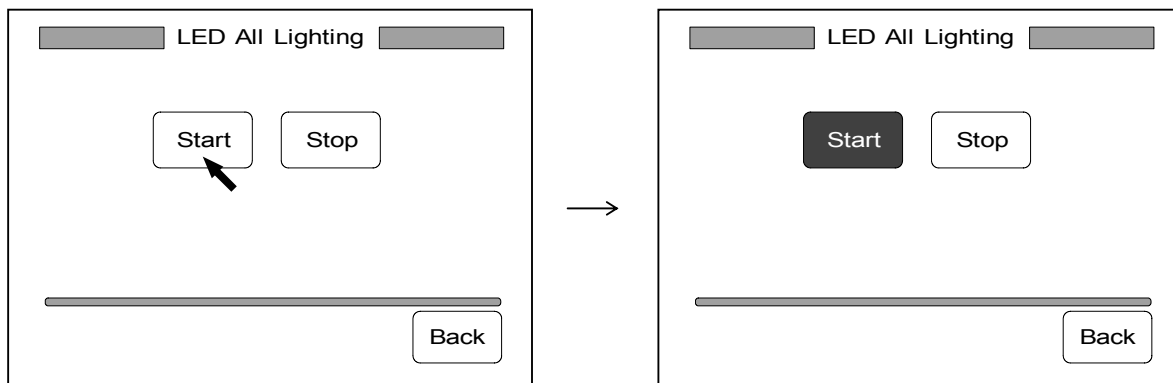
It is possible to check whether or not LED lamps on the Operation Panel work properly since all LED lamps light up.

[Operation]

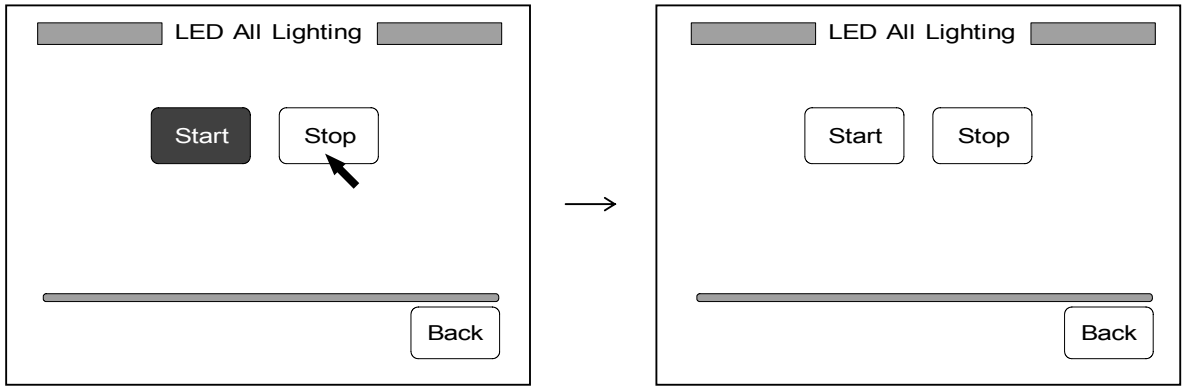
- 1) Press “LED ALL Lighting” in the Diagnosis Screen to select the LED All Lighting Test.  
The LCD indicates LED All Lighting Test Screen.



- 2) Press “Start” to start LED All Lighting Test.  
“Start” is colored and all LED lamps on the Operation Panel light up.



3) Stop the LED ALL Lighting Test pressing “Stop” on the LCD if you have finished checking.



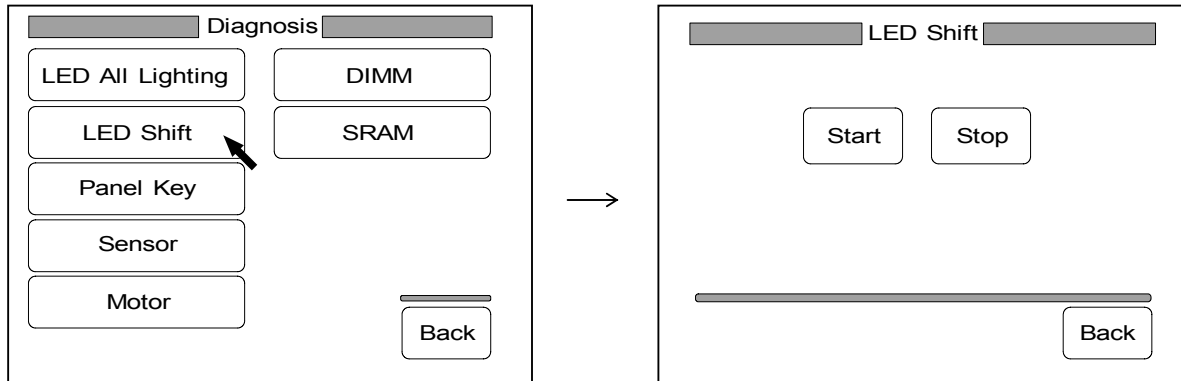
### 7.7.3 LED Shift Test

[Function]

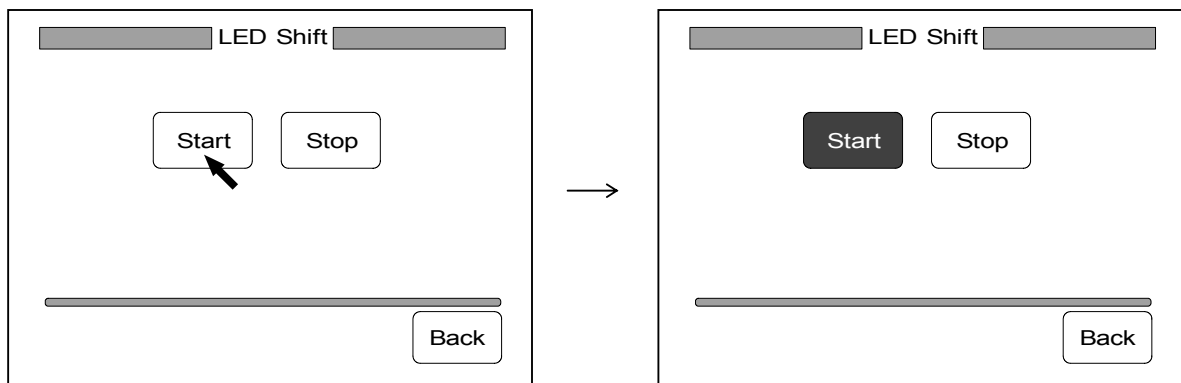
It is possible to check whether or not LED lamps on the Operation Panel work properly since LED lamps light up one by one orderly.

[Operation]

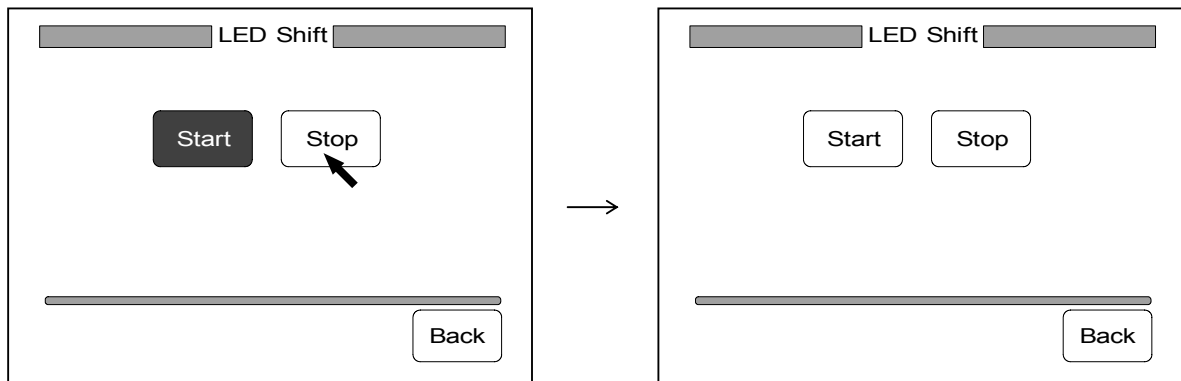
- 1) Press “LED Shift” in the Diagnosis Screen to select the LED Shift Test.  
The LCD indicates LED Shift Test Screen.

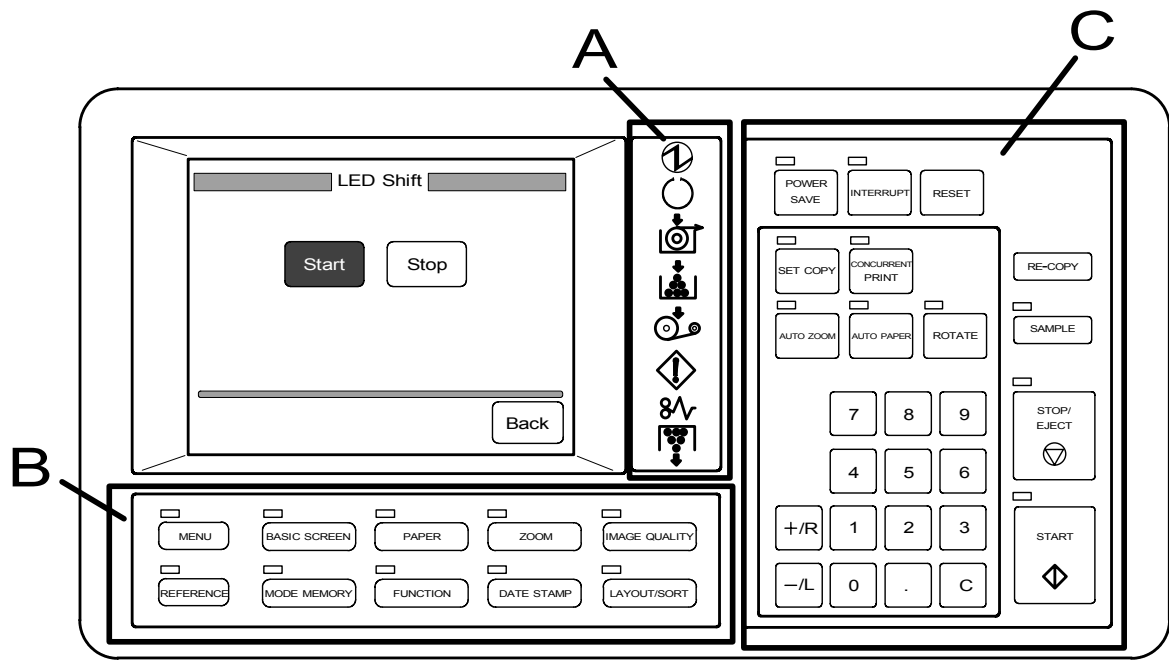


- 2) Press “Start” to start LED Shift Test.  
“Start” is colored and LED lamps on the Operation Panel light up one by one orderly.

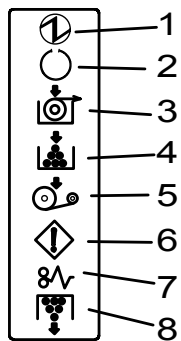


- 3) Stop the LED ALL Shift Test pressing “Stop” on the LCD if you have finished checking.

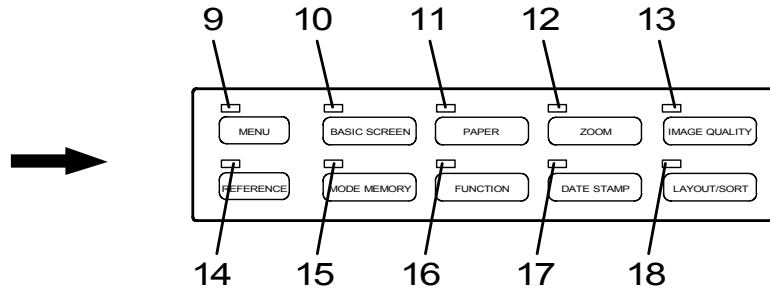




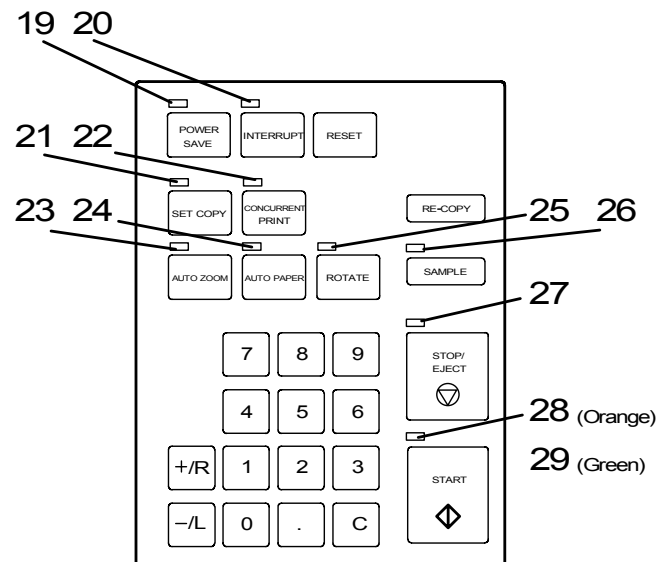
Part (A)



Part (B)



Part (C)



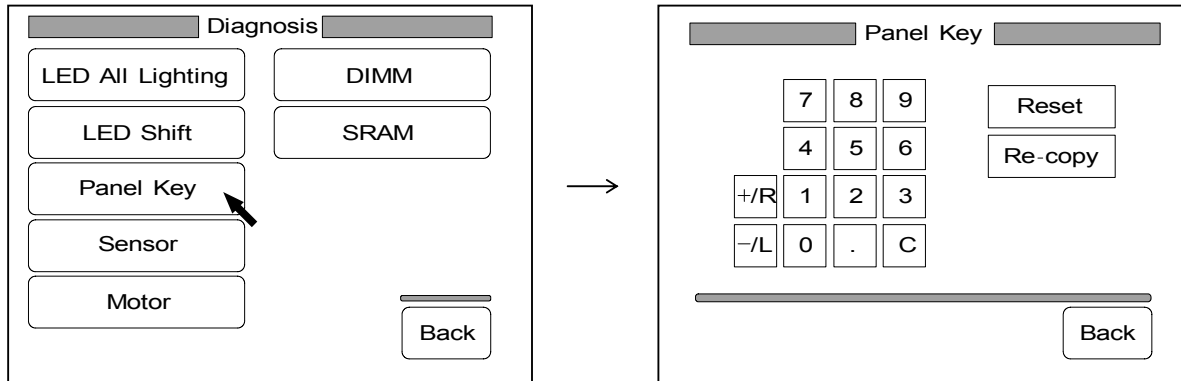
## 7.7.4 Panel Key Test

[Function]

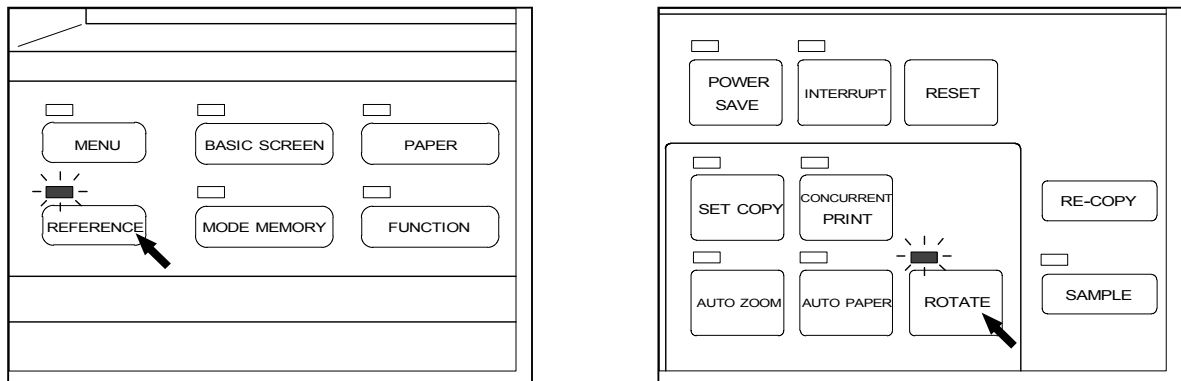
When you push each key on the Operation Panel, corresponding LED lamp or indicator lights up. You can check whether or not each key works properly.

[Operation]

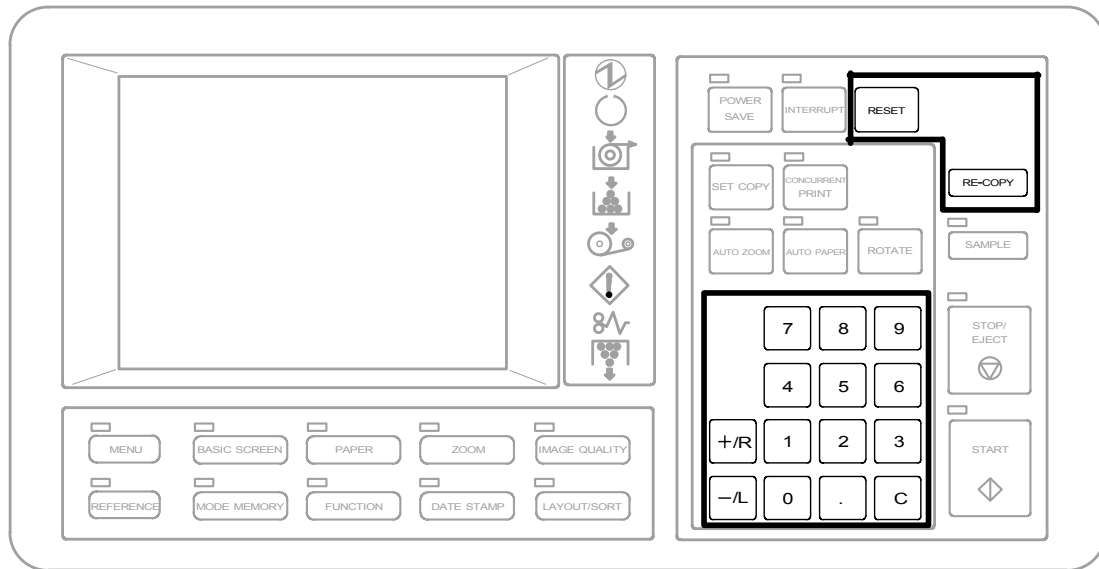
- 1) Press "Panel Key" in the Diagnosis Screen to select the Panel Key Test. The LCD indicates Panel Key Test Screen.



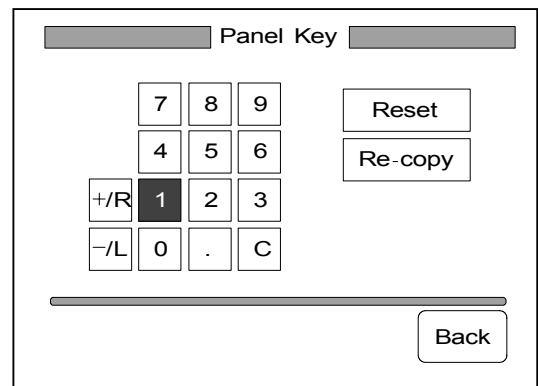
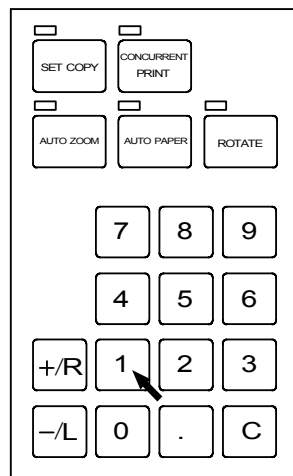
- 2) Press each Key on the Operation Panel. If the key has the LED lamp, it lights up when you push the key.



Since the following keys are without LED lamp, the indicator on the LCD is colored if you push the key.



Example : [1] key is pushed.



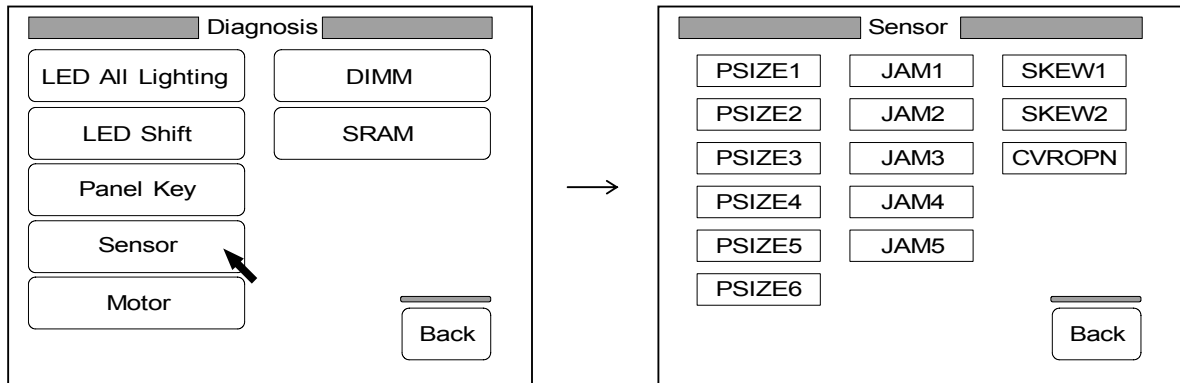
## 7.7.5 Sensor Test

### [Function]

You can check whether or not each sensor works properly.

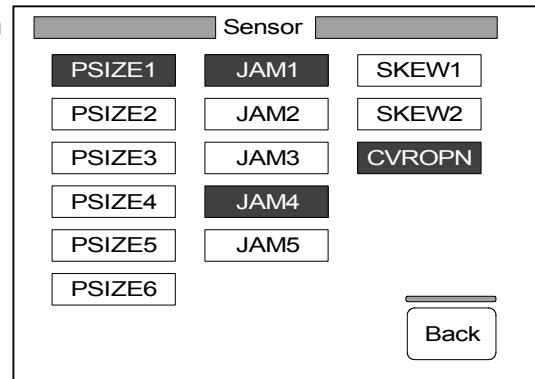
### [Operation]

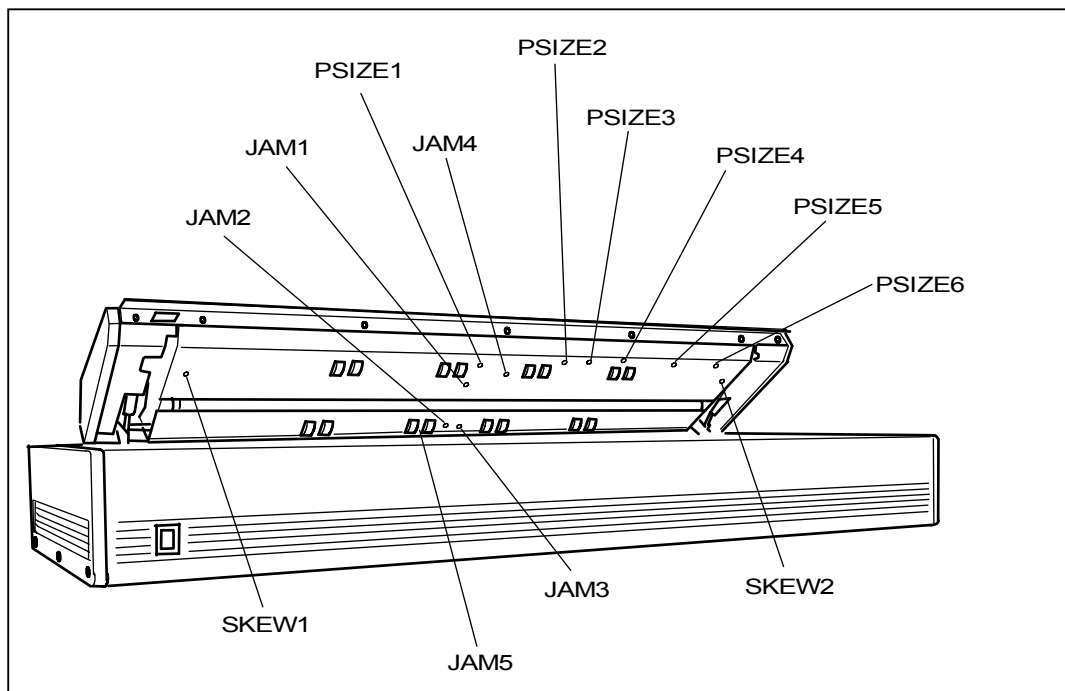
- 1) Press "Sensor" in the Diagnosis Screen to select the Sensor Test.  
The LCD indicates Sensor Test Screen.



- 2) Open the Upper Unit and close each sensor hole with something like a paper.  
If the sensor detects the paper normally, the corresponding indicator on the LCD is colored.  
(If you open the Upper Unit, "CVROPN" is colored.)

Location of sensors and corresponding signal names are mentioned on the next page.





- PSIZE1 ——— Original Size Sensor 1  
(Detecting A4 and 8.5", and detecting insertion of original)
- PSIZE2 ——— Original Size Sensor 2  
(Detecting A3, B4, 11" and 12")
- PSIZE3 ——— Original Size Sensor 3  
(Detecting A2, B3, 17" and 18")
- PSIZE4 ——— Original Size Sensor 4  
(Detecting A1, B2, 22" and 24")
- PSIZE5 ——— Original Size Sensor 5  
(Detecting A0, B1, 30" and 34")
- PSIZE6 ——— Original Size Sensor 6  
(Detecting 36")
- JAM1 ——— Original Jam Sensor 1  
(Detecting Leading/trailing edge of original also)
- JAM2 ——— Original Jam Sensor 2
- JAM3 ——— Original Jam Sensor 3
- JAM4 ——— Original Jam Sensor 4  
(Detecting Scan Wait Position also)
- JAM5 ——— Original Jam Sensor 5  
(Long Original Jam Sensor PCB : **It can not be seen from outside.**)
- SKEW1 ——— Original Skew Sensor 1 (Left)
- SKEW2 ——— Original Skew Sensor 2 (Right)
- CVROPN ——— Upper Unit Open Sensor



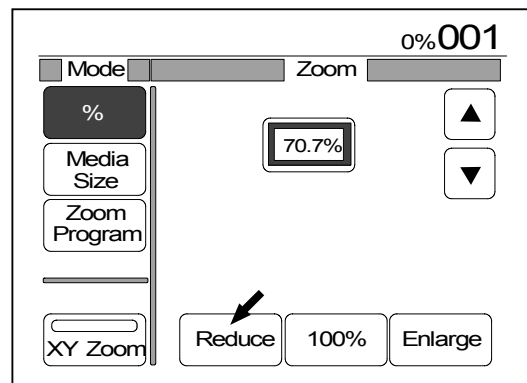
## 7.7.6 Motor Test

### [Function]

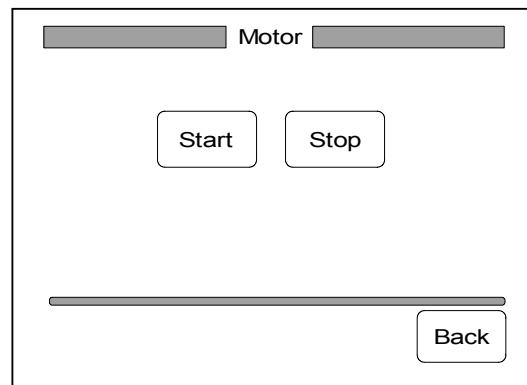
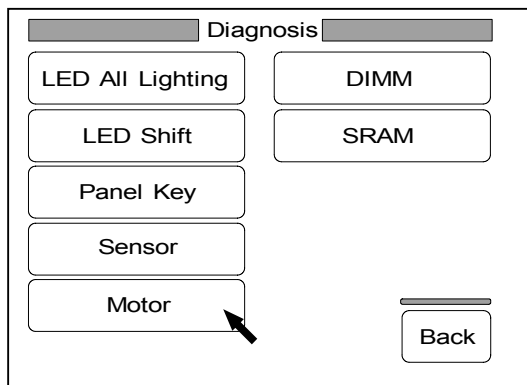
The Original Feeding Motor rotates depending on the selected zoom ratio.

### [Operation]

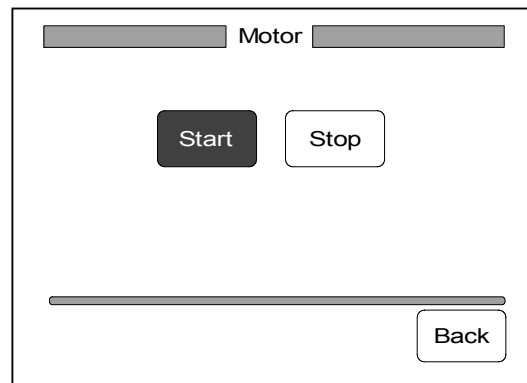
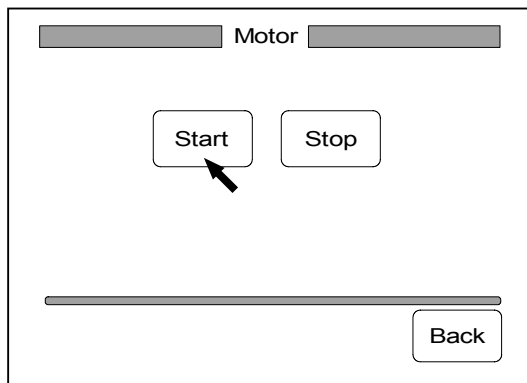
- 1) Enter the Service Mode, and then select your preferable zoom ratio in the Zoom Setting Screen.



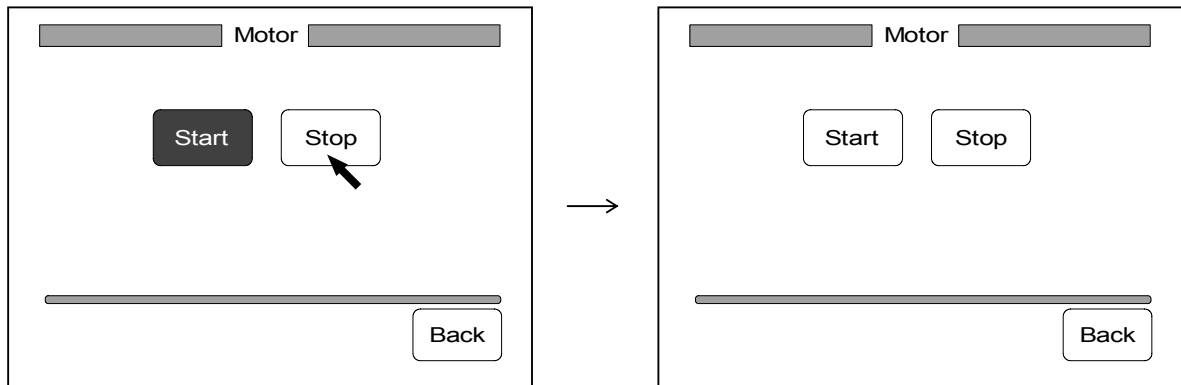
- 2) Indicate the Diagnosis Screen on the LCD, and then press "Motor" to select the Motor Test. The LCD indicates Motor Test Screen.



- 3) Press "Start" to start Motor Test. "Start" is colored and the Original Feeding Motor rotates depending on the selected zoom ratio.



4) Press “Stop” to stop the Motor Test when you have finished checking.



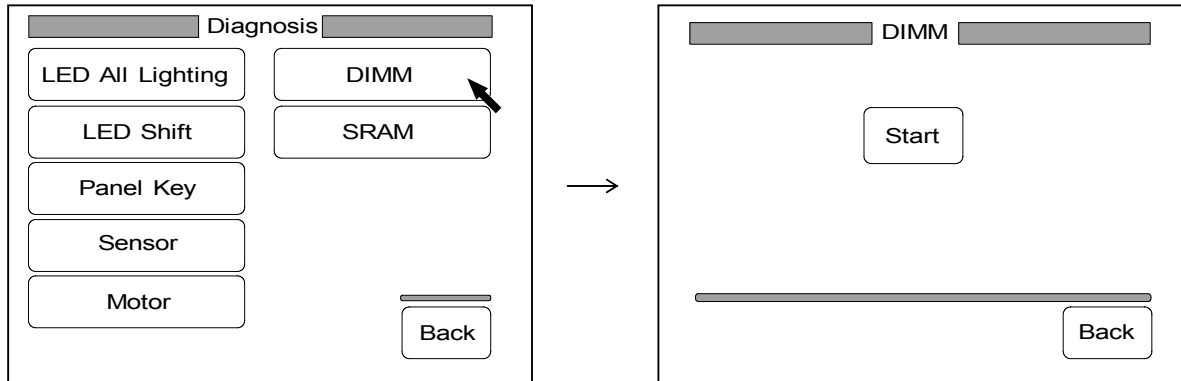
## 7.7.7 DIMM Test

[Function]

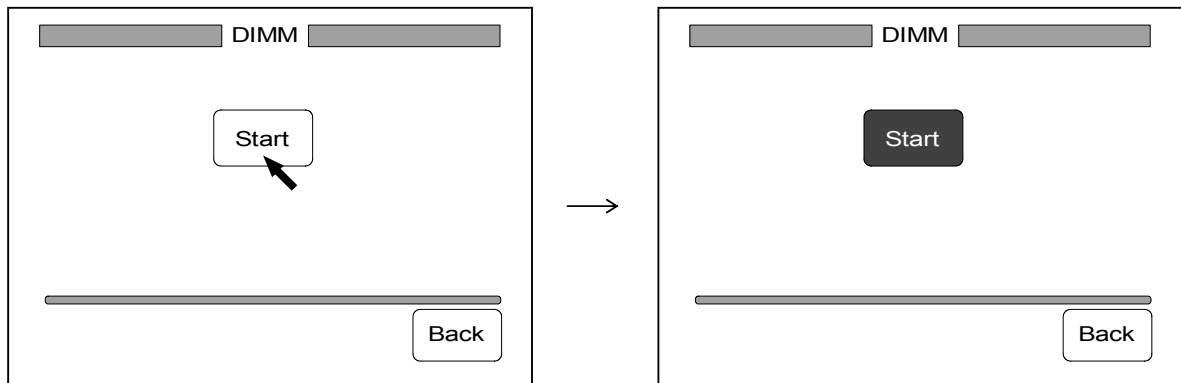
It is possible to check whether or not the DIMM is normal.  
Carry out the DIMM Test after installing the new DIMM or when some abnormal image is printed out.

[Operation]

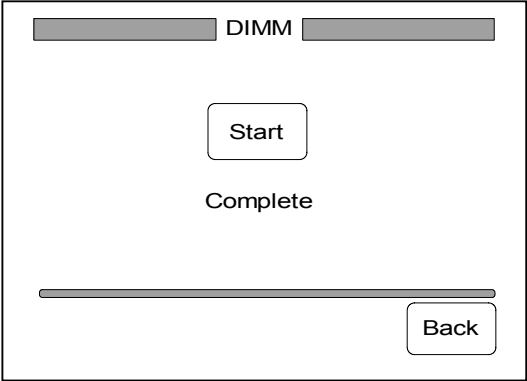
- 1) Press "DIMM" in the Diagnosis Screen to select the DIMM Test.  
The LCD indicates DIMM Test Screen.



- 2) Press "Start" to start DIMM Test.  
"Start" is colored during DIMM Test.  
Note that it takes a long time to complete the test. (About 48 minutes per 64MB)

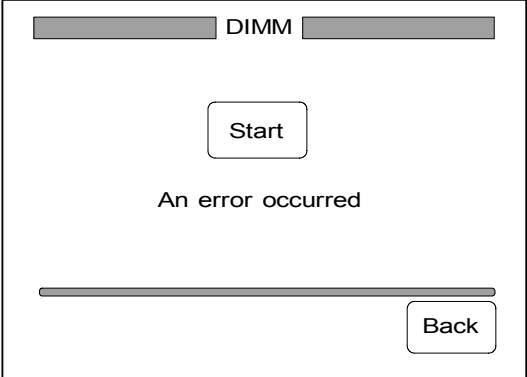


3) When the DIMM has no error, "Complete" is indicated.



A screenshot of a software interface for DIMM testing. At the top, there is a header bar with the word "DIMM" in the center. Below the header, there is a "Start" button. Underneath the button, the word "Complete" is displayed. At the bottom of the screen, there is a horizontal progress bar that is almost full, and a "Back" button is located at the bottom right corner.

When it has some problem, "An error occurred" is indicated.  
Replace the DIMM in this case.



A screenshot of a software interface for DIMM testing, showing an error state. At the top, there is a header bar with the word "DIMM" in the center. Below the header, there is a "Start" button. Underneath the button, the text "An error occurred" is displayed. At the bottom of the screen, there is a horizontal progress bar that is almost full, and a "Back" button is located at the bottom right corner.

## 7.7.8 SRAM Test

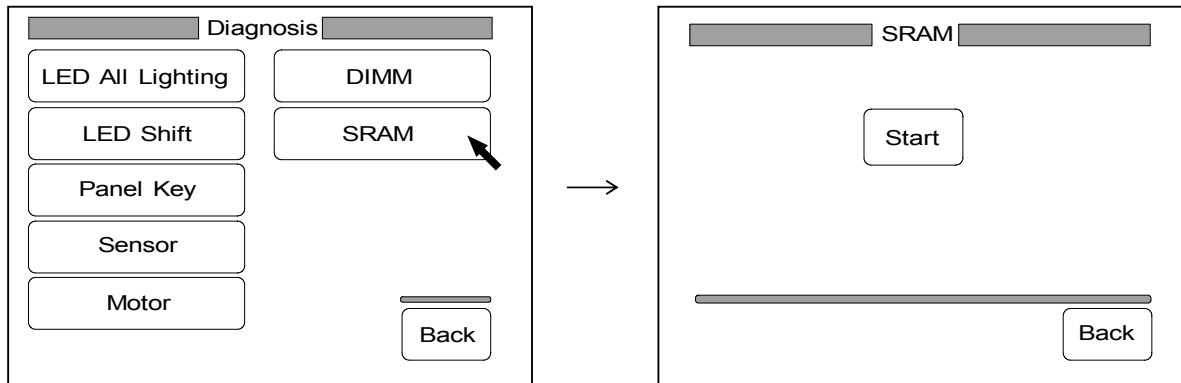
### [Function]

It is possible to check whether or not the SRAM of the Image Processor PCB is normal.  
Carry out the SRAM Test when some abnormal image is printed out.

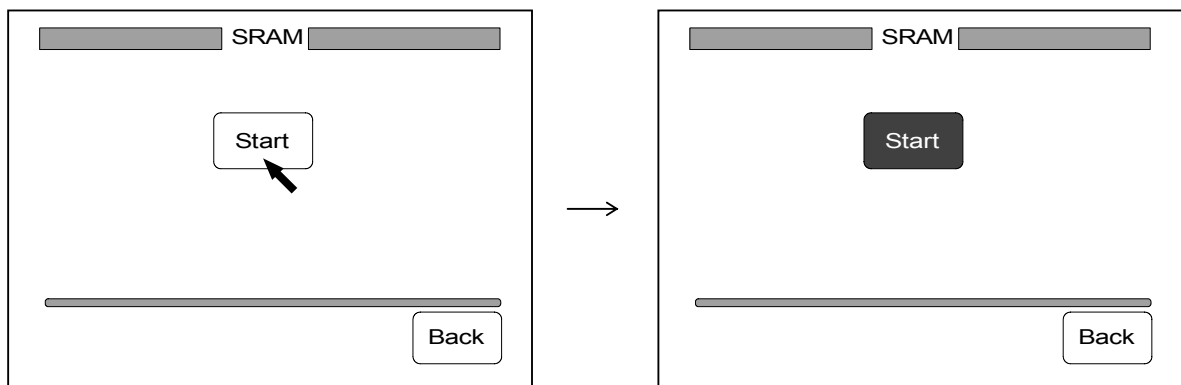
**Note : It is not necessary to do Shading Compensation after the SRAM TEST.**

### [Operation]

- 1) Press "SRAM" in the Diagnosis Screen to select the SRAM Test.  
The LCD indicates SRAM Test Screen.



- 2) Press "Start" to start SRAM Test.  
"Start" is colored during SRAM Test.



- 3) When the SRAM has no error, “Complete” is indicated.

A rectangular screen with a black border. At the top, a grey horizontal bar contains the text "SRAM" in black. Below this bar, centered, is a rounded rectangular button labeled "Start". Underneath the "Start" button, the word "Complete" is displayed in black text. At the bottom of the screen, there is a long, thin grey horizontal bar. To the right of this bar, at the bottom right corner of the screen, is a rounded rectangular button labeled "Back".

When it has some problem, “An error occurred” is indicated.  
Replace the Image Processor PCB in this case.

A rectangular screen with a black border, identical in layout to the one above. At the top, a grey horizontal bar contains the text "SRAM" in black. Below this bar, centered, is a rounded rectangular button labeled "Start". Underneath the "Start" button, the text "An error occurred" is displayed in black text. At the bottom of the screen, there is a long, thin grey horizontal bar. To the right of this bar, at the bottom right corner of the screen, is a rounded rectangular button labeled "Back".

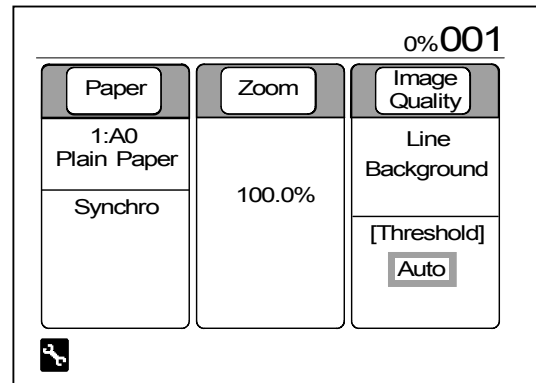
## 7.8 CCD Adjustment Mode

### [Function]

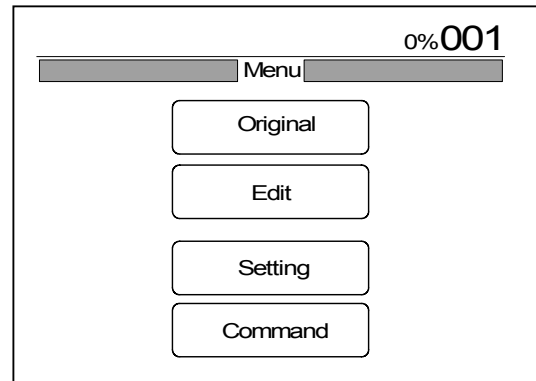
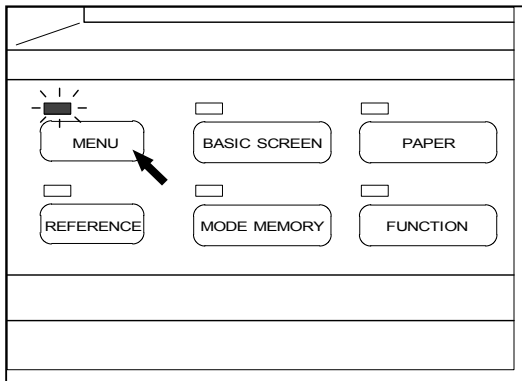
It is possible to place the Optical Unit (Both Block 1 and Block2) at the Home Position.  
(Home position is the center of 400 steps of Optical Unit's movable range.)

### [Operation]

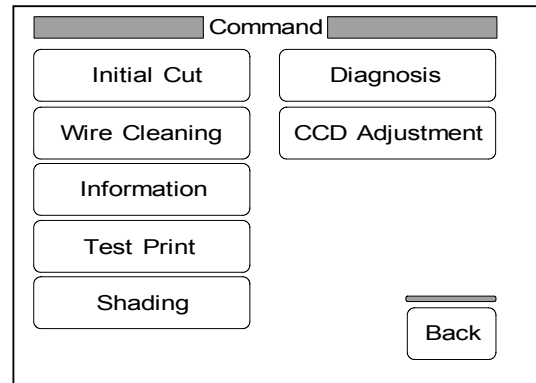
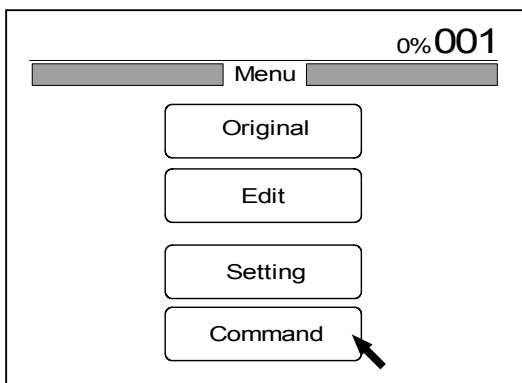
- 1) Enter the Service Mode.



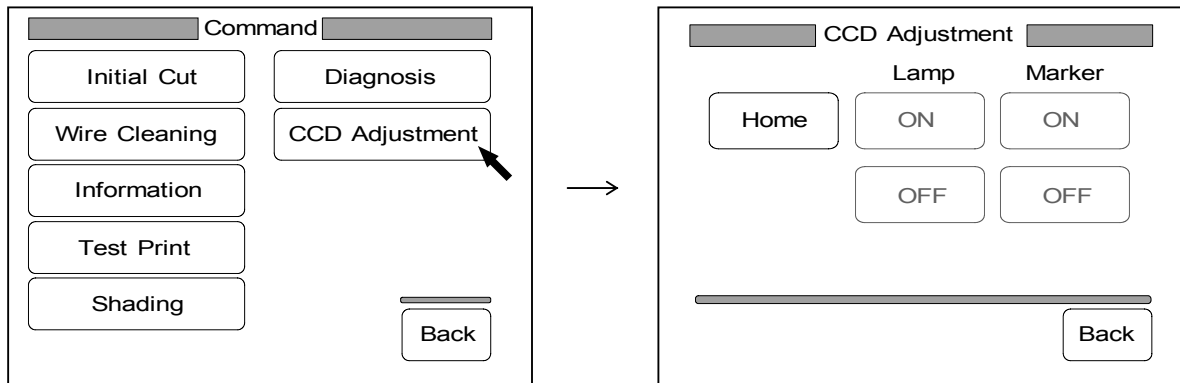
- 2) Push the Menu Key to indicate the Menu Screen on the LCD.



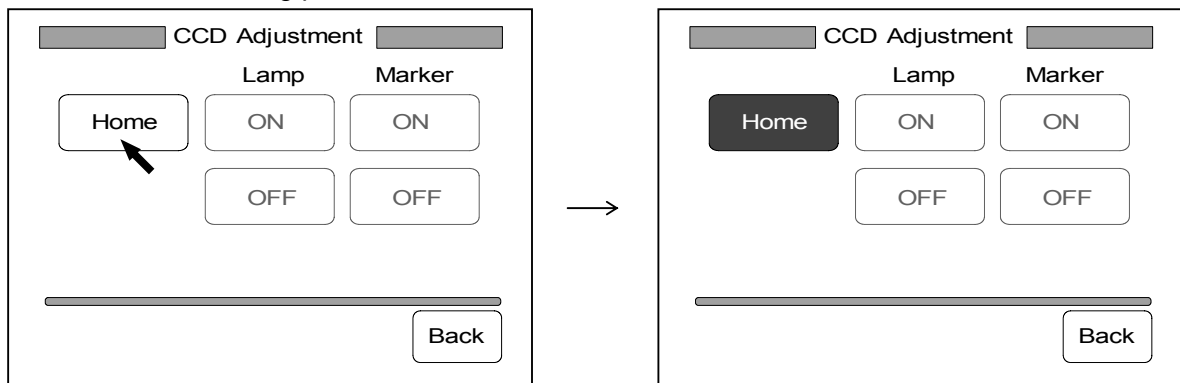
- 3) Press "Command" to indicate the Command Screen on the LCD.



- 4) Press “CCD Adjustment” to indicate the CCD Adjustment Screen on the LCD.

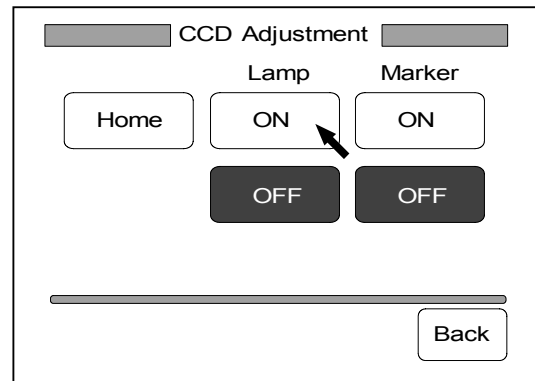


- 5) If you press “Home”, the Optical Unit is placed at the Home Position.  
“Home” is colored during placement.

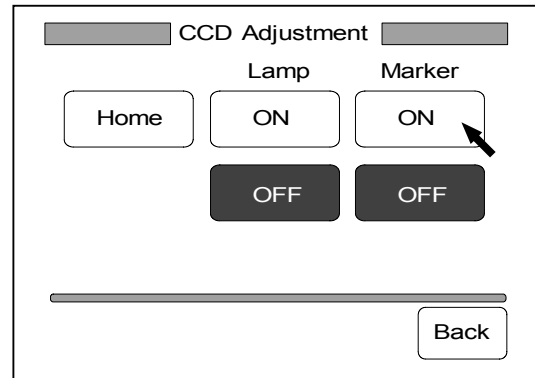


- 6) When placement has been finished, indicators “ON” and “OFF” below “Lamp” and “Marker” become valid.

If you press “ON” below “Lamp”, Lamps (Cold Cathode Ray Tubes) light up.  
They stop lighting if you press “OFF”.



If you press “ON” below “Marker”, the Marker (Pointer LED) light up.  
It stops lighting if you press “OFF”.





## 7.9 Promotion of Firmware (PROM)

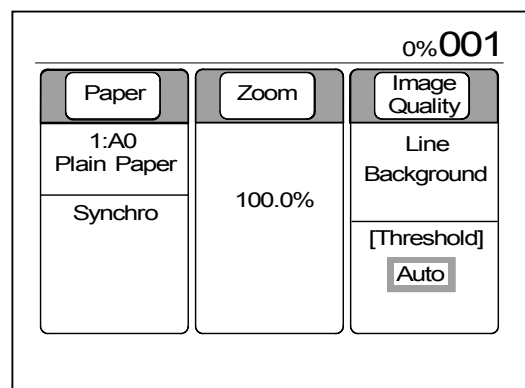
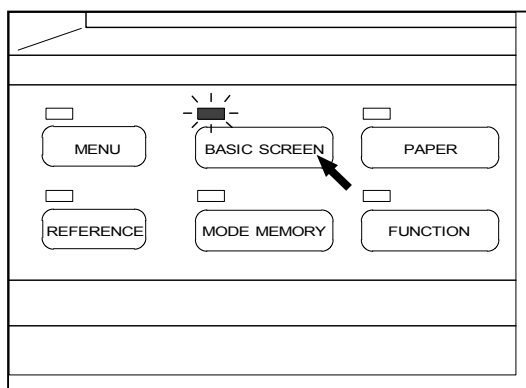
It is possible to promote the version of Firmware (PROM) by the following works.

1. Printing out the Back Up Data List
2. Connect RS-232C Terminal of the scanner and that of computer by the Cross Cable.
3. Boot up the Windows, start the application "Hyper Terminal", and then promote the version in "Hyper Terminal".  
(Hyper Terminal is contained in the Windows CD.)

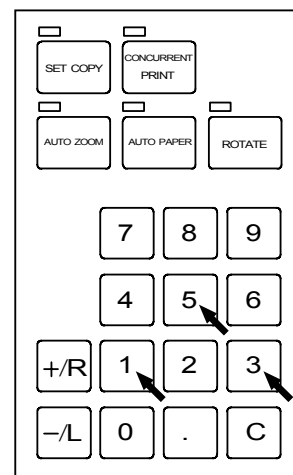
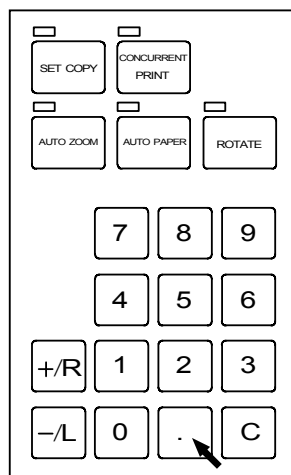
### 7.9.1 Printing out the Back Up Data List

**Note :** If the Firmware version is 1.03 or newer, the present setting values of Back Up Data and Shading Data will be preserved even if you promote the Firmware version.  
**However, make sure to print out the Back Up Data List for the safety before promoting the Firmware.**

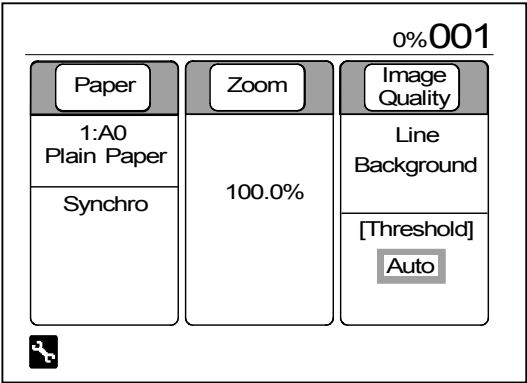
- 1) Push the Basic Screen Key to indicate the Basic Screen on the LCD.



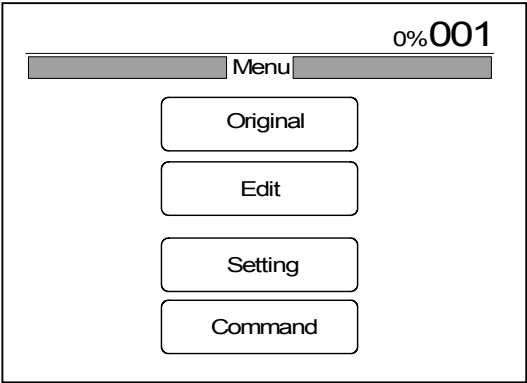
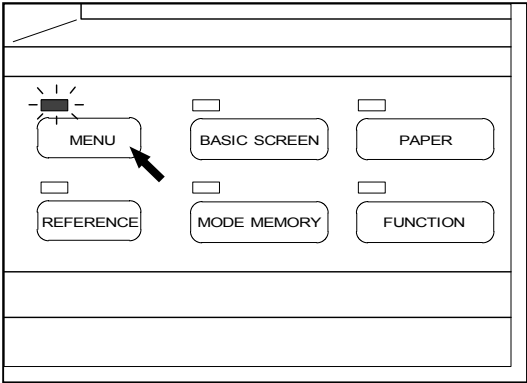
- 2) Press and hold the [ . ] Key, and then push keys in the order as [1], [3] and [5] to enter the Service Mode.



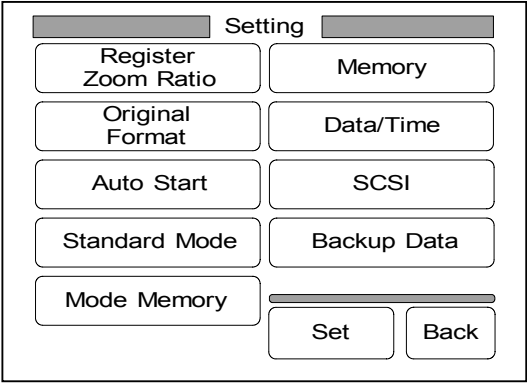
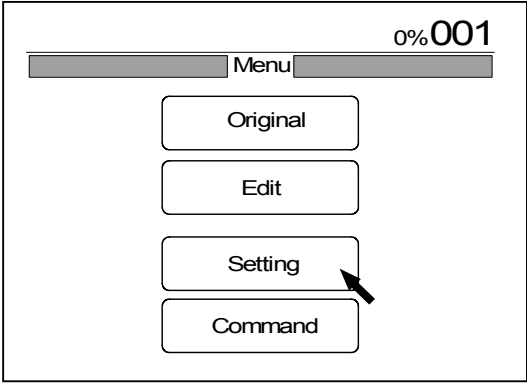
3) A mark of wrench is indicated in the Basic Screen when you enter the Service Mode.



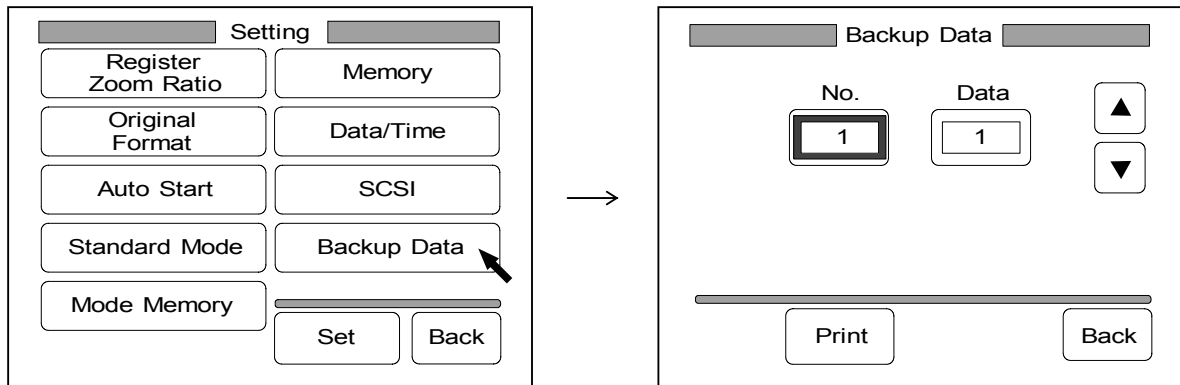
4) Push the Menu Key to indicate the Menu Screen on the LCD.



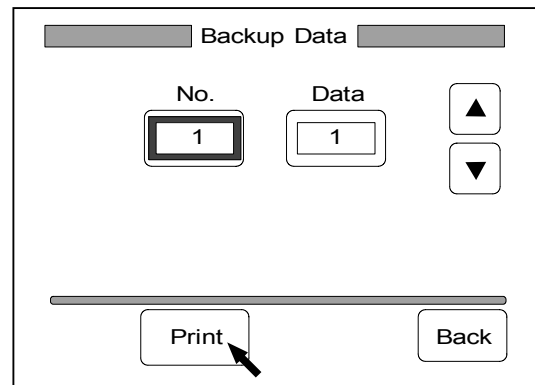
5) Press "Setting" to indicate the Setting Screen on the LCD.



6) Press "Backup Data" to indicate the Back Up Data Setting Screen on the LCD.



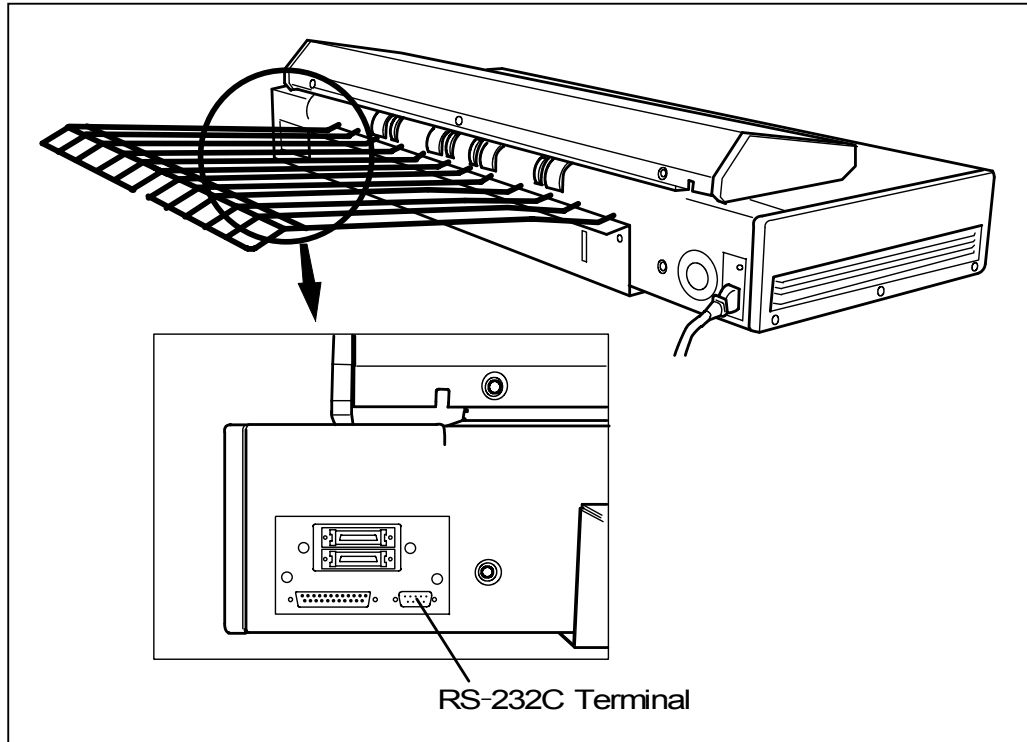
7) Press "Print" to print out the Back Up Data List.



## 7.9.2 Connecting the Cross Cable to RS-232C Terminals

Connect one connector of the Cross Cable to the RS-232C Terminal which is at the rear side of the scanner.  
Connect another connector to the computer also.

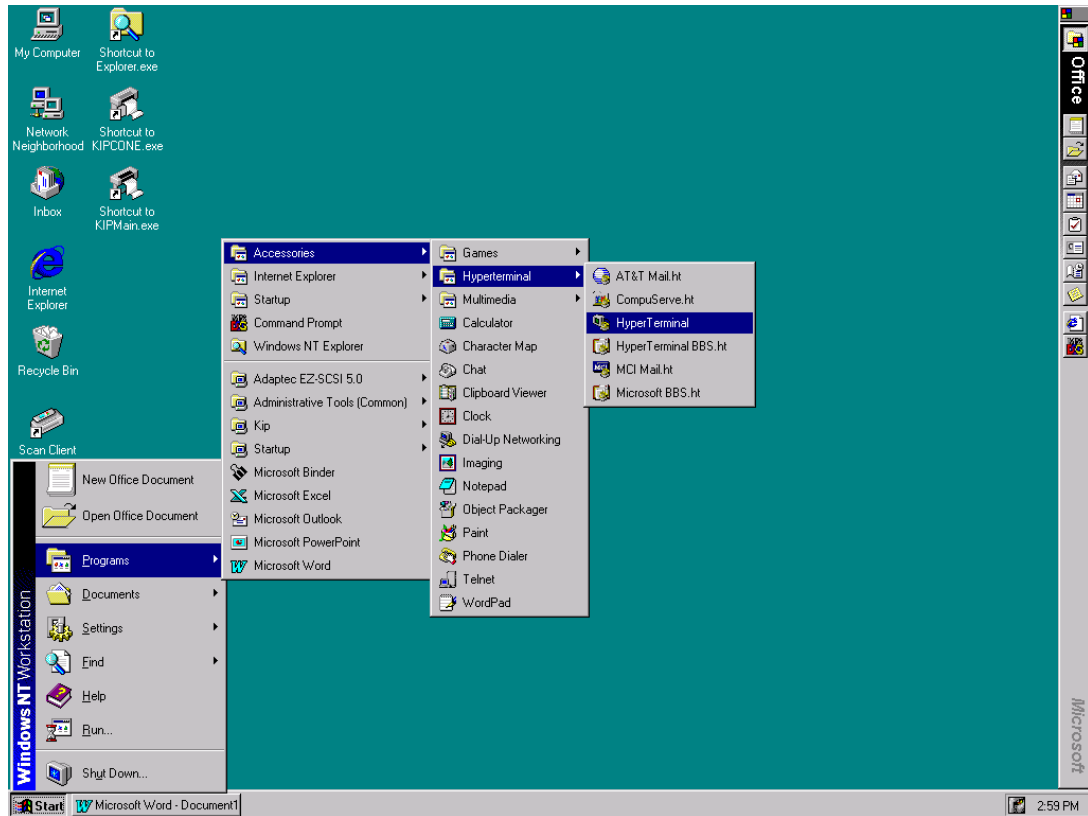
**Note :** Make sure to connect the Cross Cable to the RS-232C Terminal only in case you promote the version of Firmware.  
Nothing has to be connected to the RS-232C Terminal in other cases.



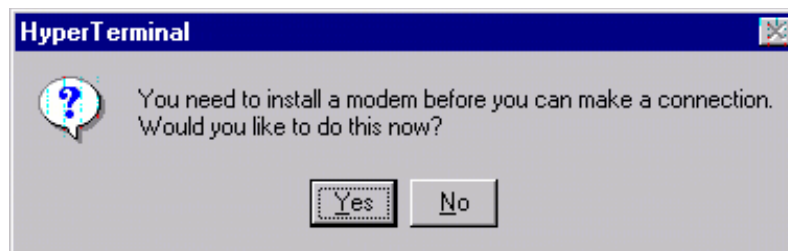
### 7.9.3 Promoting the version of Firmware in Hyper Terminal

**Note :** If Hyper Terminal is not installed to the computer, install it from the Windows CD.

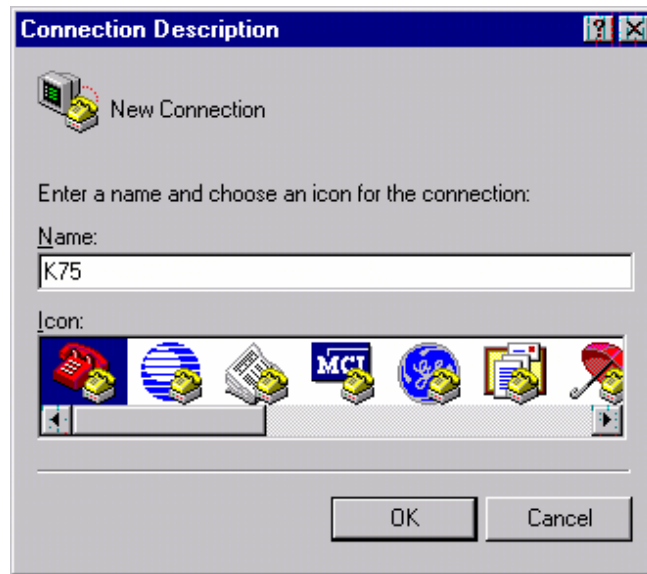
- 1) Boot up the Windows, and then start Hyper Terminal.



- 2) When the following message is indicated, click "No".



- 3) The following window “Connection Description” is indicated at first.  
Input some name such as “K-75”, and then click “OK”.

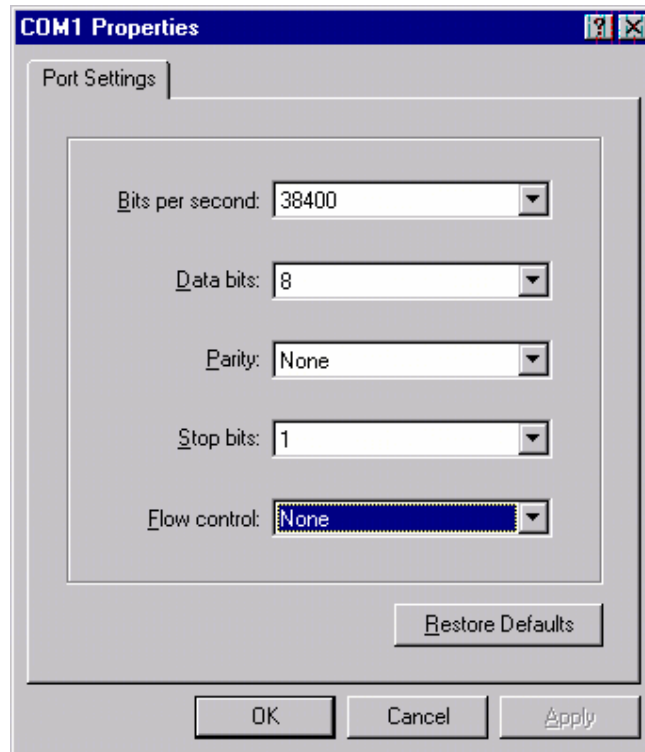


- 4) The following window “Connect to” is indicated next.  
Select either “COM1” or “COM2” from the pull-down menu of “Connect using”, then click “OK”.

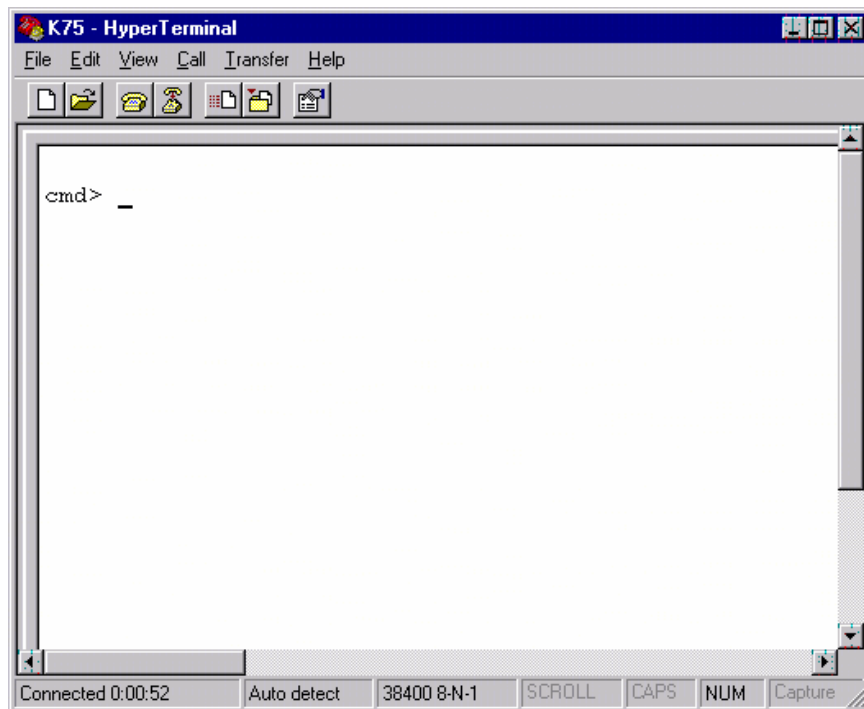


- 5) The following window “COM1 Properties” is indicated next.  
Select the following settings from the pull-down menu of each item, and then click “OK”.

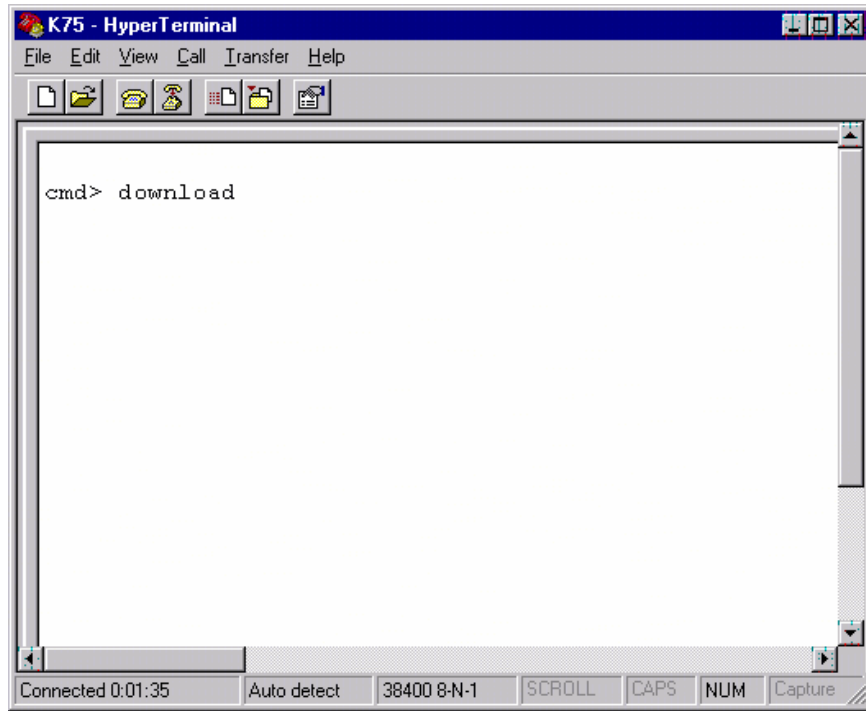
Bits per second — 38400  
Data bits — 8  
Parity — None  
Stop bits — 1  
Flow control — None



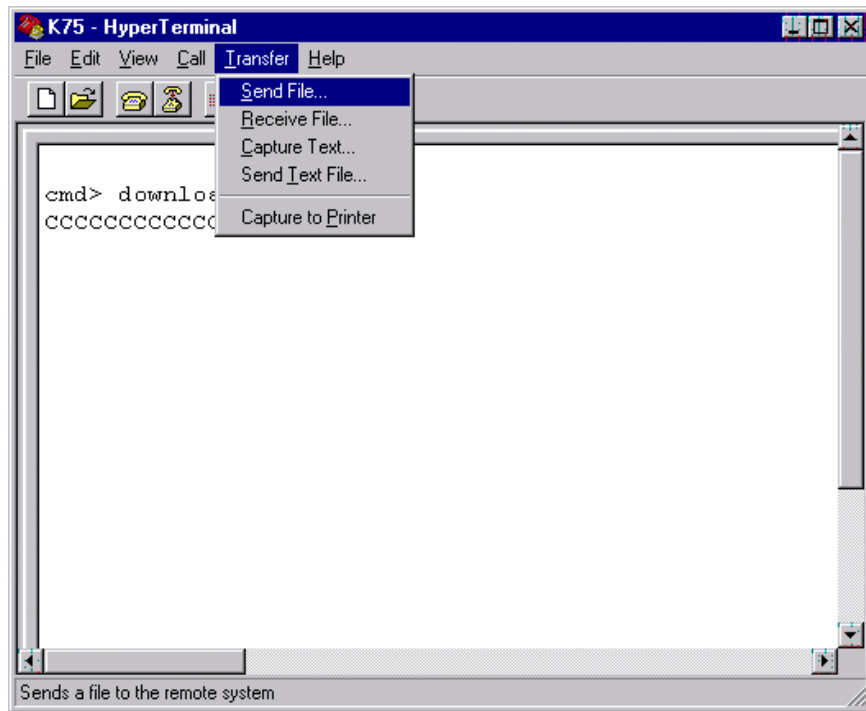
- 6) Hyper Terminal becomes active.  
If you press the Enter Key of the keyboard, “cmd>” is indicated.



7) Input "download", and then press the Enter Key.

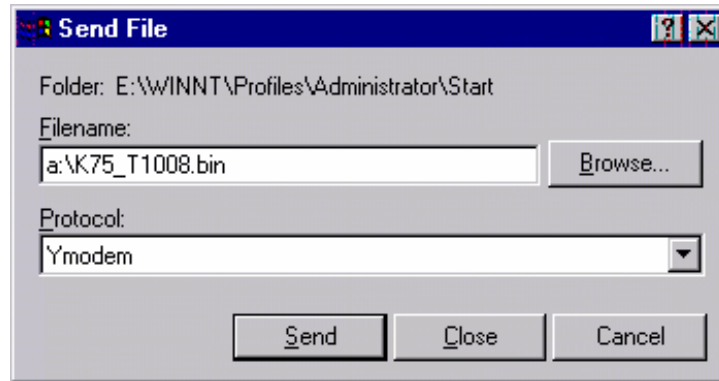


8) When you press the Enter Key in the above 7), many of alphabet "C" are indicated endlessly. When "C" are indicated, select "Send File" from the pull-down menu of "Transfer".

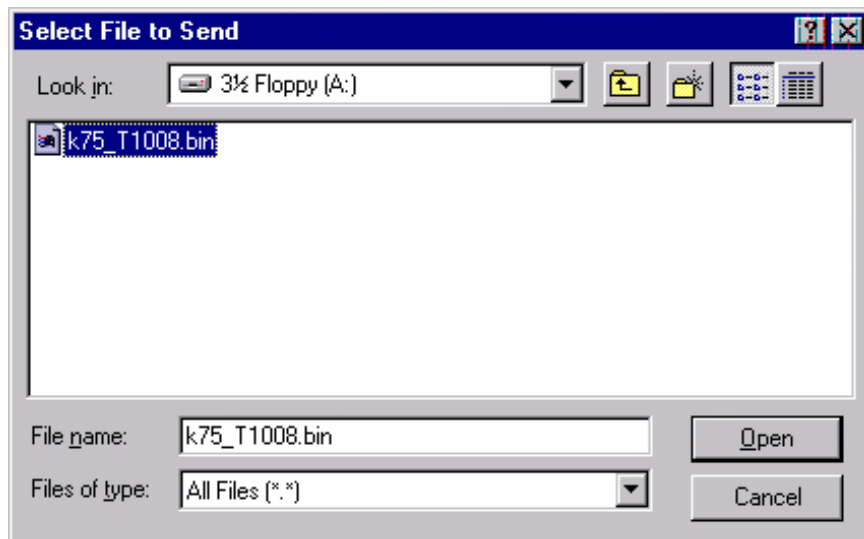




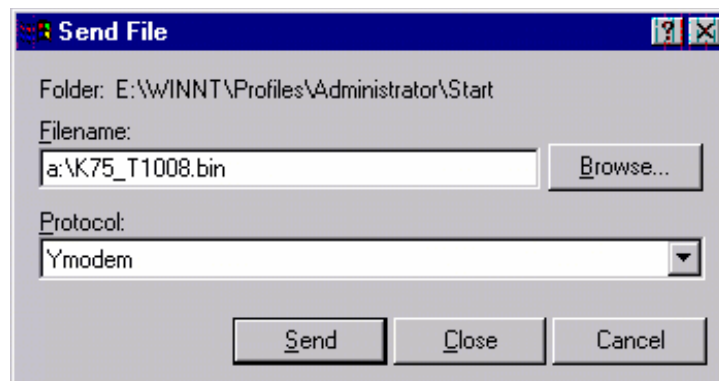
- 9) The following window “Send File” is indicated.  
Insert the floppy disk to the floppy disk drive of computer, which has the new Firmware.  
Then, Click “Browse”.



- 10) The following window “Select File to Send” is indicated.  
Select the filename of new Firmware in the floppy disk, then click “Open”.

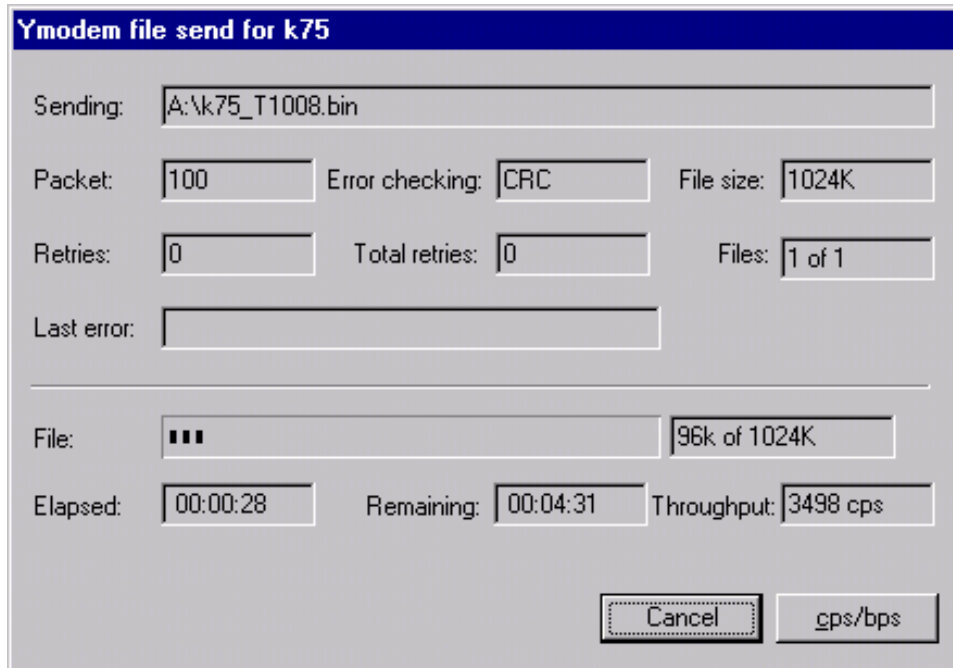


- 11) Window “Send File” is indicated again.  
Select “Ymodem” from the pull-down menu of “Protocol”, and then click “Send”



- 12) The following window “Ymodem file send for K75” is indicated, and Hyper Terminal starts to send the Firmware File to the scanner.

It takes about 5 or 6 minutes to send the file completely.

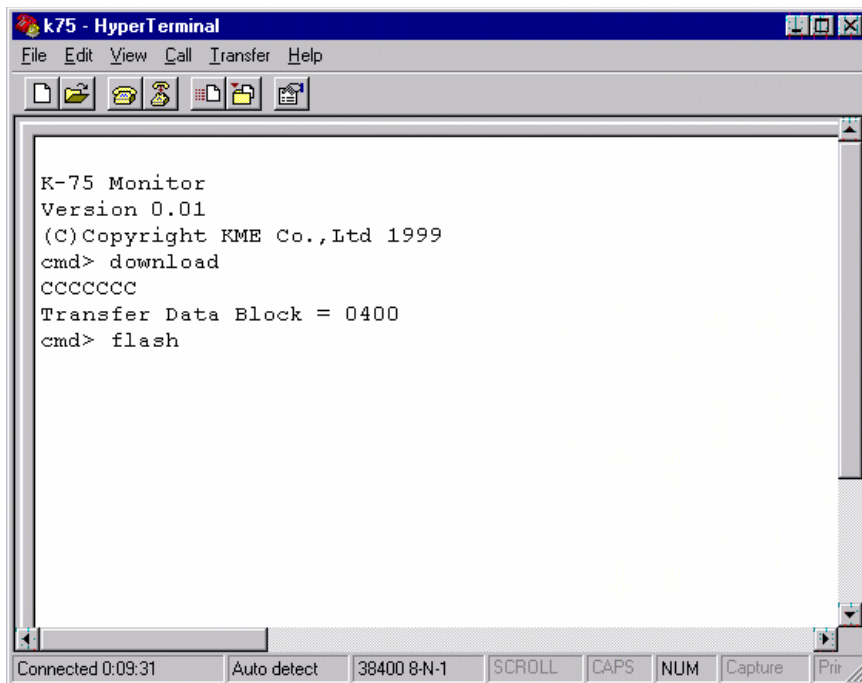


The image shows a dialog box titled "Ymodem file send for k75". It contains several input fields and buttons. The "Sending:" field shows "A:\k75\_T1008.bin". The "Packet:" field is set to "100", "Error checking:" is "CRC", and "File size:" is "1024K". The "Retries:" field is "0", "Total retries:" is "0", and "Files:" is "1 of 1". The "Last error:" field is empty. Below these fields, there is a progress bar labeled "File:" with three black bars and a label "96k of 1024K". The "Elapsed:" field shows "00:00:28", "Remaining:" shows "00:04:31", and "Throughput:" shows "3498 cps". At the bottom right, there are two buttons: "Cancel" and "cps/bps".

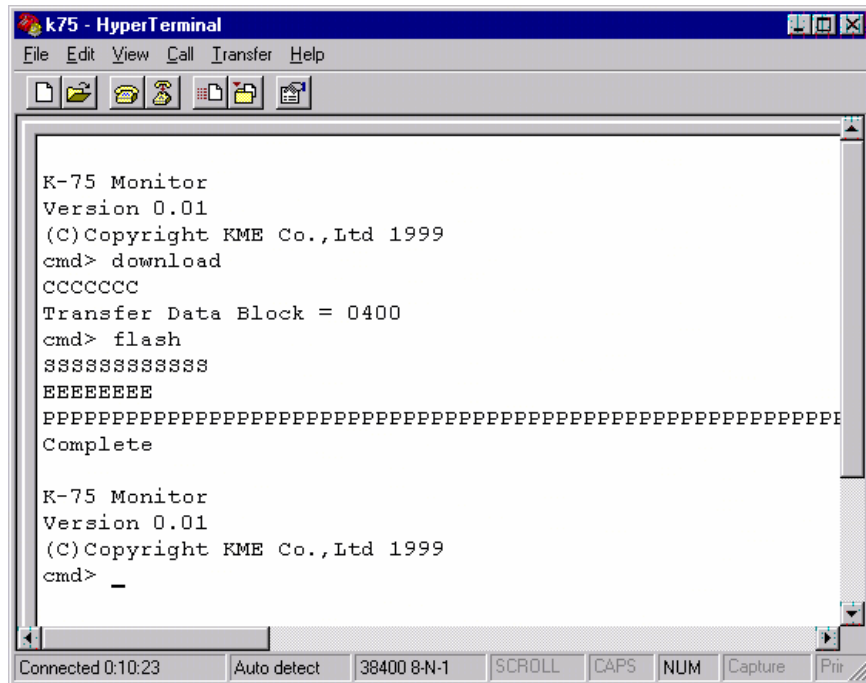
- 13) When Hyper Terminal finishes to send the file, “cmd>” is indicated. Input “flash”, and then press the Enter Key.

**Note : Make sure to input “flash” and to press the Enter Key.**

**If you forget to do this operation, new Firmware will not be effected.**



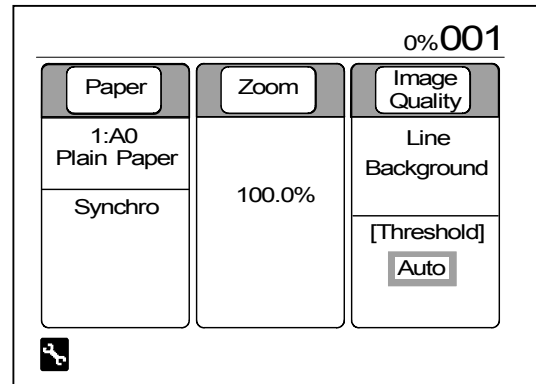
- 14) New Firmware is effected when “Complete” is indicated.  
Close the Hyper Terminal.  
Promotion is over by this operation.



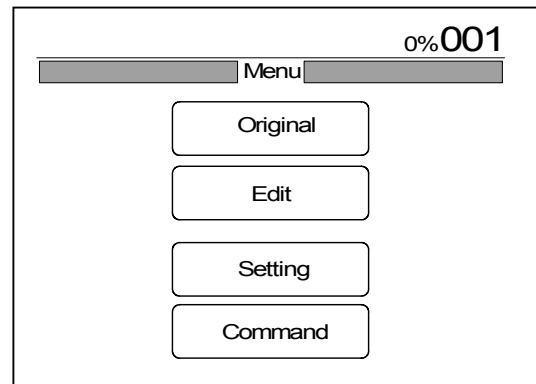
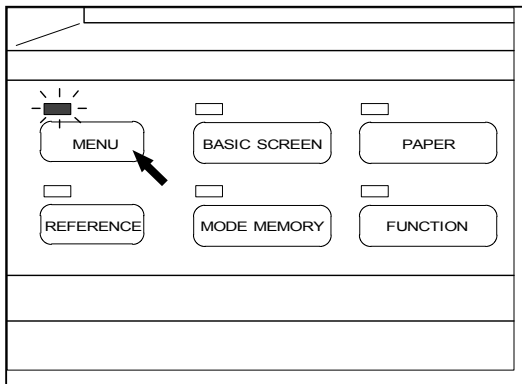
## 7.10 Clear Count

It is possible to clear the Scan Count by the following operation if required.

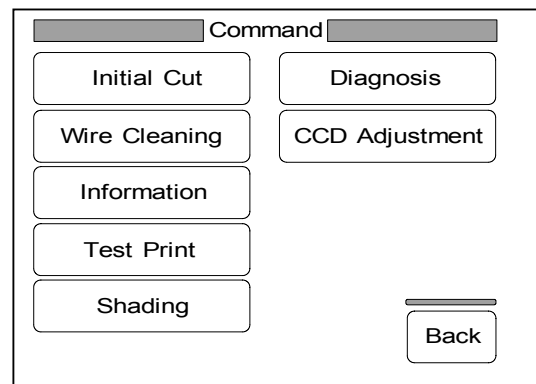
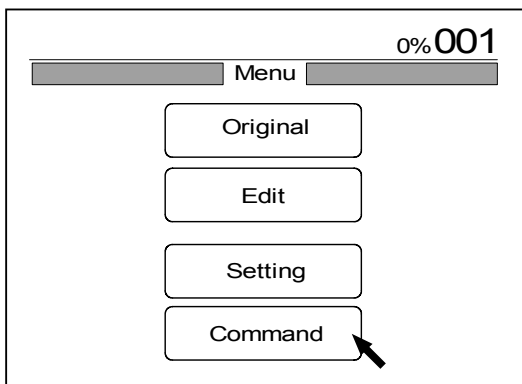
- 1) Enter the Service Mode.



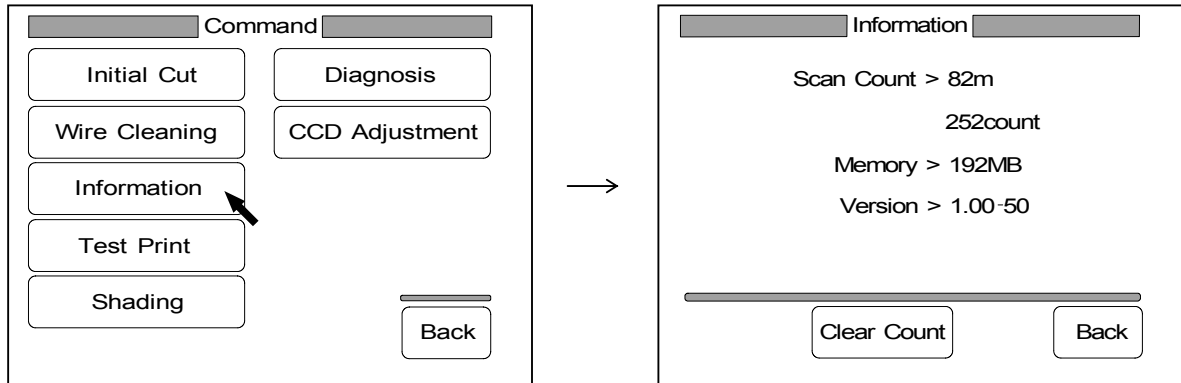
- 2) Push the Menu Key to indicate the Menu Screen on the LCD.



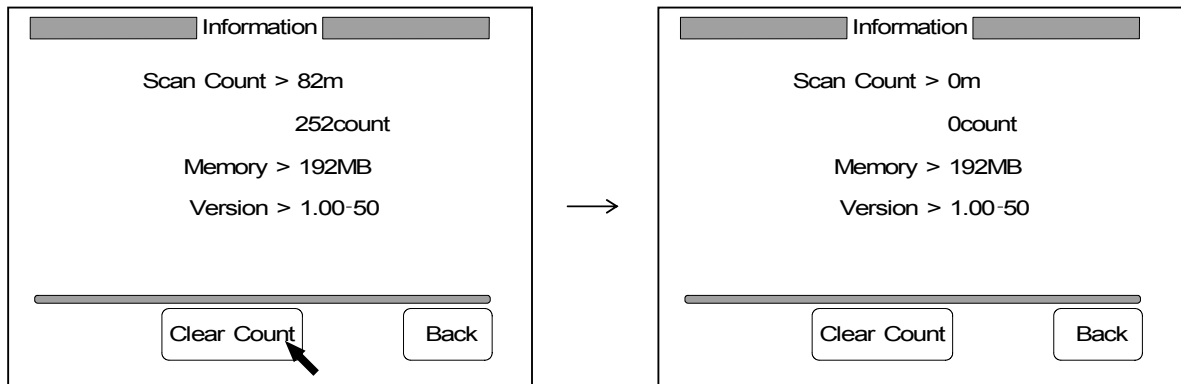
- 3) Press "Command" to indicate the Command Screen on the LCD.



- 4) Press "Information" to indicate the Information Screen on the LCD.



- 5) Press "Clear Count" to clear the Scan Count.  
The value of each "total length of originals ever scanned" and "total number of originals ever scanned" becomes "0".



# **Chapter 8**

## **Appendixes**

8.1 General Circuit Diagram

